EXPERTS IN THE WILD

Natural history film-making as a culture of knowledge-production

Jean-Baptiste Gouyon

Thesis submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy

University of York
Department of Sociology

May 2009

Abstract

This thesis is about natural history film-making and how it relates to the public understanding of science. The word 'public' in the phrase is taken to designate in the first place the film-makers. The study is thus one which investigates how natural history film-makers negotiate their identity and situate their knowledge with relation to sciences. Drawing on an examination of the history of the development of natural history film-making in Britain, and on two case studies of contemporary examples of natural history films, this thesis first suggests that the culture of natural history film-making should be regarded as an offshoot of the Victorian culture of amateur natural history, thus as a form of knowledge-production in its own right, instead of a form of popularisation of science. In this perspective, natural history film-makers appear as spokespersons for nature and not for science. Their relationship to scientific practitioners would be aptly described as one of co-existence on either side of a border, peopled with such objects as animals, plants, and the motion-picture camera. Natural history film-makers' cognitive authority stems from their status as amateurs naturalists—deriving their knowledge of the natural world from their capacity to engage intimately with it—as well as from their ability to use the film-making apparatus convincingly. The types of evidences supporting the claims to trustworthiness to be observed in natural history films do not appear to relate to the values and beliefs of professional science but to the culture of amateur natural history and to the conventions of the film medium. In order to account for the type of authority to speak for nature embodied in the culture of natural history film-making, this thesis proposes to use the word "telenaturalist".

Table of Content

Abstract 2

Acknowledgements 6

Author's declaration 6

1. Natural history film-making: a culture of knowledge-production 7

Rethinking natural history film-making as a culture of knowledge-production in public 9

Natural history, a visual culture of knowledge-production 18

Establishing a distance between the observed and the observer 19

Natural history and the development of its institutions 21

Establishing the place of knowledge-production 25

Natural history as popular knowledge 26

Natural history films, today's embodiment of natural history 30

A genre at the confluence of several practices 30

Natural history film-making and biological film-making, convergent pursuits 39

Conclusion 42

2. In the light of ethnography, natural history films as social artefacts 45

The ethnographic present: values and beliefs of the culture of natural history film-making 49

The visual anthropological approach. Audio-visual artefacts and the identity fashioning process 54

Identity fashioning and love of animals 56

Performances of knowledge in the identity fashioning process 62

Conclusion 66

3. From Kearton to Attenborough - Fashioning the natural history film-maker's identity as a knowledge-producer 68

Natural history photography: self-restraint in the public interest 69

Bourgeois filming on elite hunting grounds, democratising the access to exotic nature 74

Natural history films as true records of nature 78

Self-sacrifice for the common good 78
Collecting and displaying specimens 79
Becoming intimate with nature 81
Walking in Kearton's footsteps **86**
Fashioning Attenborough as a Keartonian figure **91**
Displacing scientific authority - The education of a television naturalist 93
Establishing natural history film-making as a culture of knowledge-production 94
Conclusion **100**

4. The BBC Natural History Unit, a knowledge-production institution **102**
Witnessing nature on television—Naturalists on screen **104**
Staging the genteel conversation as a way of knowing 105
Fashioning television as a technology of public witnessing 109
The 1960s: setting the boundaries of natural history film-making **113**
Adopting 'a more adult semi-scientific' tone 114
Bristol Natural History v. Pop. Nat. Hist. 115
Seeing is Knowing **118**
Exhibiting 'visible scientists' in Life 118
Bringing the film medium to the fore with The World About Us 120
Trusting the natural history film-maker 121
The field scientist as an 'invisible technician' 122
Filming nature and making discoveries 124
Natural history film-making, producing genuine knowledge 124
Rehearsing the performance 127
Concealment and exposure – Performing the production of knowledge 128
Unveiling nature's secrets 130
Conclusion **133**

5. Experts in the wild. Displaying intimacy with nature **136**
***Big Cat Week* – A Natural History Series** **137**
The telenaturalist: signifying intimacy and asserting expertise **142**
Building a narrative 142
At home in the Maasai Mara: showing intimacy with the place 145
Knowing the animals 146
Human artefacts in 'a Pleistocene vision' 149
Telling stories with science **155**
Speaking on behalf of the animals **162**

Conclusion **169**

6. Experts in the wild. Showing nature from within **172**

Making the viewer intimate with animals as a means for the film-maker of appearing trustworthy **174**

Defining the animals as performers *174*

Producing knowledge through the 'dance of relating' *176*

Building the collective: formal means *179*

Listening to what animals have to say 179

Looking from within nature 181

Fashioning the film-maker's identity: free action, artifice, and fact building **184**

Natural history film-making and gentility *185*

Building bridges with animals and keeping them natural *190*

Mixing tame and wild: training to represent the wild 190

Training animals as a means of acquiring knowledge of the natural world 191

Parading scientists to support claims to trustworthiness 196

Reassessing the role of institutions in natural history film-making *203*

Conclusion **205**

7. Conclusion. Natural history film-making, an intimacy-based authority to speak for nature **207**

Natural history film-making as a public understanding of science *208*

The animals as ethnographic others in natural history films *209*

Natural history film-making, co-existing with science *210*

Natural history film-makers as spokespersons for nature *212*

Defining the telenaturalist *215*

Looking ahead *219*

8. References **224**

Acknowledgements

The research whose results are presented in this thesis was financed by a three year full-time studentship from the University of York. I wish to thank the Department of Sociology at the University of York, especially Amanda Rees, who inspired me to study natural history film-making and supervised my work, Nik Brown and Robin Wooffitt, who advised me throughout the process. This thesis' title is indebted to Robin Wooffitt.

I would like to extend my thanks to Gregory Radick and Andrew Webster for their useful and friendly comments on this dissertation; to the participants of the Ischia Summer School on the History of the Life Sciences (2007), in particular Gregg Mitman; to the members of Cleveland Naturalists as well as the staff and graduate students of the Department of Biology and of the Department of Environmental Sciences at the University of York, for instructive conversations on natural history films.

Last, but not least, my utmost gratitude goes to Céline.

Author's declaration

Various versions of Chapter Five, 'Experts in the Wild. The merits of Intimacy', have been presented on several occasions. At the Brown Bag Seminar organised by the Science And Technology Studies Unit of the Department of Sociology at the University of York (2007); at the Conference Science and the Public organised by the Centre for the History of Science, Technology, and Medicine, at the University of Manchester (2008); at the conference Film and History 2008, in Chicago; at the workshop 'Animal Cultures – Human Natures' at the Max Planck Institute for the History of Science in Berlin (2008).

Chapter 1

Natural history film-making: a culture of knowledge-production

'[K]nowledge for the sociologist is
whatever people take to be knowledge'
(David Bloor, 1991:5)

With natural history film-making we would find ourselves in the presence of 'mixtures of experiences and beliefs' (Bloor, 1991:15) potentially emulating those encapsulated in the practices of life sciences. Reflecting on Disney's *True-Life Adventures,* Gregg Mitman notes:

> 'In this nature of popular culture, a distinct popular science of natural history emerged, one that needs to be considered in its own right and not as a vulgarized form of professional science.' (Mitman, 2000:423)

A study of natural history film-making thus points towards considering the way it relates to professional sciences. Natural history film-making obeys conventions supposedly alien to the culture and practices of scientific practitioners, both because the artefacts it produces are films (Mitman, 1999; Bousé, 2000) and because it is informed by natural history. Although professional life sciences emerged from it, natural history, after having been pushed 'to the margins of science' (Secord, 1996:449), retained and nurtured its original character of an overwhelmingly visual culture of knowledge-production, requiring 'no specialized knowledge in order to participate' (Findlen, 1996:60). Natural history films can be conceived as today's natural history culture's most pervasive material artefacts (Jeffries, 2003). Natural history film-making can be seen as a culture of knowledge-production maintaining an ambiguous relationship to the scientific enterprise. In this thesis we will investigate the ways in which the authority to speak for nature, commonly considered to be the preserve of scientific practitioners, is asserted in natural history film-making.

Natural history film-making produces artefacts reaching a vast public. Since its release in 1979 the famous series *Life on Earth* has been watched by more than 500 million people worldwide. And in Britain alone, the 2006 series *Planet Earth* gathered 12 million viewers. The enduring popularity of these films is commonly regarded as a consequence of an estrangement from nature characteristic of modernity (Bousé, 2000), as well as a factor reinforcing this estrangement (Mitman, 1999). They are considered to partake in the image of nature many Westerners form.

The films' massive following, and their role as an interface between humans and the natural world, make natural history film-making worth investigating for the sociologist. So far they have been approached as a genre (Bousé, 2000). Their contribution to the fashioning of the position of animals in society has been analysed, as well as the notion that their history mirrors the changes in humans' relationship to animals (Burt, 2002). They have been pointed out as instances of the appeal to "nature" as a means of legitimating dominant cultural values and the current social order (Haraway, 1989; Crowther, 1997; Mitman, 1999). They have been considered as attempts to convey scientific knowledge, and examined as part of the history of animal sciences (Mitman, 1999; 2006).

As these various approaches suggest, natural history films stand at the confluence of many realms. They aim at educating "the public", whilst being entertaining. They display the flag of science, whilst claiming to fall under the tradition of natural history that scientific practitioners abandoned some time ago. They seem to foster the modern conception that nature is separated from the human world and is to be observed with detachment, whilst never ceasing to redefine this separation, for example when they offer an anthropomorphic presentation of non-human animals as individuals endowed with a personal history, longings, short and long term objectives.

The focus of this thesis, the issue of the authority to speak for nature and how it is achieved in natural history film-making, raises several questions: Is this authority a matter of identity of the film-maker? Is it a matter of technological and performative skills? Is it a matter of approach to the natural world? Examining how the authority to speak for nature is achieved through a practice inscribed in the context of popular culture, supposedly separated from science,

will necessarily lead us to reassess the commonly held belief that it rests in the hands of one specific social group, scientific practitioners. We will therefore first review the literature on the sociology of knowledge and popular science. This will specifically draw our attention to the links between social identity and knowledge-production. We will then turn to the literature on the history of natural history which illustrates the arbitrariness of ascribing to scientific practitioners alone the authority to speak for nature, and the fact that it is the result of social negotiations historically situated. Its review will allow us to realise that the categories which render natural history films so problematic, in particular concerning the distinction between science and non-science, are far from being set once and for all. This literature emphasises the notion that the approach to nature considered appropriate as a means of producing knowledge of it has varied throughout history, as have the methods deemed relevant for its investigation and the social identities associated with this pursuit. One aspect of the history of natural history which appears of particular significance is the formation of public institutions centred on the knowledge of the natural world, museums of natural history and zoological gardens, dedicated to the rational entertainment of the urban populations of the 19thC, and instrumental in the formation of the popular pursuit of natural history. Natural history film-making is today's embodiment of this culture, we will close the chapter on a review of the literature on natural history films, emphasising the complexity of their relationship to the knowledge produced by practitioners in the life sciences. In what follows, natural history films will be defined as objects of knowledge, as artefacts of a culture of knowledge-production which appropriates the work of scientific practitioners yet remains distinct from the scientific enterprise.

Rethinking natural history film-making as a culture of knowledge-production in public

Two recent articles (Dingwall and Aldridge, 2006; Jeffries, 2003) focus on the idea that natural history films mis-represent animals and nature, hence the work of one particular social group producing knowledge of them, life scientists. Michael Jeffries (2003) states that they represent an 'impoverished view of the natural world' (p.532) from which life scientists should 'rescue natural history

television'(p.544) thus opening new possibilities 'to share the provisional and contested nature of science' (*Ibid.*). Such argument appears to draw on pre-set answers to the questions of who is entitled to engage with nature, what counts as knowledge of the natural world, and what are the most appropriate means of acquiring this knowledge. Although natural history films can be, and certainly should be, critically examined, it seems that our analysis would be weakened if we were to engage in the exercise on inappropriate bases, for this would result in an impoverished understanding of the social dimension of the objects we are faced with. Furthermore, this would leave unquestioned the very assumption on which this dismissal of natural history films is based.

The notion that scientific knowledge would be the ultimate achievement of human rationality has been firmly established by the influential work of theorists such as Karl Popper. Popper describes the scientific endeavour as cumulative, tending to the universal, and progressing through the systematic application of the hypothetico-deductive method to observations of the natural world. Science progresses from theories with a low level of universality to theories with a high level of universality. The enterprise aims, ultimately, at the theory of everything. The scientists' work consists mainly in the unveiling of untemporal, ahistorical truths, hidden in nature, which will serve to refine existing theories (Popper, 2002) [1]. The so-called Popperian view of science

---

[1] In the Popperian perspective, the discovery of new facts is essential to the progress of science because these new facts are tests for the existing theories. The more a theory resists to these tests the more it can be considered to be true. But this does not mean that there will never be a discovery proving the theory to be false. An authentic scientific theory is a theory which is potentially falsifiable: 'a theory which has been well corroborated can only be superseded by one of a higher level of universality; that is, by a theory which is better testable and which, in addition, *contains* the old, well corroborated theory—or at least a good approximation to it' (Popper, 2002, p.276 – original emphasis).

Falsifiability rests upon what Lorraine Daston and Peter Galison call 'mechanical objectivity' (Daston & Galison, 1992). It is described as a form of objectivity historically grounded in the mid-nineteenth century, whose emblem was photography, and which '[strove] to eliminate all forms of human intervention in the observation of nature. … [it battled] the general, all-too-human tendencies to aestheticise, anthropomorphise, judge, interpret, or in other way "tamper" with the given of nature' (Daston, 1995, p.19-20). In order to be valid, in the Popperian view, scientific observations and deductions require self-control and detachment and must remain in the framework delimited by theory. (As underscored by Daston, the rhetoric associated with mechanical objectivity echoes the self-restraint preached by Christian asceticism.). Susan L. Star makes a related point when she notes (1992, p.275) that '[i]n some ways modern science can be seen as the push to erase individual, craft skill from the scientific

makes "truth" the ultimate—yet unattainable—goal of the scientific endeavour. It can only be approached through the rigorous application of the rules of the scientific method—hypothesis-test-verification/falsification—which are the guarantee that the observations are free from the influence of any extra-theoretical factors—judgement, imagination, emotion—and that deductions are untainted by any personal interference. This setting aside of the individual subject ensures that observations are reproducible, for the suppression of subjectivity renders observers interchangeable. Anonymity and the collective character of the scientific enterprise are thus instituted (Daston & Galison, 1992; Daston, 1995).

Criticisms of natural history films as those mentioned above can thus be seen as expressions of the unquestioned belief that nature is what scientific practitioners say it is, that scientific practitioners are the only genuine spokespersons for nature. The sociology of science edified by Robert K. Merton rests on such basis, and postulates that science is a pursuit autonomous from society, whose analysis is better left to epistemology and the history of science, leaving aside the actual contents of scientific knowledge which, not being a social production, is not affected by social factors. The Mertonian sociology of science is therefore the investigation of a social system apart from the rest of society (Restivo, 1995), protected from the surrounding social totality by its own norms: communism, universalism, disinterestedness, and organised scepticism (Merton, 1942, 1973). The sociologist of science thus studies the social structures and institutions producing this knowledge, the material means devoted to the production and the transmission of knowledge, and the norms organising this activity (Merton, 1937). It is the sociology of a microcosm peopled by the researchers and made of the institutions where they work. When such sociology of science bears on the relationship between the production of scientific knowledge and society, it is in the hope of explaining scientific errors, for it is assumed that if and when society meddles with the process of production of scientific knowledge, error and falsity automatically

---

workplace, to ensure that no idiosyncratic local, tacit, or personal knowledge leaks into the product. […] Research findings that are purely personal or irreplicable are just not science'.

follow. The very principle that scientific knowledge would be the most reliable form of knowledge leads almost inevitably to the presumption that the only acceptable, in the sense of valid, form of knowledge outside the scientific community has to be simplified scientific knowledge. But at the same time, the notion that the production and actual contents of genuine scientific knowledge are immune from social influences renders the status of simplified scientific knowledge problematic.

The Popperian view of science thus legitimises a particular version of popularised science: one whose main function is to educate and which is considered "less true" than its "genuine" counterpart, for being a simpler version of "real" science, produced specially for the uneducated public, it lacks its complexity and nuances. Such conception of the popularisation of science is formalised in the Public Understanding of Science (PUS) movement at the core of which lies the notion of "scientific literacy" (e.g.: Miller, 1993). As demonstrated by questionnaires used in surveys to evaluate scientific literacy, it is measured by the percentages of people describing the "scientific method" in Popperian terms and able to give correct answers about established facts such as whether the Earth is revolving around the sun or the reverse (e.g.: Durant et al. 1989; 1992).

Consistently low levels of scientific literacy amongst the general population indicated by successive surveys have given rise to the central concept of this Popperian model of popularisation: the deficit model of PUS, which compares the lay mind to an empty teapot in which to pour scientific knowledge (Gregory & Miller, 1998). As compared to the disinterested and communal work of professional scientists (Gregory & Miller, 1998), popularisation of science is considered a dangerous use of scientific knowledge, potentially damaging to science, and must therefore remain a low status activity, whose main function is to diffuse a faithful and positive image of scientists and their work amongst the public. As a corollary, a good populariser is someone able to do appropriate simplification—or translation. He or she, at best a retired scientist—fluent in the original language—is appointed and endorsed by the scientific community and speaks for science and for the scientific community. A bad populariser is someone who produces a travesty of scientific knowledge

in order to entertain, or, worse, to gain personal prestige (Gregory & Miller, 1998). In this view, the circulation of knowledge outside the scientific sphere is acceptable only insofar as it serves to educate the lay public about the progresses achieved by scientific practitioners in the knowledge of the natural world and about the reliability of the method employed.[2]

Works regrouped under the label sociology of scientific knowledge (SSK), have however come to challenge the widespread equation of science with truth, and the notion that, as a culture of knowledge-production, science is apart from society, from the social and historical context in which it occurs. The works, amongst others, of David Bloor allow us to consider the production of scientific knowledge and its understanding as social facts and therefore enable to study the social and political uses of knowledge as well as the social negotiations around what is to count as knowledge.

Bloor demonstrates that 'theories of knowledge are [...] reflection of social ideologies' (1991:75), and suggests that the Popperian theory is one of the powerful agents which isolates science from society and renders its 'very content and nature' immune from the investigation of sociologists. A major achievement of the sociology of scientific knowledge has been its demonstration that, regardless of its claims to truth or objectivity, the production of scientific knowledge can indeed be studied as a cultural and social practice. '[K]nowledge for the sociologist is whatever people take to be knowledge' (Bloor, 1991:5). Such realisation has led to the formulation of the so-called 'symmetry postulate':

> 'Both true and false, and rational and irrational ideas, in as far as they are collectively held, should all equally be the object of sociological curiosity, and should all be explained by reference to the same kinds of

---

[2] This model of popularisation can be historically rooted in a European socialist movement and in an American capitalist one, both from the 1930s (Gregory & Miller, 1998). The former was motivated by the desire to enlighten and empower working men and women by providing them with digested scientific knowledge. The latter aimed at educating people as consumers and helping them living 'happier, longer, more productive lives in the work place and at home' (p.34). Both had as an objective the fostering of democracy as well as the development of people's freedom in the conduct of their life.

> cause. In all cases the analyst must identify the local, contingent, causes of belief.' (Bloor, 1999:84)

As underlined by Jan Golinski, this symmetry postulate 'is a [methodological] way of screening out the issues of epistemic validity that hinder the understanding of knowledge in its social dimension' (1998:7). In this perspective, science is denied the special or transcendent character which confines the sociology of knowledge to the Mertonian study of the scientific institutions and to the sociology of "the scientific community" (Restivo, 1995).[3]

Far from necessarily bringing about nihilism and generalised scepticism, releasing science from its 'sacred aura' and its 'mystery' is the surest means of reasserting the 'indissoluble union of society and knowledge' (Bloor, 1991:83). And most importantly for us this symmetry postulate also encourages us to recognise forms of knowledge which are not produced within the scientific community as relevant social facts because they have a social effect. This leads us in particular to acknowledging that people who are not scientists, and do not claim to be, can nonetheless stand publicly as legitimate spokespersons for nature, and to try to understand what mechanisms and beliefs are involved in their legitimisation. Adopting this approach, 'the sociologist will be concerned with beliefs which are taken for granted or institutionalised, or invested with authority by groups of people' (Bloor, 1991:5).

The recognition of the conclusion fostered by the constructivist approach that the production of knowledge is a social fact involved in debates and negotiations from which politics are not absent, has encouraged several scholars, in the past two decades, to produce a stringent critique of the model of popularisation derived from the Popperian view of science, that is that only appropriately simplified scientific knowledge can be, and should be,

---

[3] Popper and Kuhn both naturalise the idea that scientists form a community. As noted by Bloor, '[t]he theme of "community" is a pervasive one, with its overtones of social solidarity, of a settled way of life with its own style, habits and routine' (1991:59). Implicit in the notion of a "scientific community" is the idea that scientists form a highly specialised elite group, 'who produces "truth" in esoteric ways' (Whitley, 1985:6). As will appear in the following chapters, the use of this notion of community, as a rhetorical tool in public discourse, is not absent from natural history film-makers strategies of cognitive legitimisation.

communicated to the public, and to reassess its status and function. The first conclusion to ensue from this re-examination is that expositions of knowledge occurs along a continuum, it is therefore not possible to draw a clear distinction between "genuine" scientific knowledge and "simplified" public knowledge (Cloître and Shinn, 1985). There is only knowledge, and what varies is the context of its communication (Lewenstein, 1995).[4]

Contrary to what proponents of the traditional model of popularisation postulate, Stephen Hilgartner (1990) demonstrates that there is no clear demarcation between "appropriate" simplification and distortion. Declaring that some expositions of knowledge are distortions appears as a means of discrediting rivals in controversies. It allows experts to protect their authority and to control the use of expertise. However, communication of knowledge to the public through popular media cannot be considered as "less true" than communication in a specialised journal. A critical examination of this top-down conception of popularisation, which makes knowledge the preserve of scientists and establishes the scientific approach to the natural world as 'the epistemic gold standard' (Hilgartner, 1990:520), shows that instances of the use of 'the cultural Symbol 'Science''(*Ibid.*) which focus the debate on the Popperian notions of accuracy and truth, can be recognised as uses of science as a resource for authority in public discourse and for discrediting, when needed, 'publicly available representations' (*Ibid.*). The dominant model of popularisation, by the control it grants to scientific practitioners over the communication of knowledge to the public, functions as an attempt to protect

---

[4] Elisabeth Clemens shows in particular that persuasion plays as important a role in the communication of knowledge to the public as in inter- or intra-specialists communication and therefore that the "public understanding of science" is as much about convincing the audience as it is about educating them. In her paper investigating the reception of the 'Alvarez hypothesis', which postulates that dinosaurs got extinct because of the impact of an asteroid, she suggests that the success of the 'impact hypothesis' pleads in favour of the contention that 'in science, fellow specialists, other scientists and the general public form different but overlapping audiences with different, but related understanding of the appropriate styles and important problems for scientific debate. The ability to meet these expectations and interests is one factor influencing the reception given to specific arguments' (1986:448). Claims to knowledge-production implicate strategies of persuasion which can be recognised as identical whether the claimants are scientific practitioners or not.

the cognitive authority of scientific expertise, in what Thomas Gieryn has identified as 'boundary work' (1983; 1995).

Stating that every form of communication is a form of production of knowledge (Secord, 2004; Zehr, 2000; Whitley, 1985), and that knowledge becomes legitimated as scientific when it is discussed between scientific practitioners (Latour and Woolgar, 1979/1986; Bloor, 1991), the SSK approach to the public uptake of knowledge proposes to investigate how people negotiate with the authority vested in science in their everyday life, that is how non-scientific holders of knowledge position themselves and their knowledge with regard to the cognitive authority implicitly vested in scientific knowledge (Irwin and Wynne, 1996). This perspective also allows to examine the negotiation of the relationship between policy-makers and scientific experts, or how certainty and uncertainty related to scientific issues are managed in public discourse (Collins and Pinch, 1993).

> 'The common starting-point is not individuals' lack of knowledge about scientific 'facts', or processes, but how people reflect on the status of their own knowledge and situate themselves *vis à vis* science and *vis à vis* others in relation to science' (McKechnie, 1996:129)

This sociological approach to the public understanding of knowledge proposes to decentre science (McKechnie, 1996), to displace the focus, from the various strategies implemented by scientific practitioners defending themselves against attacks coming from society to the 'boundary work' (Gieryn, 1983) exercised by non-scientists in order to defend their identity from the cognitive hegemony of science. This does not mean that it considers that the actors under scrutiny do not make use of scientific knowledge, on the contrary (Yearley, 1996). What is examined is precisely the way they integrate this particular brand of knowledge to their own claims to knowledge, so that they remain theirs and do not become those of scientific practitioners. That is the efforts these actors put in maintaining their social identity as it is embodied in their capacity to make claims to knowledge. Such 'fact builders'(Latour, 1987) can be Cumbria sheep-farmers (Wynne, 1996); as we will see in the coming chapters, they can also be natural history film-makers.

Inspired by the propositions made by the constructivist approach that beliefs in the moral authority of scientific practitioners and the image of nature they draw are contingent, and the result of negotiations amongst social actors, works in the history of science have shown that scientific practitioners themselves, as knowledge-producers, could be seen 'as self-fashioned individuals who creatively manipulate the resources offered by their cultural setting to form their own personae'(Golinski, 1998:66).[5] Such interrogations on the role of individual conducts in the process of identity fashioning of authoritative spokespersons for nature has led to reassess the role attributed to institutions and the communal norms ruling their functioning. From unproblematic resources, institutions have been recognised as 'rhetorical weapons [...] adaptable to many different purposes' (Golinski, 1998:55).

A similar focus on the conditions of the production of scientific knowledge and on their socially and culturally mediated quality has led feminist scholars to reappraise the beliefs associated with the manner in which knowledge of the natural world is produced. By demonstrating for example that values present in the day-to-day practice of scientific practitioners such as the exclusion of emotions from official accounts of science 'by virtue of being labeled "feminine"' (Keller, 1995:82), but that emotion s nonetheless play a siginficant role in scientists' practices, they underscore the plurality of conducts in the production of knowledge. The works in the history of science together with what has been labelled 'a feminist epistemology' (Jaggar, 1989) have in turn contributed to dispel the notion that because of a unique method they would use, coupled with a specific conduct they would adopt, scientific practitioners would form a group unified in their privileged access to knowledge of the natural world. Every knowledge-production activity is situated, and bound to the context of its occurrence (Haraway, 1997).

Ceasing to postulate a clear separation between "scientific" and "simplified" forms of knowledge, the sociological approach allows to pay attention to the

---

[5] On various instances of identity fashioning by scientific practitioners see amongst others Mario Biagioli's *Galileo, Courtier* (1993), Steven Shapin's *Social History of Truth* (1994), Iwan Morus' *Frankenstein's Children* (1998).

intrinsic characteristics of the culture of knowledge-production, the setting, or the medium under scrutiny. It leads us to recognising that instances of the public exposition of knowledge can integrate some of the knowledge produced by scientific practitioners, and at the same time represent 'mixtures of experiences and beliefs' (Bloor, 1991:15) whose participants actively maintain their autonomy from science. Dorothy Nelkin (1995) has, for example, demonstrated how fruitful a study of science journalism, highlighting the tight interweaving of science with journalistic values and codes of practices, could prove to understand the press coverage of scientific and technological issues.

Seen in the light of the inherently social nature of knowledge-production, and of the importance of the processes of identity fashioning in supporting claims to authority to speak for the natural world, criticising natural history films as vehicles for knowledge on the ground that they would be an inaccurate representation of the natural world and of the work of scientific practitioners, seems to bring evidence of a conflict over the control of the production of knowledge of the natural world, its use and the ends it serves, crystallised around the artefacts natural history films. Following the approach encouraged by SSK, these criticisms invite us to investigate the culture producing these films, in order to understand how it is positioned with relation to the scientific exploration of the natural world. The culture of natural history film-making being informed by natural history, we will examine in the next section of this chapter how it has passed from a position of dominance in the scientific sphere to its margins (Secord, 1996). The transition extended over some time, and the examination of this process will allow to witness the formation of a culture of knowledge-production actively differentiated by its beholders from academic or institutional science, at a time when the divide between amateur and professional scientists was being set.

Natural history, a visual culture of knowledge-production

Natural historical knowledge participates in various historically rooted practices (Jardine & al, 1996); some are material, they are related to the gathering and/or the fabrication and the display of objects bearing knowledge

of the natural world—collectable specimens and/or visual representations; others are social, and refer to the notion of the division of labour, the negotiation of trust and authority, and the setting up of networks through the circulation of material objects. At the confluence of all these practices stands the image; the culture of natural history is, overwhelmingly, a visual one (Bleichmar, 2003).

Establishing a distance between the observed and the observer

The visual culture of natural history emerged from the fruitful association of an urban elite devoted to nascent capitalism with students of nature whose appetite for knowledge was great, and finally with artists, who could exert their skills on new objects (Smith, 2006). Accompanying the rise of natural history as an observation-based practice in the early modern period, images became valid means of investigating nature and of making claims to knowledge of it (Long, 2002). It allowed a rupture with the 'ancient, and medieval reluctance to use visual images to demonstrate claims about the natural world' (Kaufmann, 2002:417).

The visual representations produced by natural history played a crucial role in the Western imperialistic project (e.g.: Findlen, 1994; Browne, 1996; MacLeod, 2000; Smith & Findlen, 2002; Bleichmar, 2003; 2006). Patrons of exploratory expeditions needed to know what natural resources their conquests would allow them to exploit,[6] and the transportability of images proved a particularly useful characteristic in this context (Latour, 1987), for 'illustrations […] place more clearly before the eyes what the text no matter how explicitly, describes' (Long, 2002:77). This was 'a complete circle of causation' (Tudor, 1974), natural history prospered owing to the European colonial expansionism and in turn helped the expansion of empires. As we will see, this association between converging interests has remained encapsulated in natural history and the visual representations it has produced, for as noted by Paula Findlen,

---

[6] Besides, natural history, as a form of—disinterested—scientific inquiry about the natural world, provided sovereigns with a ready pretext. They could send people to foreign countries "in the interest of science" (Findlen, 1996).

'[w]hile the social world in which natural history first emerged did not last, certain practices associated with it continued' (1996:73).

Along with the visual culture of natural history developed the practices of collecting, and, more significantly, of displaying. It was first, and until the 18thC, embodied in the cabinet of curiosity, through which members of the European nobility asserted their social standing and 'subsumed nature within the category of wonder' (Findlen, 1996:67).[7] Meadow (2002) stresses the extent to which the notion of travel is co-extensive to that of cabinet of curiosity and that the former was 'the alpha and omega of collecting' (Daston, 1988, in Meadow, 2002:184). Each of the items exhibited was the representative of the remote and extraordinary place it came from, as much as a testimony of the circumstances of its collecting and of the dangers the collector had been confronted with. Watching the collection of objects assembled in a cabinet of curiosity was therefore like 'a microcosmic form of travel' (Meadow, 2002:184), a way to share in the collector's adventures.[8]

According to seventeenth and eighteenth-century theories of perception, forming a complete mental representation of the external world requested all the senses. The visitor to such a cabinet was therefore able to touch and handle the objects. 'Physically handling objects was seen as necessary for understanding them' (Noordegraaf, 2003:5). But at the end of the 18thC, occurred what might be designated as a visual, or "spectacular" revolution, which upheaved the conception of the relationship between the observer and the observed. New researches on the physiology of perception established that the essential site for visual perception was the brain, to which the eye relayed the visual stimulus. Vision became subjective, and the concept of "optical

---

[7] For detailed studies of the cabinets of curiosity see for instance Paula Findlen's *Possessing nature* (Findlen, 1994), and Katharine Park and Lorraine Daston's *Wonders and the order of nature – 1150-1750* (Daston & Park, 2001)

[8] A parallel could be drawn here with the public lectures given by big game hunters to the British public from the 1870s on. As Ritvo emphasises, '[t]o present an effective symbol of the hunter's heroic appropriation, a trophy needed to evoke the aspect of the animal that had provoked and justified the killing' (1987:253). The presentation of the trophy was thus partly intended to convey to the audience aspects of the experience of the hunter. As will be discussed in the next Chapter, natural history films can be analysed as records of the act of knowledge-production of the natural history film-maker

truth" was formed (Crary, 1988, 1990) [9]. Sight thus enabled to extract entirely the knowledge encapsulated in things. An illustration of this change was the transformation of the organisation of public exhibitions in science museums. Whereas in the 18thC, visitors could touch the objects, from the 19thC on, objects exhibited in science museums became enclosed in boxes, behind glasses, at a safe distance. The visual revolution therefore instituted a natural distance between the observer and the observed (Noordegraaf, 2003).

Natural history and the development of its institutions

Natural history developed as a popular pursuit favoured by three concurring factors: the professionalisation of the life sciences, the emergence of urban middle classes, and the associated development of a culture of leisure and consumption. To make a long story short, the 19thC witnessed the professionalisation of life sciences, driven by the rise of experimental sciences such as physiology (Canguilhem, 1989). This movement resulted in the "fragmentation" of natural history into a set of new disciplines which, in the preceding centuries, being part of the general practice of the naturalist, had been undiscriminated—geology, zoology, botany, ornithology, embryology, anatomy, physiology, etc.—(Coleman, 1977; Nyhart, 1996, see also Allen, 1994). One consequence of this development was that the naturalists' two main pursuits, identification and classification, became central interests of the newly formed community of zoologists. In reaction, naturalists abandoned them and turned, in the words of British entomologist Edward B. Poulton, to 'the closest study to watching living animals amid their natural surroundings', and started

---

[9] A material outcome of this change in the way visual perception was conceived is the sparkling rhythm of invention of new optical devices designed to produce optical illusions. At the time of their production, these artefacts were as popular amongst the public—as scientific toys—as they were amongst physiologists investigating the anatomical substratum of vision—as instruments for experimentation. To these physiologists, there was no such thing as optical deception, 'whatever the healthy corporal eye experienced was in fact *optical truth*' (Crary, 1988:9 – my emphasis). An effect of this renewed approach to sight was that the act of perceiving visually was now severed from the other sensory perceptions, in particular the sense of touch considered in the classical period as its companion sense in acquiring knowledge of natural objects (Findlen, 1996). From then on, seeing became detached from any reference to spatial location. Optical stimuli sufficed to induce the sensation of being elsewhere. Crary points towards this 'autonomisation of sight' as the historical origin of the regime of 'spectacular consumption' characteristic of the visual culture of modernity (Crary, 1990:19).

valuing 'a fresh observation more than a beautiful dissection of a rare specimen' (Burkhardt, 2005:78). In other words, naturalists began to study living animals' behaviour, making observation the cornerstone of their practice.

As Roy Porter noted about the emergence of the geological career: 'Nineteenth-century naturalists came to conceive geological careers as vocations, and became a self-sustaining, self-validating knowledge elite, guardians of expertise in their field of intellectual endeavour' (Porter, 1978:810). A stern rupture between specialists and amateurs ensued, to such an extent that direct communication between them became difficult: 'those trained in the new disciplines largely refused to associate with amateurs, and the amateurs themselves, even when prepared to listen, generally failed to understand' (Allen, 1994:173). The professionalisation of life sciences therefore led to the establishment of institutions adorned with the phrase natural history and which could mediate between a self-proclaimed community of professional scientists and their non-specialist publics. Natural history was thus turned into a form of rational entertainment for the new middle classes and was embodied in museums, zoos, and publications aimed specifically at this new public (Secord, 1996; Drouin and Bensaude-Vincent, 1996).

Natural history museums, as public institutions set up in the 19thC by the newly formed scientific community which had emerged from natural history to expose the result of its work to the lay public, rooted in the newly established visual regime. As Donna Haraway emphasises, 'The Museum is a visual technology' (1989:54). In her study of the dioramas—these groups of stuffed animals, staged in front of a painted background representing their habitat, enclosed in glass boxes—she underscores that all the "reading" of the story told in a habitat group depends on the eye of the visitor; 'the eye is the critical organ' (1989:29). Not only because the glass barrier around the habitat group prevents any physical interaction with the stuffed animals, allowing only the gaze to penetrate, but because in each group there is 'at least one animal that catches the viewer's gaze' (p.30). This "exchange" of gazes between the visitor and the dead stuffed animal somehow naturalises the scene staged in the diorama, makes it ahistorically true—truer than true, ideally typical—and thus

participates in the realism effect intended by the taxidermist. The scene represented becomes nature's true type. Haraway outlines the fact that the American museum of natural history in general, and its dioramas in particular, served the interests of the elitist sportsmen who financed them. Dioramas as 'meaning-machines' (p.54) contributed to diffuse a social Darwinist 'vision of social peace and progress despite the appearance of class war and decadence' (*Ibid.*). In the European context, where natural history museums were publicly funded institutions, 'intimately connected to the fates of national politics' (Haraway, 1989:56), these dioramas have been analysed as instruments of 'nationalistic education' and of 'colonialist politics' (Wonders, 2003:98). Another public institution developed along the lines provided by the 19thC visual regime, the zoological garden. Like museums of natural history, zoos were motivated by the project of conveying to the public the achievements of a new form of inquiry, the scientific investigation of the natural world.

Zoos developed at a time when the nascent community of professional life scientists needed new resources for scientific work and wished to convince the public of the value of new theoretical explanations (Kohlstedt, 1996). One of these explanations was taxonomy and the London zoo was an attempt to represent it.[10] When it opened its gates in 1828, the collection was arranged so as to 'furnish every possible link in the grand procession of organised life' (Ritvo, 1996:46). As of 1840, animals were ordered according to taxonomic grouping, which had never been done before anywhere else (Hancocks, 2001:45). The Linnean organisation of the zoos' collection has been analysed as a means of asserting the superiority of zoology over mundane knowledge (Veltre, 1996). Besides, being caged, the animals could not escape their assigned position in the classification, neither could visitors reorganise them as they wished, they had to accept this ordering obtained through the hidden work of the dissection room. Taxonomists might be said to have taken control of the "adamic" capacity of humans (Ritvo, 1996). Though, in a kind of paradox,

---

[10] The London Zoological garden first opened as a place whose access was restricted to members of the London Zoological Society. Initially it was not intended to educate the public at large. Then the administration of the zoo opened to paying visitors in a successful attempt to save the zoo from bankruptcy (Ritvo, 1987).

what the visitors could see of the animals was precisely what had been discarded by taxonomists when classifying them: the external appearance. The validity of the knowledge thus presented was unverifiable by the laity who had to trust the scientific community. The nineteenth-century London zoo is an example of the assertiveness, the indisputable certainty, and the 'presentation of science as a knowledge-producing activity', all characteristics of popularised science described by Harry Collins (Collins, 1987). As an urban institution where exotic animals were collected to be studied and seen, the London zoo may have been a place designed to contain and control animals, a place expressing dominion over nature, but it was also a place where power was exerted over people by wielding the accessible knowledge and using it to diffuse a particular vision of the natural world, here a non-holistic one, according to which knowledge of the natural world could be obtained through the ordering of its components, removed from their environment. Through the example of London, zoos can thus be seen as conforming to the dominant model of popularisation as described by Stephen Hilgartner, since they assert the cognitive authority of science and turn the rational apprehension of the world into the preserve of the scientific community (Hilgartner, 1990).[11]

---

[11] The example the French national menagerie of the museum of natural history in Paris designed to be a space of 'moral uplift and civic regeneration by contact with the ordered display of nature' (Outram, 1996:258) further demonstrates that public institutions for the popularisation of science have been a means of asserting the boundary between the public and the scientific community. In particular, the coupling of the outdoor menagerie with the indoor museum, to which must be added the hidden network of dissection rooms, studies and cabinets where experts exerted their skills, illustrates the nineteenth-century scientists' tendency to consider field observations as the popular part of knowledge-production, and the field as a place devoted to amateurism. In this view, the menagerie was a place for public understanding of science where the popular image of life sciences as a field based activity was perpetuated, whilst scientists developed, away from the public gaze, new practices and a new epistemology. The context of the establishment of the menagerie also tells a special story. The menagerie was indeed instituted as a national property during the French revolution, whose founding act was the abolition of privileges (4th of August,1789). Scientists had therefore to practice science "publicly" and were not supposed to distance themselves from the egalitarian and fraternal nation who owned the place. In the revolution rhetoric, science was made for the people by the people. Science was not supposed to be the preserve of aristocracy. The treatment of the menagerie by scientists can be seen as the construction of a kind of diverting device between them and the public. (For more on the subject see Outram, 1996; Burkhardt, 1999; Osborne, 1996)

Establishing the place of knowledge-production

The establishment of institutions of popularisation of science aimed at public education such as the museum of natural history and the zoological garden was accompanied by a redefinition of the place where the study of the natural world could be scientifically conducted. Typical, and significant of this debate, is the act of demarcation aiming at the exclusion of fieldwork from the realm of appropriate scientific practice and of fieldworkers from the community of professional scientists, which was performed in 1807 by anatomist Georges Cuvier (Outram, 1996).[12] According to Cuvier, only in the *study* could the naturalist transmute natural objects into objects of knowledge (Latour, 1987). A process which could not be achieved through contextual and locally based observation, central to the naturalists' practice since the classical period (Coleman, 1977). Field naturalists came to be labelled amateurs, for being immersed in their natural surroundings their observations were tainted by subjective experience, and therefore not accurate. As a social and occupational area where the distinction between professionals and amateurs became increasingly blurred, the field raised doubts about its suitability as a place for practising science (Kuklick and Kohler, 1996). Natural history being part of an 'expansionist national ethos' (Browne, 1996:306) both in France and in Great-Britain, it was crucial to define the locale where knowledge was to be generated as the naturalist's study. Along with the development of colonial empires, a growing multitude of people engaged in the activity of collecting and sending home specimen from remote areas of the world, with sometimes unverifiable accounts (Browne, 1996; Laissus, 1981). It was therefore vital for people claiming authority on the ground of their knowledge of the natural world, to determine who could be trusted and who could not and make it clear

---

[12] 'The field naturalist passes through, at greater or lesser speed, a great number of different areas, and is struck, one after the other, by a great number of interesting objects and living things. [...] But he can only give a few instants of time to each of them[...]. Thus his observations are broken and fleeting[...]. The sedentary naturalist, it is true, only knows living beings from distant countries through reported information [...] and through samples [...]. If the sedentary naturalist does not see nature in action, he can yet survey all her products spread before him [...]. It is only really in one's study (cabinet) that one can roam freely throughout the universe' (Quote in Outram, 1996:259-261).

UNIVERSITY OF YORK LIBRARY

(McCook, 1996; Shapin, 1994). They also needed to determine where incontrovertible facts were produced. The 'core set' (Collins, 1985) boundaries were established with precision so as to automatically disqualify competing attempts to generate knowledge elsewhere. This movement initiated with a valorisation of the activities conducted in the study of the sedentary naturalist as an enclosed place protected from the vagaries of the field can be analysed as the origin of the constitution of the laboratory as the place where reliable knowledge was produced (Burkhardt, 1999; Kohler, 2002). In the first decades of the 20thC, the debate surrounding the field as a place where science could be legitimately practised continued. By inventing field approaches that could match with laboratory practices in terms of allegiance to the hypothetico-deductive method and by devising laboratory methods compatible with field studies, some field naturalists adopted the dominant ethos of laboratory biologists and became field scientists. These efforts resulted in the rise of disciplines such as ecology, behavioural biology, or population genetics (Kohler, 2002).[13]

Natural history as popular knowledge

All these accommodations did not however contribute to promote the status of natural history, which still is 'at the bottom of the scientific hierarchy' (Secord, 1996:450). Under the heading "natural history" stands everything which cannot or need not be accommodated to the canon of the hypothetico-deductive method. Naturalists remain "civilians", devoted to the observation and enjoyment of nature at large, who are to be found in the field, to be sure, and if

---

[13] The development of genetics in the 1920s, a new laboratory centred science, was comparable for naturalists, in terms of change in the way of studying and apprehending living beings, to that of physiology a century earlier. It represented a further "narrowing" of the gaze towards the inside of the organism, and an even stronger exclusion of the environment (Allen, 1975). One of the consequences of the rise of genetics was the eclipse of the notions of adaptation and natural selection, and their replacement, to explain evolution, by the concept of genetic mutation (Bowler, 2003). Since the cause for evolution was intrinsic, there was no need to look for external factors. Geneticists dismissed field work, as practised by Darwinian evolutionists, as a valid approach to answer questions. Eventually, in the late 1930s – early 1940s, a synthesis occurred of the views held by both camps. As the evolutionary naturalist Ernst Mayr puts it: 'the synthesis was the final implementation of the Darwinian revolution' (Mayr, 1980:43). It provided the opportunity to test historical explanations with the

somewhere else, not in academic institutions, but for instance in local societies, devoting to the study of local wildlife and thus developing a situated form of knowledge, resting upon fieldwork (Allen, 1994). Members of these societies may sometimes be enrolled by scientific institutions to gather local data to be used in wider projects related, for instance, to the conservation of endangered species, but their knowledge is not considered scientific (Secord, 1996).

"Natural history", as a phrase, is now mainly associated with entities like the British Natural History Museum or with

> 'popular forms of entertainment like [...] television documentaries, which have increasingly replaced museums and gardens as the means by which people come to understand their place in global nature' (Bravo, 2005:369).

Natural history would be synonymous with popularised life sciences. However, it can also be seen as an enterprise of knowledge challenging the intellectual authority of academic science. David Allen (1996) notes that '[n]atural history [...] is not and never has been a purely intellectual pursuit. It has a considerable aesthetic component as well' (p.394). Being an enterprise directed towards the production not simply of written words, but more significantly of visual representations, natural history gained, from its beginnings, a large following. No prior commend of a specialist knowledge was necessary to get something out of it. Furthermore, the progressive democratisation of the access to images allowed to gradually broaden the appeal of the pursuit (Findlen, 1994, 1996; Johns, 1996; Allen, 1996; Drouin & Bensaude-Vincent, 1996). By closing the field to professional life scientists, Cuvier and others let it wide open to amateurs (Drouin & Bensaude-Vincent, 1996), who literally flocked the countryside, encouraged by a booming market of illustrated books and magazines replete with stories of field expeditions, advice on naming and identifying plants, birds, animals encountered in nature.

One could expect the main characteristic of this literature to be its heavy reliance on story-telling, its abundance in bucolic pictures, or the quasi absence

---

experimental method and lend the authority of experimental science to the writing of the history of life (Bowler, 2003).

of technical considerations, when compared to works published at the time and presented as scientific. But therein does not lie the difference (Drouin and Bensaude-Vincent, 1996).[14] Darwin's 1839 *Journal of research*, for instance, presented itself as a narrative, whilst 'minute technical details [...] were [..] common in popular writings' (Drouin & Bensaude-Vincent 1996:415). The most prominent specificity of natural history writings was that they often took part in controversies, sometimes overtly challenging academic authorities. An example would be Robert Chambers' *Vestiges of the Natural History of Creation* (1844), where the author promoted the idea, then radical and considered morally and intellectually subversive, that far from being fixed and immutable—an argument favoured by the social elites to justify their position of authority—the natural order was subject to progress and transformation, an idea which was in the interest of the rising middle classes eager to have a share of power. As noted by Peter Bowler '[h]e challenged the authority of the professional scientists by going over their heads in a direct appeal to the reading public' (Bowler, 2003:135).[15] Maurice Crosland has demonstrated how the founders of science journalism in France during the 19thC challenged the authority of the academies which oftentimes had previously rejected them (2001). These analyses of various instances of knowledge-production in public demonstrate the fruitfulness of paying attention to who makes use of knowledge in order to understand instances of the communication of knowledge of the natural world (Latour, 1987).

The links between the nineteenth-century popular culture of natural history and the emotional enjoyment of nature, historically rooted in the eighteenth-century Romantic inspiration, have been highlighted by several studies mentioned here

---

[14] Ron Curtis (1994) has shown that the use of narration, often decried as bearing the seal of distortion, is in fact almost the rule in the communication of scientific knowledge, and popularisation is no exception to the rule. Indeed telling stories is a way of organising facts which may appear merely factual to the casual observer but has actually strong normative objectives. For, far from making communication of scientific knowledge unfit for its purpose, it is 'a powerful tool for promoting a particular normative view of science, whilst at the same time rendering this view immune to criticism. It is a way to moralise while appearing only to describe' (p.434-435)

[15] On Chambers' book, see Secord, 2000.

(e.g.: Allen, 1994; Drouin & Bensaude-Vincent 1996). In the nineteenth-century context of urbanisation and industrial revolution, popular natural history can be envisaged as supporting alternate values of communion with nature. 'Popular natural history fostered the Romantic sense of a secret harmony between human states of mind and natural landscapes' (Drouin & Bensaude-Vincent, 1996:421). The popular study of nature was deemed a source of aesthetic pleasure and moral reinforcement. It thus favoured the development of a view of nature fed on idealism, romanticism, individualism, and sometimes mysticism: in short it favoured the creation of a popular ethos represented for instance in the works of people like Henry David Thoreau and later Aldo Leopold (Allen, 1994). And it made wild nature a desirable space to be in for 'personal growth and renewal' (Kuklick & Kohler, 1996:5). Nineteenth-century natural history, as a popular form of knowledge, therefore contributed to establish today's pervasive ideas that nature is something to be experienced aesthetically, on an emotional level, and that this sensory experience brings genuine knowledge of the natural world (Mitman, 2000).[16] Natural history stands as an alternative to the "rational" approach to nature valuing the emotional distance commended by professional science (Daston and Galison, 2007). It is a 'popular epistemology' (Mitman, 2000), accessible to a greater number of people than the latter, for its main and only commend is 'to open the eyes [...] to the wonders of the living world' (Drouin & Bensaude-Vincent, 1996:424).[17]

---

[16] It also establishes the idea that nature is something which must be preserved (Allen, 1994).

[17] Before being replaced by the professional scientific practices of biology, zoology, and other disciplines, natural history left an enduring legacy. The Darwinian theory of evolution by natural selection can indeed be considered as the ultimate achievement of the natural historical enterprise initiated with Linnaeus' classification work. It was almost the "Holy Grail" every naturalist was "running" after and only a naturalist could formulate such theory (Allen, 1994). As outlined by Bowler, the idea that evolution did occur was most certainly more easily accepted than the idea that it was caused by natural selection. But Darwin's theory did have an immediate consequence: it once and for all gave the human species a natural origin and situated humans within the animal kingdom (Bowler, 2003).

Natural history films, today's embodiment of natural history

Natural history films are today's embodiment of this invitation to contemplate the natural world. They have received growing attention from scholars in various disciplinary fields. They have been examined as material artefacts of the biological sciences within popular culture (Mitman, 1993; 1996; 1999; 2000, 2006), as attempts to foster beliefs in twentieth-century 'fictions' about race and gender (Haraway, 1989; Crowther, 1997; Mitman, 1999), as the outcome of the concerted action of several sets of actors engaged in the pursuit of different agendas (Davies, 1998, 1999, 2000a, 2000b, 2003), and as products of a particular division of the media and entertainment industry (Bousé, 2000; Scott & White, 2003; Cottle, 2004; Kilborn, 2006). Such diverse approaches testify for the multilayered character of these objects which are

> 'the result of much behind-the-scenes labour in which scientific research and vernacular knowledge, education and entertainment, and authenticity and artifice [are] edited and integrated into the final scenes that [appear] before the public' (Mitman, 1999:177).

A genre at the confluence of several practices

Natural history films are generally conceived of as constituting their own genre within the wider field of popular culture (Bousé, 2000). The historical process which accompanied the establishment of this genre is closely related to the birth of cinema itself (Burt, 2002; Bousé, 2000). The practice of filming animals was indeed instrumental in the development of film as a medium. As demonstrated by the works of Edward Muybridge and Étienne-Jules Marey, the prime motivation for developing the motion-picture camera was the need to capture images of moving things. Being self-moving objects, animals proved very useful for that purpose (Daston & Mitman, 2006),[18] and were thus amongst the first subjects on which the "founding fathers" of cinema improved their skills. Both Thomas Edison and the Lumière brothers made short films of

---

[18] On Marey see François Dagognet, 1993, *Etienne-Jules Marey: A Passion for the Trace*, Zone Books; and Maria Braun, 1994, *Picturing Time: Work of Etienne-Jules Marey (1830-1904)*, Chicago & London: University of Chicago Press.

feeding time at the zoo. Films showing animals in movement rapidly proved commercially profitable (Bousé, 2000; Mannoni, 2000), they were promptly added to the catalogues of the early studios and cinema companies (Boon, 2008; Gaycken, 2002). In a nutshell, filming was fashionable. It was the latest scientific invention, and anyone aiming a camera at a moving object could argue that he or she was 'making science': film technology was temporarily blurring the 'boundaries of science' (Gieryn, 1995) which had to be renegotiated. In this context, animals, the motion-picture camera, or the films themselves were 'boundary objects' (Secord, 1994b; Star and Griesemer, 1989). Producing footage of animals was an activity shared by various social groups for whom these images performed specific informative tasks, and held different promises, entertainment, instruction, data-gathering and so forth (Boon, 2008; Burt, 2002; Bousé, 2000).

In this thicket, historiographical analysis distinguishes between at least four modalities of film-making representing animals, which can be organised along a loose continuum from entertainment on one side to scientific endeavour on the other[19]. Entertainment was represented by the work of entrepreneurs in the early cinema industry, mainly concerned with the development of a new form of public consumption. More concerned about exhibiting their technological skills than displaying animals (Wise, 2005), they were on the look out for animated objects to get pictures for a paying public eager to be entertained (Burt, 2002). Exhibited in music-halls these films mostly showed animals, captive or not, being fed or fighting. At the other end of the continuum were biologists who came from the ranks of natural history and were in the process of developing field sciences. They used the camera as an observation and recording instrument, to transport bits of nature to the laboratory for analysis (Kohler, 2002). In between were amateur naturalists, who used motion pictures to illustrate their natural history lectures, most of them specifically interested in

---

[19] It is obvious that the same images can convey many different meanings depending on who looks at them (Myers, 1990). Such categorisation is therefore partly artificial given that footage shown at a scientific meeting and taken not with the intention to entertain but rather to document, say a bird behaviour, can nonetheless be highly entertaining to the audience (Mitman, 1993).

birds (Allen, 1994), and cinema practitioners who envisioned it as a democratic technology and to whom it appeared that filming should be admitted in the scientific sphere as a means of both conducting genuine research and communicating efficiently about this research to the public (Landecker, 2006; Bellows, McDougall, and Berg, 2000; Boon, 2008).[20] These film-makers therefore focused on developing what some would come to call in the 1940s a 'cine-biology' (Durden, Field and Smith, 1943), attempting to mould cinema to the standards of laboratory science, whilst maintaining its wider public appeal. Demonstrating their technical ingenuity through their ability to show the intimate working of nature was a means for them of claiming the right to participate in the scientific enterprise (Boon, 2008).

Ironically, the footage produced by these various groups were not readily distinguishable, and a same footage could be shown to various publics, for various purposes, entertaining, educating, informing, or demonstrating, and sometimes all at the same time (Mitman, 1999).[21] Such intertwining of practices and networks stands as an illustration of 'the technological interdependency of science and forms of mass culture' (Cartwright, 1992:130) brought about by the invention and development of cinema (Griffith, 2002). It can be remarked that in the case of films shot by naturalists and shown in natural history lectures, the observations documented could be reproduced by anyone in the audience because of the geographical proximity of the site of observation. Whereas when the observation documented was made in the tropics, few people in the audience could even dream of reproducing them. The credibility of the film-maker was easier to assert in the former case than in the latter. On the eve of the First World War, the genre natural history film was defined as 'films shot under controlled conditions for educational purposes'. It

---

[20] The films produced by Charles Urban in the 1900s are amongst the early examples of this trend (Boon, 2008). In the introduction to the book presenting the series *Secrets of nature* (1922-1937), which can be considered as a late epitome of this type of films showing animals in Britain, Mary Smith recalled that the films of this series 'always [had] a strong following in what are known in the cinema trade as "better-class halls"' (Field and Smith, 1934:21).

[21] These various producers of footage of animals all had the possibility to sell them to film dealers, which would re-sell them to show organisers who would include them in their music-hall spectacles (Chanan, 1996).

was not long before the phrase 'expanded to include outdoor scenes of animals in their natural habitats' (Bousé, 2000:37). Natural history films have since evolved and diversified; from safari or hunting films, which predominated in the 1920s and early 1930s, to educational films in the late 1930s, to narrative adventure films in the late 1940s and after, and finally to today's "blue chip" documentaries[22], they have developed 'a particular cultural pattern and an audience educated in their special characteristics' (Tudor, 1974:181).

The popularity of natural history films is often attributed to the growing estrangement of Westerners from nature which results from urban industrialisation. Urban audiences would look, in the spectacle of an untouched, ahistorical nature, for 'an escape and respite from the strain of city life' (Mitman, 1999:40). In his case study of Disney's series *True-Life Adventures* (which ran in American cinemas from 1948 to 1960), Mitman demonstrates how this series stood in contrast to nature documentaries such as those made during the New Deal period 'which attempted to efface the boundaries separating humans from the natural world' (1999:108).[23] The Disney studios turned the genre "natural history film" into the 'romantic vision' of an innocent and primeval nature separated from the synthetic civilisation. In so doing, natural history films have tended to exclude humans from the picture, an act far from devoid of political consequences (Lutts, 1990). These films are shot in "Third World" more often than in the West. These

> '[r]egions of the world that appeared "pristine" to the eyes of the Westerners were also places of livelihood for other peoples, who did not necessarily regard nature as an innocent playground nor wildlife as a global resource that belonged to all' (Mitman, 1999:156).

Another form of escapism and one seemingly in contradiction to what precedes involves anthropomorphism; by staging animals as film stars, natural history films would propose to experience 'another way of being' (Daston &

---

[22] The term 'has typically come to refer to programs devoted to observing 'spectacular' animal behaviour displayed within 'timeless' natural habitats and all relatively 'untainted' by human intervention' (Cottle, 2004:83).

Mitman, 2006:8). As film-maker[24] Sarita Siegel explains about a film on orang-utans she made for National Geographic International, '[s]trong [...] animal characters establish an emotional identification with the audience. [...] anthropomorphic association [is] a useful dramatic tool in conveying [animals'] story to a wider audience' (Siegel, 2006:197-198). Films showing animals usually concentrate on one animal protagonist 'who engages our sympathies, and with whom we can identify emotionally' (Bousé, 2000:120). In this sense, natural history films can be seen as presenting animals in a fashion that elides the boundary between "them" and "us". Since the American TV series *Zoo Parade* (1950-1957), animals in TV programmes have often been presented as performers, as 'pet stars'. Treated as a part of the human domestic environment, they become surrogates for humans, interpreting moral short plays aimed at reassuring humans on the order of things. Yet, as Mitman emphasises, turning animals into spectacle makes them objects which exist solely to be observed, studied, and enjoyed. Such ambiguous treatment of the animal kingdom would tend to 'reinforce the dichotomy of humans and nature. We have our world and they have theirs' (Mitman, 1999:206). Watching animals on the screen becomes a voyeuristic experience, because instead of physically engaging with animals 'in work and play', the viewers 'remain at a physically and emotionally safe distance' (*Ibid.*).

Finally, natural history films are analysed as an example of the recourse to the representation of nature to naturalise social norms and cultural values. As Andrew Tudor has pointed out (1974:180):

> 'Genre movies are only rarely disturbing, innovative, or openly deviant. [...] a genre is a relatively fixed culture pattern. It defines a moral and social world, as well as a physical and historical environment. By its nature, its very familiarity, it inclines towards reassurance.'

---

[23] On these documentaries see Kline (1997).

[24] This term is employed throughout this dissertation to designate any person appearing to the audience as responsible for making the film. So David Attenborough, even though he did not carry or operate cameras is a natural history film-maker, to the same extent as the cameramen, or the producers, directors and so on.

Cogent arguments have been presented in the literature demonstrating that emotional and anthropomorphic individual identification with animals in natural history films have been charged with the task of legitimising and promoting the social order dominant in the society producing the films. Barbara Crowther argues that natural history films 'have served women, on both side of the screen, poorly, with a diet that suits male tastes, prepared according to the patriarchal recipe familiar to Western culture' (1997: 299). Mitman on his part, proposes that through its portrayal of a pure nature, as well as its 'sentimental version of animals in the wild' (1999: 111), the series *True-Life Adventures* made a huge success amongst middle-class Americans by "revealing" the pervasiveness of the nuclear family model throughout the natural world. It thus 'sanctified the universal "natural" family as a cornerstone of the American way of life' (*Ibid.*). Similarly, the post-war construction of childhood as a time of innocence opposed to the "corruption" of adulthood found a justification in the portrayal of nature as a pristine and innocent place offering shelter 'from the horrific acts of destruction and degenerative influences wrought by modern civilisation' (p.135).

Various factors have been pointed at as driving forces of the evolution of the genre and the apparition of new types of films and programmes; technological developments (Mitman, 1999; Bousé, 2000; Davies, 1999, 2000b), economical pressure (Bousé, 2000; Cottle, 2004), political demands and social expectations (Mitman, 1999), and the apparition of new disciplines within the life sciences (Mitman, 1993, 1996, 1999; Davies, 2000a). This last aspect will call for particular attention given the scope of this work: how the authority to speak for nature is negotiated in natural history films. But before discussing the relationship between natural history film-making and biological film-making, a few words are needed to announce and explain the choice of material included in this thesis.

In the first place, with the exception of the last empirical chapter (Chapter Six), which deals with *Winged Migration*, the English version of the French film *Le Peuple Migrateur*[25], the study proposed below focuses principally on

---

[25] The migrating people

natural history film-making in Britain. It could be argued that this is too selective a choice which might lead to a biased representation of what is claimed to be a culture of knowledge-production. However, when it comes to understanding how the culture and practice of natural history film-making developed, the British context seems to deserve in itself proper study for at least three reasons. In particular it appears that Britain can deservedly be regarded as the place where natural history film-making burgeoned and developed as an independent practice in the early years of the 20thC, much more than other European country[26]. Isolated examples of natural history film-makers could be found in other countries (for example Arne Sucksdorff [1917-2001] in Sweden), but it does not seem that the phenomenon has had the same amplitude elsewhere as it had in Britain.[27] This could perhaps be related to the fact that the tradition of amateur natural history has remained much more vivid in the beginning of the 20thC in Britain than it has in other European countries (Allen, 1994, Ritvo, 1987). In any case, in the inter-war period, nature films were considered as a specificity of Britain, insofar as such films were shown to participants in international gatherings like the 1933 World Economic Conference.[28] Turning to the post-war period, no country appears to exemplify the institutionalisation of natural history film-making as much as the British case does. If specific bodies dedicated to producing natural history films have been established in other countries within television networks, the BBC Natural History Unit (Chapter Four) has served as a template for their organisation and their running.[29] Given the reach and influence of the British

---

[26] Coming from France, I should disclose that I had no familiarity with natural history films prior to engaging in this research. In France, there would not be at least one natural history film scheduled every night of the week on the main television channel. The genre do not enjoy there the popularity and widespread audience reach it does on the other side of the Channel.

[27] The United States is another example of a place where the practice enjoyed a thorough development but it has already been largely investigated, most notably by Gregg Mitman (1999) and Derek Bousé (2000).

[28] As stated in Percy Smith's obituary published in *The Times* 28 March 1945, p.7

[29] It should be emphasised that China celebrated the production of their first natural history documentary series in 2008 (Jing, 2008), and the article takes as a specific reference to which any attempt at making nature films should be compared, the BBC Natural History Unit's (NHU) output. Similarly, in a 2007 interview with the French newspaper *Le Figaro*, Jacques

tradition of natural history film-making it seems appropriate that an understanding of the manner in which this culture of knowledge-production formed and developed should focus, to begin with, on the country where it appears to have gathered the most strength.

Amongst the actors involved in the construction of this tradition, two are foregrounded in the next chapters, Cherry Kearton and David Attenborough. As for the latter, he is pointed out by insiders as a key individual if one wishes to understand the development of post-war natural history film-making in Britain (Davies, 2000b), and more largely in the West, and when consumers of natural history films are questioned, Attenborough appears as the standard bearer of the practice, to the extent that natural history films is David Attenborough. In other words, as the two historical chapters (Three and Four) will suggest, Attenborough has properly folded the field of natural history film-making around him and stands today as the one who is the richest in the specific capital associated with the practice and culture of natural history film-making (Bourdieu, 1991). And those who are richest in specific capital 'try to impose the definition of [the practice associated with it] that best conforms to their specific interest, that is, the one best suited to preserving or increasing their specific capital' (Bourdieu, 1991:13). An attempt at understanding the culture of knowledge-production that is natural history film-making therefore requires that one examines the processes by which Attenborough became the "richest" in the specific capital associated with the practice.

In a 2007 interview (Mitchell, 2007), Attenborough indicated that Kearton, in particular, had been an inspiration to him, having seen him at a public lecture when he was a child. This partly justifies the prominent place attributed to Kearton in the present work (Chapter Three). More justification could come from the fact that, although others in Britain were engaged in filming animals and nature in general during the first decades of the 20thC (Oliver Pike, Percy Smith, Charles Head, H. A Gilbert, or Captain C.W.R. Knight to name just a few of them), none was as much a public figure as Kearton was, as suggests the

---

Perrin, the producer of *Winged Migration* (Chapter Six) specifically measured his work against the production of the NHU (Frois, 2007).

content of newspapers of the time. For example, when *The Times* ran a supplement to its issue from the 19 March 1929, intended to present to their readership the various aspects of the booming industry that cinema was at the time in Britain, Cherry Kearton was asked to write an article presenting his "Big game Cinematography" (Kearton, 1929a), whereas another paper presenting the natural history films taken in Britain was written by an anonymous correspondent. The other film-makers were operating as employees of cinema companies and primarily sought cognitive legitimisation with scientific practitioners before turning to the public, adorned with this guarantee of trustability. Instead, Kearton was a freelancer who actively engaged with the public at large in fashioning his personal identity, directly asking his audience to trust him, as a showman, a film-maker and a naturalist, and therefore contributing, it seems more than any of his contemporaries, to create a new identity, that of the natural history film-maker, of the "telenaturalist" (Chapter Three).

A third actor, institutional this time, is also given particular prominence in this thesis, the BBC, and more specifically, the BBC Natural History Unit (NHU). This choice, once again, could be considered as unduly narrowing the scope of the study, thus potentially restricting its reach. Indeed, other entities have played a role in Britain in the development of natural history film-making, chief amongst which is the unit from Anglia Television which produced from 1961 to 1991 the natural history series *Survival Anglia*.[30] However, it did not appear that adding an examination of this series and its making to the study proposed here would have added anything significant to the analysis. As far as the manner in which claims to the authority to speak for nature are made and supported in natural history films, it appears that *Survival*, like the NHU's output resorted to the same mixture of values and beliefs recycled from the culture of amateur natural history, most notably the idea that intimacy with nature brings knowledge of it, and the simultaneous

---

[30] For a detailed account of the history of the series see Colin Willock's *The World of Survival* (1978).

demonstration of the property of film-making skill as NHU's natural history film-makers did.

Finally, the choice of the two films chosen as topics for the case studies of Chapters Five and Six, *Big Cat Week* and *Winged Migration* respectively, is entirely subjective and was first and foremost guided by the pleasure I took in watching them over and over again. These two natural history films have not been chosen in the hope of being "representative". To quote Harry Collins on a similar issue (1987:695):

> 'One might say that the methodological rationale was to look for specially brightly coloured or otherwise peculiarly formed specimens of programmes which would reveal widespread features, but with unusual clarity'.

Big Cat Week was chosen specifically in order to understand how natural history presenters assert their cognitive credibility. This programme offered the advantage of containing no less than three presenters acting simultaneously. *Winged Migration* was chosen in order to answer the question "And what happens when there is no presenter and no commentary?" as well as to explore the consequences of the absence of an institutional framework around the making of a natural history film. To further quote Collins, 'I believe that the features described recur singly or in combination more or less frequently in other [natural history films]' (*Ibid.*). The analyses proposed in Chapter Five and Six are intended primarily to invite comparison. We will return to this topic in the conclusion to the dissertation.

Having attempted to offer a rationale for the inclusion of the material treated in this thesis, let us now briefly return to one aspect of natural history films central to the present work, the relationship between natural history film-making and the life sciences.

Natural history film-making and biological film-making, convergent pursuits

At a time when the culture of natural history film-making was thriving, practitioners in the life sciences simultaneously engaged in using film technology. The practice of filming has been instrumental in the development

of biological sciences, in particular the study of animal behaviour. The history of life sciences indicates that since the invention of the motion-picture camera in the 1890s, students of fauna and flora have continuously been using films to address, with the same reels, their peers as well as "the public" (Allen, 1994; Mitman, 1993, 1999; Kohler, 2002). In 1914, the psychologist Conwy Lloyd Morgan, who pioneered scientific animal behaviour studies in Great-Britain, noted that the ""instinctive modes of behaviour" [were] the kinds of behaviour patterns that could be "described or pictured cinematographically"' (Burkhardt, 2005:117). By the 1930s, students of animal behaviour were accustomed to using film in 'the study of behaviour in both laboratory and natural settings' (Mitman, 1993:639). They were amongst the scientists who had to straddle the boundary between field and laboratory, and the camera was a means of bringing field observations into the laboratory where images could then be analysed and turned into sources of knowledge (Kohler, 2002). For instance, in 1935 Konrad Lorenz 'anticipated bringing new insights and precision to his work by comparing film sequences of the behaviour of closely related species' (Burkhardt, 2005:177). As Mitman points out, this use of films implied that scientific practitioners had to select the most relevant patterns of behaviour and get rid of the "unimportant" moments when animals are not doing anything. Their approach could thus be compared to that of a film editor who voluntarily seeks 'the most spectacular and private aspects of animal life' (Mitman, 1999:72).

The adoption, by students of animals in the field, of 'the narrative and visual conventions of the commercial media industry' (Mitman, 2006:185) transformed their methods. Through the example of films about the threat of extinction hanging above elephants, Mitman (2006) shows that Iain Douglas-Hamilton, elephant field researcher, gained a lot of authority from his ability—as portrayed in the films—to distinguish between 'pachyderm personalities' where the lay viewer only saw a herd of lookalikes. The perspectives opened by film as a means of reaching the public, 'outside the traditional network of scientists' (*Op. cit.*:191), could be seen as encouraging field researchers to think about the group of animals they study not in terms of population but in terms of a sum of individuals, in terms of societies, or families, to use

categories usually employed by film-makers. The thesis proposed by Mitman is that the alliance between natural history film-making and animal field research seems to have transformed the latter by instilling some of the norms of the former in it. In their day-to-day practice, field researchers are as prone to emotion in their approach to nature as anyone else. Amanda Rees (2007b) shows that primatologists using the metaphor of soap-operas to describe their field work in popular accounts actually draw an accurate picture of what happens in the field; they do not see animals as representatives of a sex or age class, but as individuals with a personal history just like the characters in a social TV drama, as emotionally sentient beings, which modifies the way observed behaviour are interpreted.

In this perspective, the scientist's authority does not come from the ability to translate the natural world into graphs and a stream of quantitative data he or she is the only one able to comprehend and analyse, but from the intimate contact he or she establishes with the natural world and the creatures peopling it. The scientific practitioner stands as an intermediary between nature and the public, the possessor of a truth inaccessible to the common in its pure form. As Mitman suggests (2006:176), emotional and anthropomorphic individual identification of animals 'len[ds] greater credence to science in the public sphere' than numbers, graphs and statistics.

The convergence between natural history film-making and the study of animal behaviour in the field is further highlighted by the example of the foundation of the BBC Natural History Unit (NHU) in the 1950s and the relationship it established to ethology. Gail Davies, addressing the issue from the perspective of the Actor Network Theory, suggests (1998; 2000a, b) that this relationship was one of common interest. The newly established NHU gaining legitimacy from its association with ethologists, and the public's appetite for natural history films and television programmes helping ethologists to popularise and 'proselytise their new field' (Mitman, 1999:74).[31]

---

[31] This analysis, however, does not allow to understand why, in the first place, scientific practitioners striving for academic recognition, would take the risk to further weaken their standing by bringing their support to a non-scientific enterprise concerned with the production of objects of mass culture. Certainly, this enterprise had to have proved worthy of collaboration

Natural history films have been described as the worst example of popularised science (Dingwall & Aldridge, 2006), or as having nothing to do with "real science" (Jeffries, 2003), for a number of reasons. Too heavy a reliance on spectacular narrative and storytelling is one of them. Unashamed appeal to the emotions of the viewers is another. Both flaws preventing natural history films from giving an accurate representation of nature (Jeffries, 2003), and from conveying adequately the complexity of science (Dingwall & Aldridge, 2006). A form of communication of knowledge whose 'primary functions […]—as art and entertainment—were defined outside the cultural domain of science' (Mitman, 1993:640), and whose narrative mode is in part driven by the emotional involvement of the viewers with individual animal protagonists (Bousé, 2000), natural history film-making raises the issue of the consequences of the presentation of knowledge through a medium embedded in emotions. As this review of the available literature suggests, natural history film-making interweaves knowledge and education with entertainment and art. The films appear as instances of an ambiguous use of science's cultural and cognitive authority.

Conclusion

This literature review has shown that natural history films are multifaceted objects, which have been associated with a variety of pursuits and conducts, and that their relationship to the life sciences is an intricate one, not least because some practitioners in the life sciences have used motion-picture cameras and produced footage unrecognisable from those produced by natural history film-makers. The relationship natural history film-makers maintain to scientific practitioners needs to be clarified. The boundary between life sciences and natural history film-making appears to be peopled with 'boundary objects' (Star and Griesemer, 1989), like motion-picture cameras, animals, and plants. Displaying specific modes of relating to nature and demonstrating mastery of the film-making process become essential to the negotiation of

---

before fragile scientists would risk themselves in such a perilous position (Gregory and Miller, 1998). This is one of the issues this dissertation will discuss.

identities on either side of this boundary. It thus appears necessary to redefine what counts as natural history film-making, in terms of its material practices and actors, and to ask which values and beliefs are mobilised so as to assert the status of natural history film-making as a trustworthy culture of knowledge-production in its own right. Through its examination of the history of natural history, this literature review has underscored that, according to the various needs of successive social actors, different approaches to nature have been deemed relevant to the production of knowledge of nature, which is linked to the fashioning of social identities. It has further highlighted that scientific practitioners' cognitive authority does not stem from any characteristic that would be the sole preserve of the practice of science and that it is a social construct, the outcome of negotiations between social actors. This invites to investigate whether the categories used to explain how scientific practitioners' cognitive authority is asserted are applicable in the case of natural history film-makers. This will be done by shedding light on the historical origins of natural history film-making. Chapter Three will propose a study of natural history film-maker Cherry Kearton's cinema and the fashioning of his identity as a trustable spokesperson for nature, with an emphasis on the cultural values he embedded in this new practice. This chapter will examine the contention that, at least in Britain, the development of natural history film-making in the first decades of the 20thC can be seen as the continuation of the amateur culture of natural history which developed in the Victorian period as a consequence of the formation of the professional disciplines of the life sciences, carved out the practice of natural history as it had developed in the early modern period, alongside the European expansionist project. The Victorian amateur culture of natural history was a culture of knowledge-production based on the methodological principle of observation, whose bearers adhered to values, with relation to the approach to the knowledge of the natural world, dismissed by practitioners in the professional life sciences, in particular the notion that genuine knowledge of nature could only originate from a relationship of emotional intimacy to it. This will be followed by an examination of David Attenborough's *Zoo Quest* series and how it can be considered as a completion of the movement initiated by Cherry Kearton. Chapter Four will examine how

natural history film-making was established on television in the post-war period and how natural history film-makers negotiated their identity with relation to the challenge posed by the increased public visibility of producers of scientific knowledge of animal behaviour. Chapters Five and Six will then offer a study of contemporary instances of natural history film-making so as to determine how the authority to speak for nature is achieved first by natural history film-makers performing on screen in a context where natural history film-making has achieved complete independence from the practice of science, second by natural history film-makers who remain invisible.

This literature review has reasserted that a sociological approach to knowledge allows to recognise that alternatives to the authority vested in science with relation to the production of knowledge of nature are to be considered socially significant. Chapter Two will investigate how an ethnographical approach can achieve a symmetrical approach to the study of natural history film-making as a genuine culture of knowledge-production.

Chapter 2

In the light of ethnography, natural history films as social artefacts

> 'if you want to understand what a science is, you should look in the first instance not at its theories or its findings, and certainly not at what its apologists say about it; you should look at what the practitioners of it do.' (Clifford Geertz, *The Interpretation of Cultures*, 1973:5)

> 'Ethnographers describe the complex relations implied by every technical act in traditional cultures, the long and mediated access to matter that these relations suppose, the intricate pattern of myths and rites necessary to produce the simplest adze or the simplest pot, revealing that a variety of social graces and religious mores were necessary for humans to interact with nonhumans'. (Bruno Latour, *Pandora's Hope*, 1999:196)

In the preceding chapter, we reviewed the literature which will provide us with the conceptual tools necessary to understand how natural history film-makers can become spokespersons for nature in their own right. We saw that natural history film-making, as a culture of knowledge-production rooted in natural history, maintains a complicated relationship to the culture of knowledge-production embodied in the life sciences. In this chapter, we will endeavour to explain the methodological strategies through which this culture can be approached in order to appreciate the social dimension of the artefacts it produces.

Such ambition necessitates that several aspects of natural history film-making be successively considered. The historical development of the genre, the set of values and beliefs which prevail within the community of natural history film-makers and orientate their actions, and finally the social

relationships within which the film-makers and the films exist, need all be taken into account. Such a variety of topics necessitates a flexible analytical orientation. For this reason, we will adopt an ethnographical approach. For being concerned mostly with representations, ethnography allows the analyst to move from one topic to the other 'without modifying [his] analytical tools' (Latour, 1993:96).

Before going any further, it seems necessary to make clear what the understanding of the word ethnography guiding the approach proposed in this work is. The study presented in the following pages has not been conducted along the lines of participant observation. No tent was pitched in the middle of any village, no film crew was followed in the bush in order to investigate their day-to-day conduct, no time was spend in a cutting-room observing the material practices and transactions involved in fabricating the final version of a film. The ethnographical approach here is understood broadly as the study of the totality of artefacts, together with the practices and networks sustaining their production and their utilisation, which mediate a society's relationship to nature (Latour, 1993). What is proposed here is an ethnography of a specific type of artefacts, natural history films. The following chapters are about investigating the social life of these artefacts, so as to be able to 'interpret the human transactions and calculation that enliven [them]' (Appadurai, 1986:5). Such an approach calls for the investigation of the trajectories of these objects, for it is through their trajectories, their travel from sites to sites, the exchanges and transactions they are involved into, that material objects "live" their social life (Appadurai, 1986).

Three main sites of the social life of natural history films can be isolated, the site of production, the site of consumption, or "audiencing", and in between the site defined as the set of material means by which natural history film-makers go public This latter site can be seen as occupying the middle-ground in the trajectory of the films (Rose, 2007). The present study is specifically interested in this site. In this sense it is an ethnographical account, based on the

observation of the diverse ways through which natural history film-makers present themselves and their films to the social totality.[1]

The ethnographical approach encourages us to scrutinise the myths, the rites, the material practices, the institutions, and other components of 'the webs of significance [humans have] spun', in other words the culture in which they find themselves suspended (Geertz, 1973:4), and to interpret their '"function" [...] in terms of [their] role in the maintenance of the socio-cultural system' (Tomas, 1991:100).[2] Jan Golinski (1998) discusses the various meanings of the word "culture" and the ideological connotations it can invoke, in particular its use to designate 'a framework of values beyond the realm of the social' (p.164), but he emphasises that 'the cultural does not have to be set up as a polar opposite to the social' (p.165). This thesis will adopt the view that culture is at once the context, the framework and the result of social practices. It emerges from, as much as it orientates social actions. It can be comprehended as the ensemble of 'collectives' associating humans with nonhumans, as well as the activity of assembling these 'collectives' (Latour, 1993, 1999). Science and technology is the dominant culture that enables Western society to build such collectives of humans and nonhumans, and therefore to manage its relationship to nature. As such, it can be approached through ethnography, or even 'comparative anthropology' (Latour, 1993:96), which aims at comparing natures-cultures. Natural history film-making is a set of material practices which can be seen as attempts to make various nonhuman entities, such as animals, plants, forests, mountains, deserts, volcanoes, oceans, and so forth, part of human society. In this perspective the films can be seen as 'collectives of humans and nonhumans' (Latour, 1993) allowing nonhuman beings to play an active role in Western human societies. Natural history films are the outcome of a nature-culture, of a culture of knowledge-production: natural history film-making. Its components can all be seen as outcomes of the

---

[1] Other sites of the social life of natural history films could be mentioned or studied, such as for instance the trading site, or the site represented by the various festivals existing in the world of natural history film-making.

[2] See the collection of essays edited by George W. Stocking (1991)

multiple social relationships—amongst the film crew, to the public, to the population of the filming location, to other cultures of knowledge-production—through which the films are endowed with meanings (Appadurai, 1986; Rose, 2007), as much as they can be envisaged as the organising principle of its politics. Adopting an ethnographical approach to natural history film-making allows us to stand at the centre of a circle of causation, to position ourselves at equal distance from both the social and the cultural (Latour, 1993), and to explore how natural history film-makers define their role in the broader social context so as to appear as trustable spokespersons for nature. An investigation of the social life of the natural history films genre thus requires a consideration of the participants in this culture, the artefacts it produces, what its symbols, beliefs, rituals are, and how this culture relates to the 'social totality' (Turner, 1991), in other words, how natural history film-makers fashion their social identity on an epistemological basis.

The study proposed in this thesis is therefore more concerned with the social actors producing the visual representations the films are, and the social relationship in which the production of these objects participates, than with the films themselves. The methodological approach guiding this investigation is, to employ a much used dichotomy, 'externalist', rather than 'internalist'. When 'reading' the films, we will not postulate that 'film is very much *like* a language' (Monaco, 2000:152) and set out to decipher this language, as if the films were 'speaking to us' (Banks, 2001:10). Instead, when analysing the visual artefacts, we will keep in mind that

> 'it is human beings who speak to one another, literally and metaphorically through their social relations. But as anthropologists are well aware, human beings frequently displace those conversations onto inanimate objects, giving them the semblance of life or agency. When we read a photograph, a film or an art-work, we are tuning in to conversations between people, including, but not limited to the creator of the visual image and his or her audience.' (Banks, 2001:10)

In what follows, we will first see that adopting an ethnographical perspective enables us to embrace the totality of the culture of natural history film-making, encompassing

> 'the definitions of the forces in play; the distribution of powers among human beings, gods, and nonhumans; the procedures for reaching agreements; the connections between religion and power; ancestors; cosmology property rights; plants and animals; taxonomies.' (Latour, 1993:14)

A focus on the social relations within and around the genre will allow to shed a historical and political light on the object. In this perspective, the comparison of the culture of natural history film-making, as a mode of relation to nature, to other modalities of the relation between Westerners and animals in modernity—hunting, pet-keeping, and zoos—will allow to highlight the love of animals as the essential feature around which this relation is organised (Franklin, 1999). The same comparison will also enable to emphasise the notion that the category of performance is analytically fruitful when trying to understand how claims to knowledge of the natural world based on the spectacular display of animals are supported.

The ethnographic present: values and beliefs of the culture of natural history film-making

Adopting a classical ethnographical approach to the culture of natural history film-making, we will start with an examination of what would stand as its myths of foundation. Their investigation will be driven not so much by the ambition to demythologise, as it will be intent on determining the extent to which they are 'culturally empowering' (Stocking, 1991a)[3], providing the bearers of the culture of natural history film-making with a solid set of references on which to ground their sense of community and belonging.

The narrative of the genre's genesis is consistently referred to by members of the milieu of natural history film-making as an account of origins, and is told and retold through various media, be they interviews with academics (Davies, 1998; 2000b), books destined to the public at large (e.g.: Parsons, 1982; Willock, 1978), or television documentaries. The importance of this

---

[3] See Chapter Three

sense of history can be gauged from the fact that several television programmes have been produced in order to narrate the history of natural history film making in Britain, for example *The way we went wild* (BBC, 2004), on the historical development of wildlife film-making at the BBC, or *Kearton's Wildlife* (BBC/OU, 2003) narrating the biography of Cherry Kearton with an emphasis on his contribution to wildlife cinematography and featuring interviews with David Attenborough. In the same vein, the website *wildfilmhistory.org*, intended to be 'a fascinating online guide to the pioneering people and landmark productions behind one hundred years of wildlife filmmaking'[4], was set up in 2008 by members of the community of natural history film-makers, and provides the visitors with 'ground breaking films, "behind the scenes" photographs, essential production information, and specially crafted learning resources, as well as a unique collection of personal memoirs from key industry players'.[5] It contains an entire section devoted to the oral history of several dozens of people involved in the history of natural history film-making, some of them now deceased. These are lengthy filmed face-to-face interviews in which they tell their life story, with a particular focus on their involvement in natural history film-making. In addition the website presents the biography of key actors in the history of natural history film-making. And these biographies are the opportunity to reassert fundamental tenets of the culture of natural history film-making. On David Attenborough's biographical page, the visitor of the website is reminded that '[h]is first natural history series [...] was presented by Sir Julian Huxley'.[6] And on his part Cherry Kearton (1871-1940), known, at least in Britain, as a founder of the genre, is presented as '[a]n early conservationist, [who] voiced concern over a number of environmental issues and unlike many wildlife film-makers of the time, did not enjoy hunting for sport.'[7]

---

[4] http://www.wildfilmhistory.org/index.php

[5] *Ibid.*

[6] http://www.wildfilmhistory.org/person/85/David+Attenborough.html

[7] http://www.wildfilmhistory.org/person/166/Cherry+Kearton.html

Through Attenborough, some of Huxley's moral authority, originating from his status as a populariser of life sciences[8] is implicitly transmitted to British post-war natural history film-making. And Kearton's portrayal leaves little doubt as to the fact that a strong commitment to conservationism, a valuing of environmental concerns, and, interestingly, a dislike for 'hunting for sport', are cultural tenets of the natural history film genre (see Chapter Three for a discussion of Kearton's relationship to sport hunting). Similarly, in the foreword to *True to Nature* (Parsons, 1982), an account of the establishment of the BBC Natural History Unit (NHU) and of its first 25 years of existence (see Chapter Four for a discussion of the establishment of the BBC NHU), Attenborough evokes the context of its foundation, publicly repeating the values central to natural history film-making, and forcefully re-asserting its cultural essence:

> 'The British are famous […] for their devotion to wildlife. Many of the great naturalists who laid the foundations of zoology in the 19thC were British […]. They were professionals, […] But Britain's amateur naturalists have also made major contributions. […]
> This passion for the natural world […] leads the richest and the poorest, the humblest and the noblest, to stand for hours up their waists in chilling salt marshes watching wildfowl, to tramp for miles across bleak moorlands just to glimpse a rare flower in bloom, to spend night after night counting migrant birds as they fly across the face of the moon.
> So maybe it should not come as a total surprise that the world's biggest group of film-makers and broadcasters, devoted solely to the job of making natural history programmes for radio and television, should be found in Britain' (Parsons, 1982:7)

The pursuit of natural historical knowledge, as embodied in the BBC NHU, is thus presented as a marker of national identity, and a factor of national unity. In this foreword, the practice of natural history is presented as the great social

---

[8] Julian Huxley, even though he died in 1975, seems to remain an almost mythical figure of public trustworthiness in Britain, and the epitome of The populariser of life sciences (Gregory and Miller, 1998)

leveller, for social divisions supposedly vanish in the field, every walk of life sharing in the communion with nature. In this account, the BBC NHU stands as the legitimate heir to the late Victorian middle class culture of amateur natural history, keeping alive and present a system of values foremost amongst which are a belief in rational leisure and the notion that nature ought to be approached through a combination of aesthetic enjoyment with physical and emotional self-restraint (Allen, 1994), and that such an approach generates valuable knowledge of the natural world. Both through the narration of the foundation of a key institution in the cultural landscape of natural history film-making, and with the evocation of the adventurous existence and the remarkable actions of founding heroes such as Kearton or Attenborough, a genealogy of natural history film-making involving historical and authoritative figures of the knowledge of nature is emphasised, and the values and beliefs central to the culture of natural history film-making, the very reasons why it is worth making films of nature, are reasserted (Turner, 1991). In addition, the notion that there would exist such a social entity as a community of natural history film-makers is hinted at. As indicated in Chapter One, the notion of community is one of the rhetorical tools used by scientific practitioners in order to suggest that because of a specific life style, they form a specialised group able to produce "truth" in ways inaccessible to the vulgar (Whitley, 1985; Bloor, 1991). This points to one aspect to investigate when examining the strategies of cognitive legitimisation of natural history film-making (see in particular Chapter Four on the creation of the BBC NHU).

The ethnographical approach discussed so far tends to be based on conceptions of "culture" and "social structure" as enclosed systems, what students of thermodynamics would describe as "adiabatic enclosures", cut from any inward or outward exchanges with the surroundings (Tomas, 1991). George Stocking (1991a) uses the concept of "ethnographical present" when discussing this mode of anthropological thinking: as such, anthropology is a 'dehistoricized' discipline which positions its objects 'in a single moment ambiguously situated outside the flow of time' (Stocking, 1991a:67). Further elaborating on this notion, Terence Turner (1991:292) suggests on his part that

such an approach is 'the antithesis of "change" and the enemy of "history"', and that 'the anthropological concepts of cultural and social structure' are essentially characterised by a 'lack of political, inter-ethnic and historical dimensions' (*Op. cit.*:294). That is to say, adopting such an approach would not provide insights into the way natural history film-makers relate, through their films, to society in general, and to other groups in society with a similarly well defined social identity. Turner insists that the perspective should be broadened. Visual objects such as natural history films, and their making, can be resituated within the web of social relationships in which they are suspended (Geertz, 1973). This can be achieved in particular by paying attention to their materiality, by recognising them as technological artefacts, as objects engaged in social transactions (Winner, 1980), as 'objects with which things are done' (Rose, 2007:217).[9] In other words, if natural history films are to be considered as a genre (Bousé, 2000), they have to be looked at as the sum total of the artefacts classified under the phrase "natural history films", 'a social construction [which] as such […] is subject to constant negotiation and re-formulation' (Tudor, 1989:6).

Natural history films are concerned with animals and natural objects in general, and they embody claims about what is the most efficient way of acquiring knowledge of these objects. The making of such films inevitably involves contact with other social groups, a contact which can be a source of

---

[9] A given artefact can have an impact on society, a point exemplified in Langdon Winner's empirical study of the Long Island Bridges (1980). These bridges' overpasses were too low for busses to pass. This study shows how the design of a technical artefact 'becomes a way of settling an issue in the affairs of a particular community' (p.22), in this case preventing poor and black people from accessing the white, privileged area of Long Island. But, as works in technology studies have demonstrated, the development of technological artefacts is culturally determined (e.g.: MacKenzie & Wacjman, 1985; Pinch and Bijker, 1987) and prevailing social representations, or the values of the dominant group in a given society, are very likely to be embedded in artefacts if these artefacts are to succeed (Hughes, 1983, 1987; Staudenmaier, 1989; Pfaffenberger, 1992). From this point of view, rather than shaping them, natural history films can be considered as encapsulating the representations of nature prevailing in twentieth-century - early twenty-first-century Western societies. They therefore give indications on the manner in which these societies conceive their relation to the natural world. The combination of the two approaches leads to envisaging natural history films as part of what Tudor (1974) names 'a complete circle of causation', they are at the same time products of the culture of the society in which they are made *and* they influence the culture of this society.

conflict. Hunters, for example, are interested in killing animals rather than filming them. Or local populations often have a mode of relation to the natural world that is not comparable to the Western conservationist creed conveyed by the films (see Chapter Five on the relationship between natural history film-making and the local population in an African Reserve). Additionally, there are other groups similarly actively engaged in the production of a cognitively authoritative public discourse about the natural world—for instance field researchers in the life sciences (see Chapter Four and Six on the relations between natural history film-makers and practitioners in the life sciences).

The classical ethnographical approach allows an understanding of the internal framework of references and conventions prevailing within the milieu of natural history film-making, of the social life of natural history film-makers as an enclosed and isolated community, but not quite of the social dimension of natural history films. As we will now see, this dimension of natural history film-making can be reached through a visual anthropological approach focusing on both their contents and their context (Banks, 2001; Rose, 2007).

The visual anthropological approach. Audio-visual artefacts and the identity fashioning process

Being essentially concerned with understanding how the production of audio-visual artefacts representing communities and their social practices participates in the communities' self-definition as distinctive social entities, the visual anthropological approach seems particularly meaningful as a resource for methodological awareness in our investigation. To this regards, the work of anthropologist Terence Turner seems particularly meaningful. Through an analysis of the Kayapo, an Amazonian tribe, Turner tried to understand how this ethnic group related to the wider national context of the Brazilian society, through the production of films (e.g. Turner, 1991; 1992). With this study, Turner understood that the Kayapo, as time went, had come not only to conceive film-making as a means of recording and representing their existence, like an ethnographic film would, but had gone as far as to conceive their culture as something existing to be recorded on video (Turner, 1991). The artefacts they produced became the equivalent of immutable and mobile stages

on which they could perform their identity and thus maintain their 'morale and capacity for action' (Turner, 1991:304). Central to Turner's methodological meditation was the discovery that examining the films themselves, their contents as well as 'the social activities and relations'(Turner, 1992:16) surrounding their making, use, and control, could prove fruitful. In the first place, this approach can be a means of uncovering the values and beliefs of the social group producing the films. Second, it can lead to an understanding of the role played by these audio-visual artefacts and their production in structuring the relationship the social group under consideration maintains to the wider social environment. Natural history film-making can be addressed from the similar perspective of the production of natural history film-makers' social consciousness, with a focus on the identity negotiation process in which they engage through the films they produce. Crucial here is the historical dimension of this process, the fashioning of natural history film-making by natural history film-makers (see Chapters Three and Four), as the expression of a specific way of relating to the natural world and as a means of reproducing and publicly exhibiting this mode of relation (see Chapters Five and Six).

The combination of a concern about history, and about the materiality of the assertion in these films of the set of values, rituals, beliefs, and material practices defining the social identity of the group making the films, can lead us to wonder about the essence of natural history film-makers' relationship to other social groups, and to society as a whole. This thesis will defend that the kernel of the social identity of natural history film-makers, as suggested by the films, is their effort to appear as having a privileged access to the natural world and therefore representing trustable and credible producers of knowledge of nature. In other words, this investigation deals with the question of the social role of natural history film-makers and how they assert it. In this sense, the films are themselves acts of cognitive authority on the part of the film-makers, intended to establish their cognitive status. They are first and foremost fashioned as the credible outcomes of a culture of knowledge-production. This is made particularly evident by the importance attributed to the presenters, who act as mediators between the audience and the natural world (Turner, 1991), as

well as between the community of natural history film-makers and the public at large. The work put into introducing them as reliable knowledge-producers and trustable spokespersons for the natural world draws on two repertoires of social conducts: love of animals, based on the notion that 'animals become objects for the transference of human emotions such as love, care and protection' (Franklin, 1999:54) is both a justification for and a valid means of acquiring knowledge of them (Williams, 2001; Jaggar, 1989)[10]; and performance, based on the notion that performing stands as a valid and efficient means of publicly producing knowledge of the natural world, allowing the performer to appear as a credible knowledge-producer. These two repertoires will guide the examination of the artefacts of the culture of natural history film-making throughout this dissertation.

Identity fashioning and love of animals

Adrian Franklin (1999) identifies 'love' as the main determinant of the relationship between humans and animals in the second half of the 20thC, in contrast to the first half of the century when it was characterised by entertainment and progress through education.

> 'after the 1970s it is possible to discern [...] a desire for a closer relation with animals and nature, a concern for the animals themselves and their well being, involving difficult choices between human and animal interests'(Franklin, 1999:46).

This shift would be the result of 'the moral crisis and disorder of postmodernity' (Franklin, 1999:35). Westerners would find in the spectacle and company of animals solace from the increasing isolation of individuals, and the growing selfishness and misanthropy encouraged by the fact that Western societies gave-up the modernisation project, and engaged in the destruction of 'the jewel of modernity: welfarism' (*Ibid.*). This sentimentalised relationship would also bring relief to the 'existential anxiety' (Giddens, 1991)

---

[10] It should be noted that this point is a debated one. Arluke (1994; 1999) underlines that when animals kept in laboratories as research objects become invested with love by members of the personal, they loose their capacity as objects of knowledge.

generated in Westerners by the realisation of their 'ontological solitude' (Franklin, 1999), animals being seen as co-sufferers, sharing the human condition of being finite, mortal creatures, liable to decay and death, in a nature perceived as crushingly eternal, immutable, and constant.

One sign of this evolution[11] is the way pet-keeping developed in Western societies, where the emphasis has increasingly been placed on the notion of companionability (Franklin, 1999; Haraway, 2003; 2007). Love is the essence of pet-keeping, '[s]ingle person householders, childless partnerships frequently purchase an animal to love and keep them company' (Franklin, 1999:57).[12] And as Haraway (2007) remarks, this love of companion animals is often the cause of and the means through which knowledge of them is acquired. The world of dog breeders 'is a good place to look for people who know more at the end of the day than they did in the morning, because they owe it to their beloved, both as kinds and as individuals' (Haraway, 2007:107). The love of animals similarly has prompted, in some case, a revision of the notion of vermin, some animals whose culling was advocated, like the possum in Australia being 'given nesting boxes' (Franklin, 1999:47). This affective dimension is not absent either from another modality of the human-animal relationship, hunting, 'some hunters […] experience and practice love for the animals they kill'(Haraway, 2007:299). And as much as was the case with pets, this feeling is claimed by hunters as the source of their knowledge of nature and animals:

---

[11] Before Second World War, such an attitude existed but it had remained marginal. In the decades that followed the war, the concern over animal welfare grew—foundation of the World SPA (Society for the Protection of Animals) in 1955, with consultative status with the UN; foundation of Compassion in World Farming in 1967; and the International Fund for Animal Welfare in 1969 (Franklin 1999). The animal rights movement can be seen as a radicalisation of this trend, both motivated by a concern about the welfare of animals and a will to naturalise the idea that humanity should be severed from the animal kingdom. 'It seeks to disestablish zoos, ban pet keeping, illegalise hunting and angling and encourage vegetarianism. […] It seeks to put an end to all contact and relationships with animals' (Franklin, 1999, p. 175).

[12] Although, as Harriet Ritvo makes clear (1987), sentiments were not excluded from Victorian pet keeping.

> 'The demand for progress and its blasé indifference to environmental effects is opposed by a conservation ethic, a love of specific country, of its flora and fauna and attentiveness to its details' (Franklin, 1999:106).[13]

The growing centrality of love in the Westerners' rapport to animals seems best exemplified by the way zoos evolved, from the exhibitions of caged animals in the 19thC to the naturalistic displays of animals roaming free in engineered reconstitution of the African savannah or the rainforest. In the 1970s, most zoological gardens in the West underwent a profound reorganisation of their exhibition.[14] Barless enclosures separated from the public by concealed moats were installed, in an effort to reproduce the natural habitat of the exhibited animals. And today's zoo goers enjoy 'moated exhibits in a landscape simulating nature; gregarious animals of mixed species kept in herds in large enclosures' (Reichenbach, 1996:61). There, they can be under the impression that they experience an unmediated intimate proximity with wild animals as they would appear in their natural habitat. Zoos thus point towards the instrumentality, for an enterprise of public display of animals, of suggesting intimacy with the animal kingdom, as a way of appearing credible

---

[13] This notion is indebted to one of the main conclusion of feminist epistemology, that 'a feminist science of nature needs to draw on heart as well as hand and brain' (Jaggar, 1989:162)

[14] Fairfield Osborn, director of the Bronx Zoo, drastically reorganised this institution in 1941 and began presenting animals in barless enclosures separated from the public by concealed moats. The technique had been pioneered in the early 1900s by the German animal trader Carl Hagenbeck for his zoo in Hamburg (Reichenbach, 1996). Hagenbeck, however, was only preoccupied with the recreation of the appearance of the habitats. Osborn's innovation was the efforts put in the reconstitution of the 'ecological integrity of a particular habitat' (Mitman, 1999:87). Another difference between Hagenbeck and Osborn, is that the former was motivated by the animals' well being as much as the desire to create an attraction that would renew the concept of zoo life (Reichenbach, 1996), whereas the latter, acting during the Second World War, sought to demonstrate the absence from nature of the cruelty exhibited by humanity during the war and of the "law of the jungle" (Mitman, 1999). Most of Western zoos followed the example of the Bronx Zoo in the 1970s. With more or less dexterity they all underwent major refurbishment programmes (Hancocks, 2001). (For more on Fairfield Osborn and the Bronx zoo see Mitman (1996 & 1999); Reichenbach (1996) examines the case of Carl Hagenbeck).

(see Chapter Six for an examination of this mechanism in the case of natural history film-making).[15]

Analysts have suggested that this transformation of zoos could be seen as resulting from many factors.[16] One of these appears to be the fact that since their establishment as public institutions dedicated to the 'understanding and ordering of the natural world' (Hoage & al., 1996:16), zoos consistently followed the transformation of the life sciences, always staging the paradigms dominating this enterprise of knowledge-production, asserting their moral authority through a demonstration of their ability to participate in the activities of scientific practitioners (Kohlstedt, 1996). Similarly, the following of the transformation of the life sciences can be looked for in natural history films (see in particular Chapter Four and Five). As we saw in the preceding chapter, during the second half of the 19thC and the first two thirds of the 20thC, zoos foregrounded for their visitors the Linnean taxonomy. When classification was central to life sciences, until the 1950s, captivity was not questioned as a potentially disruptive circumstance. A caged animal was not seen as different from an animal in the wild and zoos were conceived as legitimate places to watch animals. For example, Konrad Lorenz, the leading figure in behaviour studies at that time, was long convinced that zoos were perfect places to study animal behaviour, since they 'allowed the biologist to compare, side by side, the behaviour patterns of closely related animal species that did not live side by side in nature' (Burkhardt, 2005:267). But the generation who engaged in studying animal behaviour after the Second World War started to question the validity of observations made in captivity. One concern was that since groups of animals in captivity were artificially constituted, the examined relationships

---

[15] In Chapter Five, we will see an instance of an evocation of these moated exhibits in natural history films, when a natural history presenter is seen watching leopards from the other bank of a river.

[16] A factor pointed out as responsible for this transformation is the expansion of television in the 1960s and 1970s and the growing popularity of natural history films, enabling many more people to see images of wild animals free in nature, and modifying public expectations in terms of the spectacle offered by the vision of exotic fauna (Mullan and Marvin, 1999). Another one is the dramatic development of people's mobility occurring in the same period and allowing more people to access directly wild exotic locations. To compete with the tourism industry, zoos had to deliver the exotic on the doorsteps (Franklin, 1999).

between individuals and between one individual and the group might be unnatural, or even artefactual (Rees, 2006a; 2007a). Such a questioning occurred in the general context of a growing concern for the prevention of cruelty against animals. It was not new—the Royal Society for the Prevention of Cruelty to Animals (RSPCA) had been founded in 1824—but it gained momentum and reached a greater public visibility during the 1970s (Franklin, 1999). With this movement becoming more vocal, zoo administrators had to adapt their institutions to the visitors' new demands if they were to maintain a reasonable level of public support. Zoos could not remain "jail-like" in a context of increased concern for the well being of animals, and of doubts about captivity as an adequate context for studying animal behaviour.

The study of zoos as instances of the public exhibition of animals thus points towards two elements which will prove useful in our analysis of natural history film-making as a culture of knowledge-production. In the first place, the evolution in the questioning in life sciences taking animals as their subject of study is an element which should be taken into account when analysing the way animals are displayed in the films. Second, particular attention should be paid to the notion of the love of animals as a central determinant of the manner in which animals are related to, and presented.

As elements of comparison for the analysis of natural history films, zoos can draw the attention to further elements. In particular, it has been emphasised that these institutions, through the display of animals, made claims seemingly unrelated to animals. For example, zoos in the nineteenth-century tradition have been analysed as embodiments of conquest and political domination, animals safely kept behind iron bars symbolising and naturalising for the visitors the metropolis' ability to manage and organise exotic countries through the astute use of Western science and technology (Ritvo, 1987). Similarly the claims to geo-political domination associated with the display of animals can be looked for in natural history films (see Chapter Five on the links between the films and conservation).

As we saw, since the 1970s, zoos have embodied a paradigm of stewardship towards the natural world. Most of the animals held in captivity are now there to be protected thanks to the work and findings of Western scientific

practitioners.[17] The community of zoo managers claims that endangered species can be saved from extinction through captive breeding programmes provided that animals are kept in replication of their natural habitat, and that zoos are places participating in the production of scientific knowledge, since they allow research to be conducted on the reproductive behaviour of animals, their physiology of reproduction, or the development of techniques of genetic engineering (Norton et al., 1995). Somehow, zoos' insistence on their mission of conservation tends to turn them into giant veterinary clinics and the zoo animals into the communities' pets (Caras, 1995) which are not anymore captives but "patients". The restraint imposed on their freedom is justified by the feelings of empathy, affection and even love, that pervades Westerners' relationship to animals (Franklin, 1999). People visit zoos to acquire knowledge of animals but also because of the promise of moving close encounters with threatened wild animals such as elephants or gorillas (Maple & al., 1995).[18] And zoos become manifestos of the superiority of Western science and technology as a means of relating to wild animals and bringing them as participants within humans communities. Lessons taken from the study of zoos thus offers another element to track down in our analysis of natural history films. It encourages us to look for the ways they participate in naturalising the notion that the Western way of relating to animals, based on compassion and emotional involvement as well as aesthetic appreciation, is the most desirable one.

---

[17] The acceptance and significance of this new mission on the part of zoos and the relevant scientific communities can be seen in journals such as *Conservation Biology,* and the many papers they publish on the topic.

[18] These possibilities offered by the zoos have been analysed as instances of almost sadistic and immoral pleasure (Malamud, 1998), or at least proof of the intrinsic domineering attitude towards animals, encapsulated in zoos. For example, the act of feeding animals in the zoo has been analysed as symbolising 'both proprietorship and domination' (Ritvo, 1987:219). Zoo defenders have suggested that feeding an animal can on the contrary be analysed in a more positive way as a very intimate act, one that implies a real emotional involvement, and which can lead to the development of sympathy feelings towards the animals thus encountered. Such an "imprinting" of visitors—some would say emotional manipulation—is presented by people in charge of zoos as a means of instilling conservation consciousness in the public (Maple & al., 1995). A study of natural history films similarly needs to try to decipher how they use emotions, to what ends (see Chapter Five on the use of emotions to enrol the audience in the conservationist network, and Chapter Six on the use of emotions to assert the trustworthiness of the film-maker) .

Performances of knowledge in the identity fashioning process

As modalities of the relationship between humans and animals, the analysis of natural history films has to take into account the human emotion of love, the central determinant of the way Westerners relate to animals. However, as instances of knowledge-production in public, natural history films also need to be addressed in the light of performance.

Works concerned with the manner in which knowledge-producers convince the public of their credibility have argued that they can fruitfully be approached as performers who assert their identity through 'spectacular displays of nature's powers—and of the lecturer's own powers over nature' (Morus, 2004:26).[19] During these spectacular exhibitions, or 'wonder shows' (Nadis, 2005), knowledge combines with showmanship to provoke a feeling of wonder in the audience and offer, for instance, 'a glimpse of a non-human perspective' (Nadis, 2005:xii). The success of such performance depends on the visual display of a 'spectacular effect' which, as well as demonstrating how nature works, asserts 'the power of the showman to control that nature' (Morus, 2006:110). This spectacular effect is a true 'wonder phenomenon', one which 'would evoke awe, destroy previous conception, blur the opposition of nature and art, and provide tantalizing hints regarding the true order of nature.' (Nadis, 2005:8).[20] In particular, as Latour remarks of Louis Pasteur's successful performance at the French Academy of Sciences, after the demonstration, the actors (Pasteur and the microbes), as well as the audience (the academicians) are all modified:

> 'actors *gain* in their definitions through this event, through the very trials of the experiment. […] Pasteur […] is modified […] as does the Academy, and, yes, the yeast too. They all leave their meeting in a

---

[19] On this notion see Schaffer, 1992, 1994, 1995, 1997, 2006; Griffiths, 2002; Nadis, 2005; Morus, 2004, 2006.

[20] Similarly, exhibitions in zoos and natural history museums can be seen as performances (intentionally) modifying visitors' perception of the order of the natural world. On natural history museums see Haraway (1989), on zoos see Ritvo (1987) and Hoage and Deiss (1996).

different state from the one in which they entered.' (Latour, 1999:126-127)

A successful performance of knowledge is thus one which, on the one hand, allows the performers to demonstrate their skills, therefore establishing their status and transforming the way they are perceived by the public, and on the other hand, provokes a lasting modification in the audience's conception of the natural world, because some of the actors in the performance have undergone such a transformation that an entire reordering of the natural world will be necessary.

Naturalistic exhibitions in zoos fall under this category. A comparison of natural history films to zoos therefore will again prove useful. In the first place, one can remark that in zoos, a lot of effort is usually put in terms of landscape design, by controlling the lines of sight, by creating false perspectives, by ensuring that as few human artefacts as possible are visible from the track followed by the visitors, whilst animals almost always remain visible (Hancocks, 2001—for a contrasting example in natural history films see Chapter Five on the pervasiveness of cars on screen). And as a result, visitors to a naturalistic zoo do not see animals held in captivity in an urban environment, but are invited to participate into the animals' world. The cognitive reliability of zoos is asserted through their capacity to recreate animals' habitats and maintain these animals alive.

This discussion highlights one characteristic of performances and of the way performers assert their trustworthiness: the subtle balance which is maintained, during the spectacular display, between strategies of concealment and strategies of exposure. As Iwan Morus emphasises in his discussion of Victorian scientific showmen:

'Deciding what to show and what to hide was an issue that concerned anyone involved in the business of exhibition. The key to successful performance often lay in the management of information between performer and audience. […] Even if showmen did not want their audiences to see all their secrets, they wanted them to see enough to recognise and applaud the skill and ingenuity that lay behind the

> successful show. Strategies of concealment and exposure therefore lay at the heart of scientific performers' self-fashioning.' (Morus, 2006:105)

When analysing a performance it is therefore useful to pay as much attention to what is made visible by the performer as to the hidden labour involved in putting it together. This will be done in this thesis through a study of the strategies of exposure and concealment used in natural history films. This also points towards the process of identity fashioning that performers need to engage into so as to appear as trustable knowledge-producers via their performances. This process has been convincingly analysed as a mixed one, involving both instances of recycling and invention. Social actors anxious to build an identity will take possession of already existing and tested social and cultural codes, and blend them so as to produce an original combination fitting their particular needs and the role they wish to play in society, thus creating new identities for new conducts (Haraway, 1989; Biagioli, 1993; Shapin, 1994; Golinski, 1998; Morus, 1998). Further reflecting on this "bricolage" dimension of identity making (Biagioli, 1992), Steven Shapin draws the attention to the fact that a social identity is continuously 'revised and remade' (1994:127). In addition to examining which cultural and social codes are employed by the actors under scrutiny, a study of identity fashioning thus needs to be conducted at the biographical level, and to pay specific attention to the social relations these actors enter along their career, since these will allow to highlight the collectives in which the central characters of these biographies participate.

Combining observations made during anthropological studies of ritualistic performances with lessons taken from directing a troupe, Richard Schechner (1985; 2003) emphasises a last point which appears to be relevant in this context. In the course of the performance, be it a shamanistic ritual or a dramatic representation, performers are at the same time "not themselves" and "not not themselves". And all the work, the skills of the performer reside in mastering this dialectic. For it is in 'the distance between the character and the performer [that] a commentary [can] be inserted' (Schechner, 1985:9). This commentary is often a political one, but it can also be an aesthetic or personal one. Addressing the notion of performance from the perspective offered by the performing arts underscores that cultural performances define a threshold, are

situated "in-between" two realms. And, as Schechner notes, 'performances that exist "between" "art" and "life" make all those quotation marks necessary, for these performances throw into question the very categories they represent' (Schechner, 1985:324). Politics nest in the "in-between" space left vacant by the incompleteness of the transformation. From this perspective, the question of the commentary inserted in the space left vacant by the incomplete transformation of the performer becomes an essential one in a study addressing natural history films as performances.

To address natural history films as spectacular displays straddling the boundaries between "science" and "popular knowledge", "culture" and "nature", highlights the arbitrariness of the separations drawn between these categories, and therefore underlines the role these films play in relation to the notion of social order (Schaffer, 1995). This is made particularly evident by the notion of the success of a performance. In order to achieve its objective, a performance needs to be successful; the performer must demonstrate the expected property of skill, and manage to display the right spectacular effect. As an activity which, in many respects is ritualistic[21]—it takes place in dedicated places or spaces, it is traditional 'in the most basic sense', it follows rules which can persist 'because these activities are something apart from everyday life' and take place in a 'special world where people can make the rules, rearrange time, assign values to things, and work for pleasure' (Shechner, 2003:13)—a performance, and its success, is evaluated according to a set of standards and conventions which are the result of social negotiations. The measurement of the success of a performance is therefore 'an inherently social and political process' (Golinski, 1998:176), involving the stability of the social order. So when a new kind of performance is granted success this goes along with changes in 'agreed standards of value' (Schaffer, 1995:162) and signals an evolution of the social order. In Chapters Three and Four, we will look at the way natural history film-making developed in the context of the rise

---

[21] The ritualistic dimension of some performances lies in the format, not the contents. 'the format insures that certain contents, certain classes of events, will be repeated; and repetition is a main quality of ritual' (Schechner, 1985:315)

to power of the middle classes in Britain. In Chapter Five, we will examine natural history film-making as a way of asserting the values of conservation and of promoting a form of neo-colonialism.[22] The social function of natural history films, if taken as performances, could therefore be 'to experiment with, act out, and ratify change' (Schechner, 2003:191). To some extent, they can be said to be about the ability to deal with the problematic interaction of Western culture with nature (Latour, 2004).

Conclusion

In this chapter, it was proposed that an ethnographical approach would be methodologically suitable for the study of natural history film-making. In the first place pitching one's tent in the middle of the village and adopting towards the genre an attitude 'at once intimate and distanced' (Stocking, 1991a:16) enables to analyse and interpret the framework of references and conventions that prevail within the milieu of natural history film-making. Adding, through an investigation guided by the methodological requirements of visual anthropology, a political and a historical dimension as well as the notion of social interaction to the classical ethnographical notion of culture (Turner, 1991), allows to further widen the analysis of the social life of the natural history films genre. It sheds light on the processes of identity fashioning of natural history film-makers, and in particular on the performative quality of natural history film-making.

In what follows, Chapter Three will examine the foundational myths of the culture of natural history film-making, Cherry Kearton's career and David Attenborough's debut, tracing back their origins and resituating them in the context of their formation. Chapter Four will address the institution of the BBC Natural History Unit in 1957, its role as a binder for the natural history film-making community, and the consequences this had on the way the authority to speak for nature is achieved in the context of natural history film-making. Then two case studies will propose an interpretation of how the knowledge-

---

[22] As previously mentioned, this conclusion is indebted to the literature in the social

producing culture of natural history film-making presents itself, the many artefacts it produces, the conducts it valorises, in order to appear as generating a credible discourse on nature, and a true knowledge of the natural world, in other words, what 'social graces and religious mores' (Latour, 1999:196) are involved in natural history film-making.

---

study of technology (Hughes, 1983, 1987; Staudenmaier, 1989; Pfaffenberger, 1992).

Chapter 3

From Kearton to Attenborough - Fashioning the natural history film-maker's identity as a knowledge-producer

'Voyagers will no longer have the exclusive privilege of observing living nature'
(Burkhardt, 1999:491)

With this chapter begins the examination of the process which led to the establishment of the natural history film-maker as a trusted figure of knowledge-production. We will concentrate on the period from 1909, when Cherry Kearton (1871-1940) started filming wildlife in Africa, to 1957, when David Attenborough (born in 1926) was offered the position of head of the BBC Natural History Unit (which he refused), after having produced three *Zoo Quest* expeditions and demonstrated his skills at natural history film-making.

We will examine to what extent the practice of natural history film-making can be rooted in the late Victorian bourgeois culture of amateur natural history, which valorised self-improvement, rational leisure and self-restraint. This will lead us to ask how the practice of natural history film-making can be accounted for in the context of a socially stratified access to nature. In this light, it will be suggested first that natural history film-making developed as a means for the middle classes of accessing the leisure territory covered by the 'Imperial hunting grounds' (MacKenzie, 1988), and second that the development of what was called 'Big Game Cinematography' (Kearton, 1929a) modified the type of behaviour considered socially acceptable in these regions, as viewed from the metropolis. The analysis will in particular focus on the development of natural history film-making and its tight intertwining with the progressive superseding of big game hunting by a general feeling of stewardship towards colonial animals. This in turn affected the type of evidence which had to be provided by someone like Kearton so as to stand as trustworthy. The demonstration that one

acts in the public interest became crucial in supporting claims to trustworthiness. We will then examine the posterity of the practices inaugurated by Kearton, and see how Attenborough's *Zoo Quests* can be distinctly tied back to the same tradition of amateur natural history as Kearton's cinema. David Attenborough's case will provide illustration of the fact that the tradition of natural history film-making inaugurated by Cherry Kearton in the first decades of the 20thC was resuscitated in the immediate post-war period, with its set of associated values and beliefs, thus suggesting that, following Kearton's conscious efforts to fashion his personal identity, the Victorian culture of amateur natural history had found a new standard bearer, the natural history film-maker.

Natural history photography: self-restraint in the public interest

Born in 1871 in Thwaite, Swaledale, in Yorkshire, to a yeoman farmer who was also a gamekeeper, the young Cherry Kearton spent his first years wandering in the Yorkshire Moors, learning nature in the field rather than in books, and helping at the farm. At sixteen, after his father died, he went to London where he became an office clerk at the publicity department of Cassell, Petter & Galpin, the publishing company where his brother Richard (1862-1928) had found employment five years earlier (Mitchell, 2001). In the early 1890s, Kearton took up bird-photography as a hobby, and in 1894 he quit Fleet Street to become a free-lance photographer, and a year later, in 1895, he was responsible for the photographs illustrating *British Birds' Nests* (Kearton, 1908) a book authored by his brother Richard. Upon publication the book received much praise: 'Dr. Bowdler Sharpe, of the British Museum, South Kensington, said that it "marked a new era in natural history"' (Kearton, 1908:v), the technique of nature photography was hailed as showing 'things as they are and not as they are supposed to be' (*Ibid.*). Between 1895 and 1907, a string of equally praised publications followed, written by Richard Kearton and illustrated by Cherry Kearton's photographs "taken direct from nature" (as read

the title pages).[1] They were typical of the volumes which appeared with the 'passion for ornithology' (Allen, 1994:207) spreading over Britain in the 1890s.[2]

One notable social effect of this craze for birds was to confirm the idea that watching them alive was more desirable than shooting them with a gun. This 'radical about-turn in ethics' was made possible, David Allen suggests, first and foremost because birds were socially constructed as 'the epitome of untamed, unfettered wildness (…) [which] carried the hint of a strong and self-sufficient manliness' (Allen, 1994:207). And indeed, one theme pervading Richard Kearton's books is precisely this idea that photographing birds is a sportive pursuit equal to hunting at its best in terms of individual achievement. In the preface to *Wild life at home*, he wrote:

> 'To pit one's skill and ingenuity against the shyness and cunning of a wild bird, or summon the courage and endurance to descend to its home in the face of some dizzy ocean cliff, is in itself a feat which calls forth the very best hunting instincts of the human race.' (Kearton, 1901:viii)

The same themes, familiar in discourses promoting hunting, are used here in conjunction with a valorisation of bird photography. As much as hunting, bird photography appears as an opportunity for demonstrating one's knowledge of nature by measuring it against the wildness of the birds, as a ground where 'the qualities of hardihood, self-reliance, and resolution needed for effectively grappling with [one's] wild surroundings' (Roosevelt, [1897], 1998:74) can be manly exerted and tested. But here stops the analogy, for embedded in this discourse, intent on promoting bird photography as a pursuit equal to bird hunting, is a firm condemnation of the violence of shooting birds:

---

[1] For a detailed and exhaustive bibliography see Mitchell (2001). It should be mentioned that Cherry Kearton provided photographs that were used to illustrate the famous Gilbert White's *Natural History of Selborne.*

[2] One factor which helped diffuse this fashion, was the vogue, from 1895 on, of natural history photography, another was the fashion of bird feeding (Allen, 1994). Of course, rather than a linear process of an effect following a cause we are dealing here with a feedback loop, photography benefiting from the passion for ornithology then reinforcing this passion and so on and so forth.

> 'When one man can [...] shoot, in spite of the law, eight specimens at one shot, of a bird that used to breed regularly in our islands, and would do so again if allowed, the true bird lover is left in despair over the prospects of every species that can be called "rare".' (Kearton, 1908:vii)

Allen points out how such calls to refrain from exerting violence on birds, on the ground of an aesthetic reward, found a welcoming echo in the late Victorian cultural context which so much valued individual self-restraint (Allen, 1994; Young, 2003). There is a sense however that such valuing of self-discipline was also a means of imposing restrictions, in particular to people considered as social inferiors. John MacKenzie has shown how celebrating self-restraint in big game hunting on the part of imperial elite, mainly in Africa, was principally intended to demean local populations' hunting practices and restrict African access to big game (MacKenzie, 1988). Here a similar interpretation can be proposed. For Richard Kearton's condemnation of bird shooting amounts to demeaning what constituted an important tenet of the popular mode of relationship to nature in Britain in the 19thC (Tichelar, 2006). It can therefore be related to the general middle-class endeavour to restrict popular modalities of the interaction with nature, and by contrast promote as worthier its own mode of relationship to the natural world, suffused with a robust and 'controlled lyricism' (Allen, 1994:205). Two features of this way of relating to nature are particularly put forward in these texts. First refraining from shooting birds is positively correlated with the notion, also dear to the late Victorian middle classes, of the value of rational recreation and self-improvement:

> 'It is far more interesting to any man who can be called an ornithologist and not a mere collector of bric-a-brac to see the living representative of a species soaring majestically over a mountain top than to gaze at its empty egg shells in a cabinet.'(Kearton, 1908;vii-viii)[3]

---

[3] It should be emphasised that the form of egg-collecting R. Kearton was opposed to was that practised by children and other people who did so in order to sell them to collectors, for a profit. On the contrary, Richard Kearton very much encouraged egg-collecting provided that it was intended to advance knowledge in 'Oology' (the science of eggs). He himself authored a book, *Birds' Nests, Eggs, and Egg-collecting*, (London, 1915 [first edition 1890]),

Second, and perhaps more significant, imposing restrictions on bird hunting, or egg collecting, is justified by claims that it will advance the general public's interest, since it will allow more people to observe for themselves living specimens. Self-restraint is therefore morally valued insofar as it links the private improvement of the virtuous individual to the betterment of the community's lot. By a subtle rhetorical turn these middle classes, whose members could not participate in the elite hunting practices and would not lower themselves to indulge in plebeian hunting practices, make a virtue out of necessity. The self-restrained individual is presented as acting first and foremost for the public good:

> 'It is a curious kind of morality that will scorn to steal from the individual and yet rob the community without compunction. Wild birds are National property, and no individual has a right to harm one of them without the sanction of the law to do so.' (Kearton, 1908:vii)

These ideas gained much influence from the successive prefaces of these books, written by Richard Kearton, who was endowed with all the moral authority conferred upon him by his fellowship in the Zoological Society and who incessantly promoted his brother's practices. He emphasised the accuracy and the reliability of the technique, as well as his brother's skills, writing, for example, in the preface to the 1897 book *With Nature and a camera*:

> 'a necessity of our mission has been to render effect subordinate to accuracy, and the value of this will, I think, be admitted upon comparing my brother's photograph of a Fulmar Petrel with any picture of the bird in existence made by a pencil. Whilst the general public will, we hope, appreciate our efforts and the results we have obtained, the field naturalist and the practical photographer alone are in a position to understand the true character of our difficulties.' (Kearton, 1911:ix).

---

in the preface to which he explained: "This book is not intended to encourage the useless collecting of birds' eggs from a mere *bric-a-brac* motive, but to aid the youthful naturalist in the study of one of the most interesting phases of bird life. It is to be hoped that the Act of Parliament empowering County Councils to protect either the eggs of certain birds, or those of all birds breeding within a given area, will be of great benefit to many of our feathered friends." (n.p.).

These texts once and for all established Kearton's public reputation as a trustworthy photographer. His patience, courage in the face of danger, and skills in the field allowed him to get pictures few others could, which often revealed hitherto hidden aspects of nature (Mitchell, 2001). And perhaps as important, they also contributed to establish as socially acceptable a set of beliefs central to Kearton's later practice, revolving around the notion that killing animals was as unnecessary as it was undesirable.

This is the case, in particular, with the idea that self-restrained individuals engaged in a direct interaction with nature, obtain credibility from the emphasis placed on the fact that their actions are primarily beneficial to the public—rather than to themselves—because their self sacrifice allows an increase of the common stock of knowledge. This conception seems to have been foundational during the inter-war period in the context of the production of natural history films as a form of moral and rational recreation that could fit in the economical model of mass entertainment. And similarly it proved instrumental to appropriating the imperial ground left vacant by a fast diminishing hunting elite. Kearton started filming exotic wildlife a few years before the First World War, but his public career as a natural history film-maker—that is when his films where regularly shown and advertised—only started after the war, at a time when imperial big game hunters were almost becoming part of history, as their activities became increasingly restricted by law whilst the idea of conservation consistently gained ground (MacKenzie, 1988).[4]

---

[4] Of course big game hunting did not cease with the First World War. It is still practised today. However, some of the most legendary figures of Victorian big game hunting died during the war (Selous died in 1917) or soon after. In the 1920s, the movement of increased restriction of big game hunting which had started in the last years of the 19thC, along with 'the replacement of a forceful, confrontative model of colonial domination by one with greater emphasis on stewardship' (Ritvo, 1987:281), was gaining steam. 'By the 1930s conservation had become an almost unarguable creed' (MacKenzie, 1988:306-7). Kearton thus started filming in Africa in a place almost devoid of hunters. It might be suggested that Kearton's films favoured this loss of public appeal for big game hunting and in turn benefited from it. It could also be argued that Kearton's success benefited from the popularity of watching animals peacefully alive which could be attributed to the disgust provoked by the carnage of the First World War. However it might also be that his films were seen by institutions such as the Empire Marketing Board (see Stephen Constantine's study of the efforts the EMB deployed to advertise the Empire to its population so as to make it more profitable (Constantine, 1986)) as useful propaganda tools for the development of potentially profitable activities such as game tourism in the Empire.

Bourgeois filming on elite hunting grounds, democratising the access to exotic nature

Kearton began taking moving pictures of wild animals 'behaving naturally in their native haunts' in 1903, repeating with a motion-picture camera what he had done with a still one during the preceding ten years: getting pictures of birds. These early films were not intended for exhibition in the fast developing milieu of mass entertainment, but for the illustration of Richard Kearton's natural history lectures (Mitchell, 2001). However, by 1908, Kearton felt that, having served his apprenticeship in Britain, it was now time to go abroad—travel was a crucial component of the history of natural history in the 'straitlaced Victorian era' (Browne, 1996:306):

> 'Amid such adventures as these, I learnt the art of nature photography. […] I had learnt to approach noiselessly […] to conceal myself, […] and above all, I had acquired that essential thing—limitless patience. And in addition I was now completely the master of my craft: if I could get within range of my object, no technical difficulty was likely to defeat me. Thus armed, my thoughts turned to foreign countries. I had photographed nearly every bird found in the British Isles, and a good many small animals. Why should I not now go abroad and photograph creatures which were not to be found at home?' (Kearton, 1936:28-29)

His first venture in this field was an expedition to British East Africa in 1909, followed by another in 1910. He then spent some months in India and Borneo in 1911, travelled across North America and Canada in 1912 and returned to the African continent in 1913, this time to Central Africa.

Because of his focus on East Africa's fauna in his practice of 'big game cinematography', Kearton inevitably trespassed on the hunting ground of the imperial social elite (MacKenzie, 1988). And given the declared hostility at that time of big game hunters towards 'bourgeois sportsmen' (Ritvo, 1987:280), accessing places where big game could be found could have proved difficult for Kearton, because of his social status. In this regard, it appears significant that on his three expeditions in Africa before the First World War, Kearton consistently joined forces with American hunters. Now, in American

society, access to the land and to the game by means of hunting was open to everyone (Franklin, 1999). They were therefore culturally less inclined to restricting access to nature to someone on the basis that this person was not of the appropriate social standing.[5] This association could therefore be interpreted, on Kearton's part, as a shrewd manoeuvre circumventing the existing social order in imperial Africa, or at least his answer to a situation forced on him by his social position. It indicates in any case that his relationship to those who have been called the Great White Hunters was a rather complex one, especially in the light of his belonging to a social group vocally opposed to hunting.

Kearton's relationship to big game hunters can be summarised as a transition from silent witnessing, disapproval of hunting but not necessarily of hunters, to comradeship, to disappearance. His first films were advertised as accounts of the actions of Theodore Roosevelt, the former American president, during his hunting trip to Africa, and the animals he had seen there. It should be noted that in these footage Roosevelt is never seen actually shooting an animal (Mitman, 1999). Then the First World War provided Kearton, enrolled in a frontiersmen battalion, with the opportunity to rub shoulders with big game hunters—'Around the camp-fires with me at various times in German East Africa were Selous, Outram, Pretorious, Richardson, and Ryan, all famous hunters' (Kearton, 1923:223), sharing with them, amidst danger, a common passion for natural history:

> 'When we were not very seriously occupied we had side lines. Selous used to catch butterflies, whilst I collected beetles. […] I came across seven or eight of the most exquisitely coloured beetles I have ever seen, and […] began to collect them. My hope was to keep them inside my helmet until I got back to camp, as I had nowhere else to put them.
>
> Selous saw I had got something and quickly begged a couple from me.

---

[5] Even if, as Donna Haraway (1989) and Gregg Mitman (1996; 1999) both emphasise, the American conception of a democratic access to nature was a means of spreading and consolidating the social and moral values of the ruling elite of white, capitalist sportsmen.

> We were both lost in admiration, looking at a specimen, when a bullet whizzed between our faces.' (1923:227)

After the war, hunters vanished from Kearton's story, and the film-maker documented his own travels, advertising the fact that most of the time, he 'was totally unarmed' (Kearton, 1923:87). Following this evolution, and taking as a model the development of bird photography which, as we have seen, originated as a form of rational leisure in the bosom of the middle-class culture of amateur natural history, it can be suggested that natural history film-making is a manifestation of the mode of relationship to the exotic nature of the Empire which the growing middle classes of the inter-war period developed, and which was used to further spread the idea that it was the most legitimate there could be.

In this context, Kearton is seen appropriating the discourse of the notably elitist Society for the Preservation of the Fauna of the Empire, at a time when the influence and power of this pressure group, set up by big game hunters in 1903, was quickly fading (MacKenzie, 1988). Exporting to Africa the practice of natural history photography, Kearton took with him the values associated with it and extended to the Empire the restrictions elaborated at home. And by 1929 he was eager to make publicly known that even members of the royal family[6] had taken to filming big game instead of shooting it, and that they were coming to him to seek advice:

> 'The Duke of Gloucester called at my camp on this trip, and I told him to keep a look-out for those elephants and also for a big rhino I had seen. He told me later that they saw the rhino, but missed the elephants. I sincerely wished that he had had better luck for he is a keen sportsman and cinematographer, […]. He, I need hardly say, does not shoot from a car: he is far too good a sportsman for that. But he does fine work with a camera, and some cinematograph pictures which he showed me were really excellent.' (Kearton, 1929a).

---

[6] The top rung of the ladder in terms of imperial big game hunting

Since Edwardian bourgeois could not hunt big game, they started filming it and watching it, challenging 'the aristocratic monopolisation of status symbols' and appropriating them, in an 'usurpation mechanism [which was] not violent or revolutionary but commercial and moral' (Young, 2003:63).[7]

Perhaps nothing could illustrate this process of status acquisition by Kearton better than the manner in which he managed to attract attention to his 1911 Indian films, using no less than the King of the United Kingdom. The same day Kearton returned from India, the newly crowned Emperor-King George V arrived there. And the *Daily Mirror* could be seen obligingly using the coincidence to advertise Kearton's films:

> 'Very much what the King will see and experience during his hunting trip in Nepal has been photographed with a cinematograph camera in Mysore by Mr. Cherry Kearton, well known for his unique pictures of wild animals in their own homes, who has just returned to London after visiting India and Borneo […] "Many of my photographs were taken from the back of an elephant, thus getting views of the jungle exactly as the King will see it," Mr. Kearton told *The Daily Mirror* yesterday. The elephant the films were taken from was one caught in King George's presence in Mysore, during his last trip to India.' (Anonymous, 1911b)

In this quote, natural history films are clearly constructed as participatory devices. Like Kearton's film of Roosevelt in Africa had offered North American audiences the opportunity to witness what their former president had been seeing there (Mitman, 1999), his Indian films allowed British audiences to vicariously see what the Emperor-King would experience. The fact that the release of the film almost coincided with the monarch's visit was the guarantee of a quasi-simultaneity which added to the realism of the experience. Kearton was furthermore symbolically endorsed by the fact that he filmed from the back of an almost royal elephant. Even the point of view offered to the

---

[7] Linda Young here makes reference to the idea expressed in Weber's essay 'Class, Status, Party' (Gerth & Mills, 1946:188), that 'the development of status is essentially a question of stratification resting upon usurpation. Such usurpation is the normal origin of almost all status honor'.

audience by the camera was a "royal one". It was almost as if the spectators saw through the royal eyes (Friedberg, 1993).

Natural history films as true records of nature

When Kearton started showing his films to the British public in the early 1910s, cinema was increasingly conceived, in line with the late Victorian middle class taste for rational leisure and self-improvement, as a potential medium for the education, thus the moralisation, of 'the public' (Chanan, 1996). Claiming that his films were educational (Kearton, 1936) and contending that 'a collection of cinematograph pictures dealing with animal life should be placed in every important museum' (Anonymous, 1913), Kearton meant that his 'true records' of animals, 'as they live when they have no idea that they are observed' (Kearton, 1936:292), should contribute to this movement of public education and moral uplift. But this necessitated that he appeared trustworthy. Such a result was achieved by drawing on the codes of bourgeois morality, engaging in the natural history twin pursuits of collecting and display, and highlighting one aspect of his relation to the natural world: intimacy.

Self-sacrifice for the common good

Newspapers appear to have played an important role in this process. Never questioning his reliability, they appear to have diligently co-operated in the fashioning of his personal identity (Shapin, 1994). The way they portrayed Kearton left little doubt as to the fact that his previous occupation as a natural history photographer, and the credibility achieved through it, was the source of his trustworthiness. For instance, in October 1910, the *Daily Mirror* printed pictures extracted from films taken during the second expedition to Africa, with the caption:

> 'Mr. Cherry Kearton, whose photographic contributions to natural history science during the past twenty years are so well known, has just returned from British East Africa' (Anonymous, 1910).

This caption encapsulates the two themes involved in the public assertion of Kearton's reliability as a source of knowledge of the natural world. First, it

refers to his past activity as a bird photographer, thus allowing to recycle the entire repertoire of values and beliefs previously mobilised in order to support the photographer's claims to credibility. And implicitly it suggests that, like his bird photographs, his films contribute to the growth of knowledge. And their credibility and cognitive value is guaranteed by the patience, courage, self-sacrifice and self-restraint (all notions previously associated with the feats of the bird photographer) which have been poured in shooting them.[8] For example, a report in *The Daily Mirror* emphasises that it took eight days to secure 'the first film ever of tiger in the jungle [...] at a distance of fifteen yards' (Anonymous, 1911a), or another in *The Times* underscores the bravery of the cinematographer:

> 'The pictures [...] are fitting reward for the courage of the photographer, who stood his ground even when the rhinoceros was charging in all directions within a few yards of the camera.' (Anonymous, 1913a).[9]

Collecting and displaying specimens

The second theme which is mobilised is that of travel, and more precisely the stated finality of Kearton's travels. Reviews of Kearton's cinematographic exhibitions refer to him as 'a daring traveller' (Anonymous, 1924a) and his films as conveying 'to the armchair spectator some impression of what life of the plains and jungles really is' (Anonymous, 1912).[10] Besides the notion, already hinted at earlier in this chapter, of the film as a participatory device, this theme of travel also points towards a practice central to the culture of

---

[8] And identified by Daston and Galison (2007) as the type of evidences provided in order to support claims to 'mechanical objectivity' for they all signal a successful repression of 'the willful intervention of the artist-author' (p.121)

[9] It should be remarked that this comment makes little sense given that a rhinoceros charges straight on. As noted by big game hunter Denis Lyell in his memoirs: 'Some of these "charging" photographs give themselves away at the first glance, as the beast is seen at an angle, whereas a real charge is straight on, if photographed from the front. Of course a charge at someone else could be taken from the side, but one does not often see that kind in books or magazines.' (Lyell, 1923:157-8).

[10] This observation is reminiscent of what was said of zoological gardens in the late 18thC century as places where travellers' accounts about remote places could be verified: 'Voyagers will no longer have the exclusive privilege of observing living nature' (Burkhardt, 1999:491).

amateur natural history, the collection of specimen and their display in places like cabinets of curiosity (see Chapter One). To Kearton, all his travels were collecting expeditions:

> 'Having succeeded in adding thirty feet of film of bison to my collection, I turned my attention to some butterflies feeding on a solitary flower by the side of the water-hole.' (Kearton, 1923:263)

The footage thus collected was subsequently edited, and re-edited at will, to appear in various compilations. And the same footage could be included in several "films" separated sometimes by more than ten years. In this regard one example is telling. In 1913, Kearton showed at the Palace Theatre in London a collection of footage titled *Nature's Zoo*. The reviewer from *The Times* describing the event was particularly impressed by images of

> 'a python gliding along a horizontal branch and taking up its position over a river where the animals are likely to assemble' (Anonymous, 1913).

Thirteen years later, in 1926, the reviewer of another of these compilation, this time titled *Jungle Pictures*, was similarly enthusiastic about

> 'a wonderful "close-up" of a 17ft. python slithering along a low branch overhanging the game trail to a water-hole' (Anonymous, 1926).

Similar observations could be made with footage of, for instance, an orang-utan in Borneo or a tiger in India, both reviewed in 1912, 1913, 1923 and 1926, each time as if they were complete novelties (which they were not since Kearton had only travelled once to these regions, in 1911).

A characteristic common to all the compilations where these sequences repeatedly appeared was that they were devoid of any internal narrative thread[11], which was emblematic of the conception of cinema deeply rooted in the popular culture of the music hall and the amusement park which dominated film-making before the First World War and which Tom Gunning (2004) calls

---

[11] Narration was provided by Kearton during the projection of the film. On such occasion, he would narrate his travel, explaining the circumstances surrounding the taking of such and such picture, or footage.

the 'cinema of attractions'.[12] Its principal feature was to be non-narrative and based on 'its ability to *show* something' (Gunning, 2004:39). In the words of Alison Griffith (2002:143), this was 'a mode of address in which the act of display is explicitly foregrounded'. As much as Kearton's practice of filming amounted to that of collecting specimens, each of the footage he displayed could be considered as "*naturalia*", as were named the natural objects exhibited in early modern cabinets of curiosities. And in the same way as displaying these *naturalia* was a measure of the power and influence of whom exhibited them, claiming authorship for these moving images was a means for Kearton of demonstrating his 'property of skill', hence appearing as someone able to control nature, and thus trustworthy (Secord, 1994b; Morus, 1996). Furthermore the point could be made that the repeated footage, shown in different places and at different times, ends up standing for the thing it represents itself. In a sense, the repeated image becomes nature's true type. And the film-maker becomes someone able to exhibit the essence of nature, and for this reason someone who can be trusted as a reliable producer of 'true records' of nature.

Becoming intimate with nature

When allowed by *The Times*, as '[a man] of authority to record [his] own impressions and to speak freely of those aspects of the films with which [he] is particularly concerned' (Anonymous, 1929), Kearton clearly distinguished between trustable nature cinematographers and those whose images should not be regarded as representing the truth of nature:

> 'Anyone who has seen my pictures will remember that the animals that I photographed were not aware of anything near them, their behaviour

---

[12] Gunning uses this category to analyse the cinema principally produced between 1896 and 1906, arguing that the conception of cinema as a story telling medium progressively overtook the cinema of attractions between 1907 and 1913. However, Gunning also suggests, 'the cinema of attractions does not disappear with the dominance of narrative, but rather goes underground, [...] more evident in some genres [...] than in others' (Gunning, 2004:38). The suggestion made here is that one of these genres is the cinema of natural history, which remains 'a way of presenting a series of views to an audience, fascinating because of their illusory power [...] and their exoticism'(*Ibid.*), rather than just a way of telling stories through a character-based situation.

being as unsuspicious as that of English cattle at a pond. It is this naturalness in a picture that is the test of the photographer's success. If a film shows animals alert, watchful, and suspicious, it is sure proof that the photographer was not properly hidden.

Many novices condemn the hide-up, declaring that it does not deceive the animals. But of course building "hides" is an art in itself, and where a "hide" does not achieve its purpose, it is because it has been clumsily built and is easily noticeable' (Kearton, 1929a).[13]

A good natural history film-maker is therefore someone whose intimate knowledge of nature translates in superior hidemanship. That is the ability to blend in the landscape so as to become almost a part of it and be ignored by the animals. Good hidemanship is what allows one to observe animals over long periods of time and in this way discover aspects of their intimate existence.[14] Recounting his adventures in the many books he published to accompany the release of his successive films, Kearton thus provides several illustrations of this classical natural historical precept transposed to natural history film-making, that genuine knowledge of the animals, translated into pictures where they appear behaving authentically, originates from spending countless hours observing them without being seen. For 'patience is the animal photographer's chief attribute, and waiting is never tiresome when it provides an opportunity

---

[13] This quote clearly points towards the notion that in order to be truthful to the public it is necessary to deceive the animals. This is reminiscent of the notion of the habituation of animals practised by field researchers (see for example Rees, 2006a; 2007b). To be able to observe natural behaviours, analysts have first to habituate animals to their presence and second to make animals "forget" that they are here. This idea of deception also points towards one of the tenets of natural history film-making which is that the film-maker, in order to represent truthfully to the audience the behaviour of animals, to be 'true to nature', is allowed to deceive the public by staging some sequences or editing them (Parsons, 1971).

[14] A similar exhibition of the ability to be ignored by the animals is discussed in Chapter Five in the context of the BBC series *Big Cat Week*. In her discussion of popular accounts by field primatologists, Amanda Rees points towards the facts that students of primates in the field 'hoped to become an expected part of the animal groups' landscape, but still a part of the group's *social* landscape – not a rock, or tree, or an invisible monitor, but another organism, whose movements must be attended to and apprehended' (Rees, 2007:886). The field researcher is interested in piecing together the intricacies of the social life of great apes, whilst the natural history film-maker is preoccupied with collecting and displaying images of animals unsuspicious of human presence. In one case observation is a means of answering questions about the natural world, in the other observation is an end in itself.

for the most interesting of all studies—that of animal life' (Kearton, 1929b:97). Authority is created through providing evidences of the accumulated time spent observing in the field, and the intimacy with nature gained from it.

One of these evidences is the ability to distinguish between friend and foe in the animal kingdom:

> 'Often, while wandering through short bush, I have suddenly seen a streak of spotted yellow bounding into the open a few yards ahead, and have pulled up short, ready to defend myself from what I imagined to be a leopard: and then I have seen the very slight differences and have known that I faced, not my enemy the leopard, but my friend the cheetah.' (Kearton, 1929b:165)

This theme of the human being befriending African animals runs throughout Kearton's career as an important strategy to suggest his trustability. And as we will see in what follows, the notion of 'friendship' signals the development of the theme of intimacy with relation to claims to trustworthiness. Its significance is perhaps best exemplified by the titles of some of the books he published along the years: *My friend Toto* (1924), *My animal friendships* (1928). Amongst these animal friends was a female chimpanzee, called Mary, in the company of which Kearton used to appear on stage, in the 1920s, as an interlude during the projection of his films. In his autobiography, Kearton refers to the animal in very affectionate terms, 'a real friend' (1936:274), which he used to talk to and play with. Yet, this was a friendship of a very definite kind, one where the roles and hierarchies were clearly set. This was typical Victorian pet-keeping (Ritvo, 1987). On stage the chimpanzee was made to perform tricks like smoking cigarettes, or drinking tea (Anonymous, 1926). Kearton, certainly, was not the first to exhibit exotic live animals to the British public. This kind of performance was a regular feature of public entertainment in imperial Britain, where exhibiting the ability to domesticate, keep alive, and teach tricks to an exotic wild animal were so many demonstrations of power and control over the natural world. And the specific case of Mary the chimpanzee is inevitably reminiscent of other chimpanzees exhibited in British zoos in the 1880s and 1890s and similarly performing human like behaviours (Ritvo, 1987). However, although special ones, often the zoos' mascots, these

apes living in cages were still captives amongst others. By contrast, Kearton's Mary was presented as a member of the film-maker's household. At one point Kearton refers to her as 'a deaf and dumb child' (1936:275) who, when she was ill, was 'nursed', lying in his 'wife's arms' (*Op. Cit.*:274).

This introduction of the emotions associated with pet-keeping in the repertoire of evidence for the film-maker's credibility in speaking for the natural world, seems to be one of Kearton's important contribution in terms of the construction of the natural history film-maker's identity. As the following chapters will suggest, the history of natural history film-making in the post-war period is crowded with examples of natural history film-makers exhibiting their animal friendships as an effect to support their claims to trustworthiness.[15] Elaborating on this theme of animal friendship, Kearton uses it, for instance throughout the book in which he addresses successively all the major representative of the African charismatic megafauna (Kearton, 1929b), and compares them according to their degree of friendliness. Amongst the friendlier are, as we have already seen, the cheetah, who 'in the wilds is not tame, but he is certainly not fierce, and no one who cares for animal life could possibly wish him harm' (Kearton, 1929b:167). On the opposite end of this scale is the crocodile, which has 'no charm about [him] […] no virtues in him to report' (*Op.Cit.*:125). In between lie almost all the other animals, presented as peaceful unless attacked and mostly driven by fear rather than by aggressiveness. Of the gorilla, for instance, it is said that '[a]ll the stories of a beast that beats his breast and roars are of a harmless creature only roused to fury in defence of his home' (*Op.Cit.*:139). Using such criteria to compare animals and classify them is in almost complete contrast to another scale, the one used by imperial big game hunters who compared animals 'according to […] the degree of danger they posed to the hunter' (Ritvo, 1987:267). This inversion is in line with the tenet placed at the centre of the ethics of natural

---

[15] Yet, after Kearton, this kind of exhibition was refined. As we will see in Chapters Five and Six, a further degree of self-restraint was added to this theme of animal friendship in that natural history film-makers exhibits the emotions of pet-keeping, but at the same time demonstrate their capacity to resist these emotions in order to acquire unadulterated natural historical knowledge.

history film-making as elaborated by Kearton, the notion inherited from the Victorian culture of bird watching that killing wild animals is both undesirable and unnecessary, thus allowing us to analyse the development of natural history film-making as an usurpation by the middle classes of aristocrats' big game hunting grounds, and as an instance of the reversal of values associated to the encounter with nature.

So far, we have been considering the way in which Kearton fashioned himself, and was fashioned, as one—and perhaps the most prominent—of the first public figures of natural history film-making in inter-war Britain. In so doing Kearton, who can be considered as the 'artful creator of a new identity assembled out of the materials his culture offered someone like him' (Shapin, 1994:130), provided those who followed with a definite set of social scenarios to use and of public expectations to meet if they wanted to look like credible natural history film-makers. In the first place, they would have to stand as credible naturalists, exhibiting an unambiguous allegiance to the beliefs and values of the late Victorian amateur culture of natural history, foremost amongst which is the notion that the encounter with nature happens on an aesthetic level and should result in the production of genuine knowledge of the natural world. These natural history film-makers would assert their authority to speak for nature by providing evidence of their intimacy with the natural world, demonstrating for instance the ability to effectively blend in the landscape, becoming part of it through superior hidemanship, or displaying the capacity to befriend individual wild animals. As naturalists, they would also appear as travellers to exotic and perilous places. At the same time, they would have to provide evidence of their mastery of the film-making technology, and be consummate showmen, actively engaging their audience through performances owing as much to their film work as to their personality.

Kearton was active until his sudden death at 68, in 1940, following a stroke on the staircase outside the BBC broadcasting house in London, where he had just broadcast a natural history radio programme for *Children's Hour*. During the Second World War, natural history film-making in Britain came to a halt and only resumed in the early 1950s. Although some natural history films made for

the cinema were imported to Britain from the United States, principally, but also from continental Europe, and exhibited in cinemas[16], the British practice of natural history film-making did not resume as part of the cinema industry but became part of the development of television. Amongst the earliest participants was a young David Attenborough, who engaged in the making of the series *Zoo Quest* in 1953. In the remaining of this chapter we will examine how Attenborough fashioned his identity as a credible natural history film-maker, in the light of the conventions previously established by Kearton.

Walking in Kearton's footsteps

Between 1954 and 1961, eight *Zoo Quest* series were broadcast on the BBC. When the first programme started, Attenborough was a 28 years old programme producer at the newly formed Talks Department of the BBC television. A graduate from Cambridge, with a zoology degree, he had never been a scientific researcher, neither had he any connections in the post-war British milieu of natural history. Yet, in 1957, on the grounds of his work with *Zoo Quest*, Attenborough was offered to head the newly established BBC Natural History Unit. And in 1960, for the same reason, he contributed to *The Second BBC Naturalist*, a collection of natural history essays (Hawkins, 1960) authored by famous and well respected naturalists such as Peter Scott or James Fisher. In his essay titled 'Hidemanship' (Attenborough, 1960), Attenborough described how whilst filming *Zoo Quest in Paraguay* (the fifth series) he and his cameraman constructed a hide 'we had camouflaged so well that it was almost undetectable' (p.25), and the various pictures of birds they could take thanks to their hidemanship. The theme is obviously reminiscent of Kearton's insistence on the fact that a good natural history film-maker is one who knows how to build proper hides (Kearton, 1929a). *Zoo Quest* thus appears foundational in terms of Attenborough's identity fashioning as a trusted

---

[16] This was the case in particular of the famous Disney series *True Life Adventures* (although some were broadcast by the BBC in the late 1940s) and of the films made for the American Studio RKO by the Belgian cinematographer Armand Denis (Bousé, 2000; Mitman, 1999)

television naturalist. It should perhaps be added that for that matter, the role played by the series appears twofold. On the one hand it allowed Attenborough to construct for himself the public figure of a credible and trusted natural history film-maker. On the other it allowed him to demonstrate enough skill at successful programme making and at institutional politics to become head of the television channel BBC2 in 1965. This latter aspect will be addressed in the next chapter. For now, we will examine *Zoo Quest* with a special focus on its construction and what it can teach us with regard to the fashioning of the natural history film-maker's identity.

At the outset, several features exhibited by *Zoo Quest* appeared to break with the tradition established by Kearton. The role of the cameraman was dissociated from that of the film-maker, and the trustworthy character was to be the animal collector, Jack Lester, not the film-maker. In particular, Attenborough was not to be seen, neither on the films nor in the studio:

> 'there could be compiled four to six 30-minute programmes consisting mostly of film but introduced by Lester from the studio. At appropriate points – for example after seeing the setting of a trap and the successful capture of an animal – the viewer could be returned to the studio to see in close-up the actual creature he has just seen on film, and Lester could tell how the creature fared on the voyage back, and mention any other interesting details about it.'[17]

There also seemed to be a desire to differentiate this programme from Kearton's earlier films, as well as from those who, in the late 1930s, had started to follow his example of filming East African charismatic megafauna and were still active in the early 1950s.[18] In the press release announcing the

---

[17] Attenborough to Mary Adams, 31 July 1953, BBC Written Archives Centre (WAC) Folder T6/444/1

[18] This is in particular the case of Armand and Michaela Denis who made their debuts on British television on 5 October 1953, with a presentation of their film *Below the Sahara*. Denis noted later in his autobiography: 'The public response was quite extraordinary. […] A week or two later, at the request of Cecil Madden of the BBC, we did another half-hour programme […] and on the strength of these two short appearances on television it seemed that we had become famous. The BBC offered us a contract that would mean giving up film and concentrating all our time on television.' (Denis, 1966:277). Their films, principally shot in East Africa, were considered during the 1950s and early 1960s as archetypal of wildlife film-

expedition, Attenborough clearly emphasises the difference between the flora and fauna which would be seen in his *Zoo Quest* programme and what was shown in films taken in East Africa:

> 'The country is very different from the rolling plains of East Africa covered with large mammals like the giraffe, antelope, lion and elephant. Sierra Leone is mostly thick forest and though the animals are very much smaller, they are, in their way, equally dramatic and have the advantage of being much less known than the East African animals. Many of the smaller creatures, ants, scorpions, rare frogs and so on have hardly, if ever at all been filmed and it is upon these that the expedition will concentrate.' [19]

Finally, the principle of the series, as laid out by Attenborough in 1953, was that a BBC team composed of himself as a producer-director and a cameraman would follow an animal collector sent to the tropics by the London Zoological Society in order to capture animals for the zoo's collection.[20] To the public, the expedition was presented as a scientific one, set up by the Zoological Society, accompanied by the BBC.

However, if the programme is apparently actively differentiated from its predecessors, both in terms of its conception and of its intention, *Zoo Quest* appears rather Keartonian. First it was meant to be exclusively based on travels to exotic countries, and its main intent was to show films of animals behaving unsuspicious in their natural surroundings. The travel narrative would allow the footage of the various exotic animals seen during the trip to be coherently exhibited to the audience. With *Zoo Quest,* natural history film-making was thus once again associated with the natural historical practice of collecting and displaying. Second, the focus on the "micro fauna"[21], and in particular insects,

---

making, and were hugely popular in Britain. In 1960, Julian Huxley endorsed Armand Denis' work describing his 1938 film *Dark Rapture* as 'the finest African nature film ever made' (quoted in Mitman, 1999:188).

[19] Attenborough to Television Publicity, 4 August 1955, BBC WAC Folder T6/444/1

[20] Attenborough to Mary Adams, 31 July 1953, BBC WAC Folder T6/444/1

[21] A recurring theme in the *Zoo Quest* programmes and a pervasive one along Attenborough's career. See for instance the series *Life in the Undergrowth* (2005)

firmly roots the programme in the culture of amateur natural history. One "star" sequence of the first *Zoo Quest* was one which showed a column of drivers ants attacked by squads of fire ants:

> 'Ants are probably the most plentiful insect in Africa, or the world, for that matter, and numerous interesting films were made of several species. […] The expedition's films show the dramatic disorganisation of the driver ants' phalanx when a few fire ants are thrown into the rushing stream.' (Matthews, 1955).

Now, insects, because of their diversity and their ubiquity, are amongst amateurs naturalists' favourite fields of investigation, and entomology is one field where many a distinguished naturalist has made a name (Hoolerbach, 1996; Allen, 1994). Placing the emphasis on such ordinary creatures therefore installed *Zoo Quest* within the tradition of amateur field natural history, in contrast to the elite tradition of big game hunting in Africa, to which most of the spectacular nature films of the 1950s were related, as well as the Western movement for conservation in Africa (MacKenzie, 1988). Similarly, the programme was advertised as the quest for a rare bird,[22] and many sequences were about birds. Ornithology was, of course, another of the traditional fields of amateur natural history. Attenborough's *Zoo Quest* can therefore be seen as participating in the same logic and completing the movement initiated by Kearton. The latter imported the Victorian middle class values of compassion and stewardship towards animals associated with amateur natural history on the hunting ground of elite big game hunters. Attenborough transferred some of its flagship practices, ornithology and entomology, to the same location. A last aspect of the preparation of the first *Zoo Quest*, the choice of cameraman, also suggests a will to embed the making of the programme in the culture of amateur natural history. Attenborough justified his choice of Charles Lagus as follows:

---

[22] *Picathartes gymnocephalus* or White-necked Rockfowl, although Attenborough in his account for the first series suggests that there is no common name for this bird (Attenborough, 2003; 1958), which all along the programme was referred to using its Latin name. This could of course be analysed as a demonstration of cognitive authority of the most blunt kind.

> 'He is an experienced animal and bird photographer who has just returned from the Daily Mail Himalayan expedition where he was acting as assistant cameraman to Tom Stobart.'[23]

The Daily Mail Himalayan expedition mentioned here was not another climbing trip, but was the Daily Mail "Abominable Snowman" expedition, organised and financed by the tabloid 'in an attempt to solve the great mystery of the Himalaya – the identity of the Yeti, or Abominable Snowman'.[24] Brian Regal (2008) usefully points towards the significance of this kind of expedition in the context of the divide between amateur naturalists and professional life scientists. Since the 1920s, with a strong revival in the early 1950s, the search for the Yeti, or monster hunting, had been the stronghold of the amateur naturalists 'wearing [their amateur status] as a badge of honour […]. Far from being intimidated by the academics, these men argued that the lab-bound eggheads were woefully ignorant of what was going on out in the woods' (Regal, 2008:55).[25] In the press release announcing *Zoo Quest*[26] and describing the objective of the expedition, Attenborough plainly plays on that register:

> 'This bird, Picathartes, until recently was known only by a skin which had been purchased from an African many years ago and sent to the British Museum. It was from this skin that the bird was named and reconstructed. It had never been seen alive by a European until 1949 when J.W. Lester of the London Zoo […] discovered a colony of this

---

[23] Attenborough to Miall, Head of Talks, Television, 21 July 1954, BBC WAC Folder T6/444/1. Attenborough's choice was in complete opposition to the recommendations of the BBC's film department pointing towards a professional cameraman.

[24] From an undated press clip from the *Daily Mail* (probably 1953) announcing the expedition.

[25] The *Daily Mail* 1954 Abominable Snowman Expedition is an example of what Regal describes as an attempt on the part of amateurs and scientists to come together in the hunt of 'anomalous primates'. Such attempts, as is the case with this one, ending with the scientists using the lack of tangible results to argue that amateurs were unreliable dreamers and reinforcing the amateurs' resentment of scientists (Regal, 2008). In the press clip from the *Daily Mail* quoted above it is indicated that 'Dr. F Wood Jones, F.R.S., F.R.C.S., D.Sc., curator of the Hunterian collections of human and comparative anatomy in the Royal College of Surgeons, has kindly offered to identify any specimens that may be obtained […] All such material will be submitted to him for critical analysis' (n.s., n.d, *Daily Mail*)

[26] Attenborough to Television Publicity, 4 August 1955, BBC WAC Folder T6/444/1

> extraordinary creature. […] The primary aim of this year's expedition is to rediscover the nesting sire [sic] and film the bird throughout its life history.'

In its conception as well as its presentation to the public, *Zoo Quest* can be tied back to the amateur tradition of natural history, and in that sense situated within the legacy of Cherry Kearton's natural history film-making. Filming was presented as a collecting and display activity, two notions foundational to amateur natural history, the chief concern of the programme was about subjects which were specialities of amateur naturalists, birds and insects, and emphasis was put on field skills rather than laboratory ones.

In fact, as will now be considered, Attenborough himself can be seen as a Keartonian figure. He spent far more time in front of the camera than anticipated, thus appearing as responsible for the programme. Initially, it was planned that Jack Lester, the zoo-collector, would present the programme: his inability to do so (as we will shortly see) opened a public space within which Attenborough could stand as the author of the programme's content. Becoming the storyteller, it was his experience he transmitted (Benjamin, 1936). Suddenly made accountable, he needed to appear credible. In this process much of the materials laid out by Kearton as elements from which to construct the identity of the natural history film-maker were recycled. In particular, like Kearton, Attenborough emphasised his intimate relationship to nature in order to support his claims to credibility and his working in the public interest.

Fashioning Attenborough as a Keartonian figure

After the first episode of *Zoo Quest to Sierra Leone*, it became evident that Jack Lester would not present the next one. 'Jack Lester was an excellent zoologist, but turned out to be a poor television presenter. […] He got everything wrong on the live transmission, and that also made him tongue-tied'(Miall, 1994:181). Attenborough thus assumed the role of the studio presenter, narrating the expedition, explaining the morphological characteristics of the animals, how it demonstrated their adaptation to their habitat, and the circumstances of their captures. His performance received 'an

exceptionally high rating for a Talks programme'.[27] Part of this success was attributed to a young female chimpanzee, "Jane", which

> 'On transmission, as soon as she saw her familiar friend David, [...] clung round his neck and refused to budge throughout the programme. The sight of this sweet little frightened chimpanzee hugging her handsome young protector caused the whole television audience to 'ooh' and 'ah'.' (Miall, 1994:182)

Attenborough was thus seen re-enacting, in the second episode of the first *Zoo Quest* series, one of Kearton's signature acts, the exhibition of what appeared to the audience as an affective relationship to a chimpanzee.[28] Such a display of trust by the animal towards the performer signalled that the presenter could be believed as a trustworthy go-between, a bridge-builder between the realm of animals and the human sphere (Serpell & Paul, 1994), thus asserting his cognitive credibility.

However, although he appeared to elicit trust in animals, Attenborough could not pretend to have authority in the matters discussed on the programme. Cognitive authority was still brought to the series by an institution external to the BBC, the London Zoological Society, but this was about to change. And the second series can be analysed as the staging of Attenborough's education so as to make him able to speak for himself as a trusted naturalist and not simply report on the actions of the zoo collector. This second series is therefore a transitional one, for, as we will discuss next, the third series was organised under the entire responsibility of the Corporation, the Zoological Society having withdrawn its support.

---

[27] Miall to Attenborough, 19th January, 1955, BBC WAC Folder T6/444/1

[28] The role of the physical contact with great apes in establishing the credentials of credible spokesperson for the natural world has been highlighted by Donna Haraway (1989). It is notable that a similar intimate physical embrace with great apes features in another landmark of Attenborough's career as natural history television presenter, the famous sequence with the gorillas in the 12th episode of the series *Life on Earth* (1979).

Displacing scientific authority - The education of a television naturalist

Zoo Quest to Guiana, the second expedition, differs from the first one in several aspects which all appear to converge towards presenting Attenborough as an active participant rather than the silent witness he had been during the first trip. First, whilst abroad, Attenborough published three long articles in *The Times* informing the British public of the expedition's whereabouts, and a fourth one when back home.[29] Attenborough, clearly identified as the author of these articles, uses the pronoun "we" to report on the actions of 'a team of zoologists'. Second, in the early stages of the expedition it became Attenborough's responsibility to catch the animals. Lester had broken ribs, which prevented him from active participation for the rest of the trip. Attenborough therefore became an actor in the knowledge-production enterprise, which required him to receive 'an education in forest lore' (Attenborough, 1958:39).

For instance, in the opening episode the viewers were shown the capture of a sloth.[30] The sequence opened with Attenborough being led by Lester towards a tree. Then Lester pointed his finger at something up in the tree, and Attenborough's voice over commentary went:

> 'Then, suddenly, Jack spotted, almost hidden in the branches of a tree, a mysterious moving smooth shape. It was one of the most extraordinary and fantastic animals in the world: the sloth.'

Attenborough could then be seen climbing up a tree, capturing the sloth and passing it to Lester, who put it in a bag, whilst Attenborough explained in the commentary that the capture was an easy task. The same stories were told in the book published shortly after broadcast. The text, to some extent, could therefore be read as a sort of *bildungsroman*, the first half containing several accounts of how Attenborough's senses of sight and smell were educated.[31]

---

[29] Attenborough, 1955a; 1955b; 1955c; 1955d

[30] Available online at www.wildfilmhistory.org/film/240/Zoo+Quest+to+Guiana.html

[31] In her discussion of the social relationships that occur in primatological research field sites, based on interviews with field primatologists, Amanda Rees highlights the fact that local field assistants 'have made major, though little acknowledged, contributions to educating the

> ' "Is there anything up there, or is it my imagination?" he said softly. I could see nothing. Jack explained more carefully where I should look and at last I saw what he had spotted' (Attenborough, 1958:84)

The second *Zoo Quest* was an important episode in the fashioning of Attenborough's identity. He had emerged from the first programme as an appealing performer, the second one brought him the credentials of a credible naturalist. This transfer of cognitive authority from the zoo's collector to the television presenter appears emblematic of a transition from the zoo to the television screen as the place where to see exotic animals alive, in post-war Western societies.

Such an evolution appears to be actualised in the third *Zoo Quest* programme, based on an expedition to Indonesia. Whereas the two first expeditions led to an exhibition of the prize animal in the zoo, where spectators could go and see it, the BBC team could not bring back a Dragon of Komodo to the London zoo[32]. The television screen was therefore the only place were the audience could see the giant lizard alive. *Zoo Quest for a Dragon* was a landmark, for, this time, the Zoological Society having expressly asked not to be associated, the expedition was left entirely to the responsibility of the BBC. The analysis of this separation will allow us to highlight some aspects of the relationship between natural history television and scientists in the early post-war period.

Establishing natural history film-making as a culture of knowledge-production

The withdrawal of the Zoological Society coincided with the establishment, in 1955, within the Regent's Park Zoo, of a television unit staffed by Granada

---

scientists themselves. [...] Recalling how the guard taught him to move through the bush and how to identify animals and plants, [a] researcher described himself as 'a First World expatriate coming in, being trained by Tanzanians.'' (Rees, 2006a:325-326). This usefully points towards the fact that the BBC natural history film-makers tend to maintain with field scientists a relationship which places them in the position of holders of a local knowledge, as opposed to the claims to universality commonly associated with the pursuit of scientific knowledge.

[32] The Indonesian government had opposed an exportation of the animal to Britain.

Television and in charge of generating zoological output.[33] The head of this unit was Desmond Morris, who presented *Zoo Time*, flagship programme where captive animals were presented to the audience from a studio (Morris, 1979). This decision, on the part of the Zoological Society, to establish its own television unit within the zoo boundaries as soon as competition for television broadcasting opened, suggests that the control of television technology, and of its public output, was judged desirable. Given that twenty years earlier the same Zoological Society had considered it beneath itself to equip the zoo with its own film unit (Mitman, 1999), one can wonder what led to this change.

It could be suggested that the zoo wanted to follow the successful example set by the American television programme *Zoo Parade* which, in 1952, attracted to the Chicago zoo 4 million visitors hoping to see in the flesh the inmates which had become television celebrities (Mitman, 1999).[34] But, as reveals a letter from the curator of the monkey house, Attenborough's *Zoo Quest* was quite efficient in the matter:

> 'My Dear David,
>
> Thought you should know […] what a most favourable impact "Charlie's" personality has made with T.V. viewers since his debut. Over the past week-end the constant enquiry was to see "Charlie", impossible for the time being of course but many other persons were pointing to our "Alex" and were quite happy to think they had seen Charlie in the flesh.'[35]

---

[33] It also coincided with the replacement at the position of secretary general of the Zoological Society of Leo Harrison Matthews by Sir Solly Zuckerman. Whereas the former had strong ties with the British milieu of amateur field naturalists, the latter did not, and was even doubtful with regard to the relevance of fieldwork as opposed to observations in controlled environments (Burt, 2006).

[34] It could also be suggested that, given that twenty years earlier Julian Huxley's project of installing a film unit in the zoo had been judged by the governing council of the society contrary to 'the prestige of the Zoo as a learned society' (quoted in Mitman, 1999:75), there was a radical difference between the perception of cinema and that of television. The former was definitely equated with entertainment whereas the latter was rather seen as a means of reaching people in their home and providing them with what one thought they needed, or was good for them—or for the general interest, or the interest of the institutions.

[35] Smith to Attenborough, 10 October 1956, BBC WAC Folder T6/439/1. Kept in quarantine, Charlie could not yet be seen. The fact mentioned in this letter that members of the public cannot distinguish between individual animals, can be interpreted as the affirmation that

It is tempting to analyse the Zoological Society's refusal to lend further credit to the BBC's endeavour as motivated by a perception of the BBC as a rising rival institution. The Society therefore wishing to distance itself from the Corporation, and to re-appropriate the televised public discourse on nature.[36] In this context, the fact that the zoo was willing to pay the freight for the collection of animals captured by Attenborough suggests a tendency to see the BBC not as an equal participant in the scientific enterprise, but rather as an animal dealer, thus negating the BBC's potential rivalry. For, as noted by Anne Secord in her analysis of the relationship between artisan naturalists and gentlemen philosophers (1994a:394)

> 'within knowledge-making sites such as learned societies and with regard to knowledge claims generally, the gentlemanly ethos was vigorously maintained and 'traders in science' were not welcome. A request for money would have led a gentleman to doubt an artisan's motives; but equally, from the perspective of the artisan, payment would have comprised [compromised] his claim to be a worthy participant in natural history, since such money-based exchanges were not part of its proper practice.'

In addition, by proposing the deal—'we would be very happy to present the entire collection to the zoo on our return if you would pay the freight charges'[37]—Attenborough himself repudiated the gentlemanly ethos mentioned by Secord. He therefore had to resort to a different repertoire of evidences in order to support his claims to trustability. As we will see, this repertoire is that of the culture of amateur natural history, centred on the notion of empathy with

---

animals' experts such as zoo curators and natural history television presenters possess this skill to recognise individual animals. On the ability to recognise individual animals as an evidence of natural history knowledge, see Chapter Five.

[36] According to Desmond Morris (1979), competition for the audience between *Zoo time* and *Zoo Quest* was fierce, and Attenborough was his main rival.

[37] Attenborough to Matthews, 13 April 1956, BBC WAC Folder T6/439/1

animals.[38] In this context, the way in which capturing animals was presented to the public appears particularly revealing.[39]

Apart from a few captured in the wild by Attenborough, most were bought from Indonesians, and paid for with tobacco or salt (Attenborough, 1959). In the former case of the old fashioned brutal capture by Attenborough of a wild creature, he claimed to have developed afterwards affective bonds with the animal and to have been be preoccupied with the creature's well being :

> 'We became very attached to this little creature and kept him in a large wicker basket in the cool shade of the ship's canopy. Every morning and evening we lowered him into the river to give him a bath. Our affection for him grew as we journeyed along the Mahakam' (Attenborough, 1959:96)

When animals were bought from local people, the story became that of a rescue. This is particularly visible in the case of two young animals, a bear cub, and an orang-utan which were to become the animal heroes of this expedition. Benjamin, the bear cub, was an orphan found in the forest by a local hunter,

> 'The babe was barely a week old for his eyes were still closed […] Charles hurried aft and prepared some diluted condensed milk in a feeding bottle while I rewarded the man with cakes of salt' (Attenborough, 1959:102)

Viewers of the programme were entertained with images of Attenborough feeding the bear cub with a bottle like an infant.[40] Similarly, the narrative of the

---

[38] This appears to be the actualisation, in the specific case of *Zoo Quest*, of an evolution which took place during the whole first half of the 20thC in the milieu of natural history and which accompanied the slow rise of a growing interest for the study of behaviour as opposed to that of morphology (Kohler, 2006). Anne Larsen Hollerbach (1996) makes a similar point in her study of the shift from collecting to observing in British entomology from 1800 to 1840, and emphasises the extent to which this shift was accompanied with the emergence of concerns for the humane treatment of animals. It should be emphasised that when the first *Zoo Quest* was planned, the London Zoological society had not set up collecting expeditions for a while (Attenborough, 2003).

[39] The "concept" of the programme remained that some of the animals seen in the films would be exhibited live in the studio. Furthermore, the team needed to capture the animals in order to film them in close-up (Attenborough, 1959).

[40] A full page in the *Daily Mirror* described how Lagus brought back Benjamin the bear to his home in London, where his wife bottle fed him together with their daughter. (*Daily Mirror*, 11 September 1956:11)

orang-utan Charlie is one of Western stewardship. When Attenborough first encountered Charlie, he was squatted inside a wooden crate, very frightened and aggressive, kept by an animal dealer who referred to him with 'an expressionless voice' (p.115). As soon as the ape had been bought 'for all our remaining salt and tobacco' (p.116), the first task was 'to transfer him from his original cage to a bigger better one' (*Ibid.*). Then, the ape settled down and

> 'Soon he was not only tolerant of my fondling but actively sought it. If I passed his cage without stopping to talk to him he would call sharply to me. […] I was anxious to let him out of his cage […] so that he should get some exercise […] Charlie, however, refused to come out. He seemed to regard his box not so much as a prison but as a house' (Attenborough, 1959:117)

On the boat, 'if he began to misbehave himself, [the crew] dared not be firm with him but called to us [Attenborough and Lagus] for assistance' (p.118). As much as the description of the circumstances of the acquisition of the orang-utan suggests a difference of appreciation of the exotic animals between Westerners and local populations, this last notation distinguishes Westerners from locals in terms of authority over the animals, and of the ability to produce knowledge of them.

Back in London, as the letter from the curator of the monkey house quoted above indicates, visitors flocked to the zoo to see Charlie, bringing him presents such as eggs and re-enacting a scene witnessed in the television programme, where Attenborough was shown 'bribing' the ape back in its cage with an egg.[41] Because of their staged intimacy with Attenborough, these animals thus entered the moral community of humanity, even to the point where visitors (as with their own pets) wanted to feed them. As shown by Rees (2007b:896), 'such enculturation not only implicates the [animals], it pervades the process [of the production of knowledge of them] itself'. The enculturation referred to here is a reciprocal process, which involves humans entering into a relationship of mutual acknowledgement. It is what Donna Haraway designates

---

[41] Smith to Attenborough, 10 October 1956, BBC WAC Folder T6/439/1

'a dance of relating' (2007:25) which transforms all the participants and their perception of the world they live in.

Exhibiting his intimate relationship to the animals allows Attenborough to support his claims to knowledge-production. The relationship of mutual acknowledgement he has entered with Charlie has transformed him into a credible producer of knowledge of the orang-utan in particular and of the natural world in general. Providing members of the public with a model for intimately interacting with the animals, and producing for themselves knowledge of the animals, Attenborough enrolled the audience in his network (Latour, 1987).[42] Providing through his expeditions to remote locations an increase of public knowledge,[43] Attenborough became with this third programme the people's expert. He also became the first impersonation of the "telenaturalist", that is a naturalist who self-confidently practices natural history on the television screen, for television, and whose claims to cognitive credibility the audience is asked to accept partly on 'television and showbiz derived basis' (Tudor, 1981:152), notably 'a focus on personalities' (*Ibid.*).[44]

Recognised as a trustworthy mediator between the British public and the natural world, in no need of a trusted scientific institution to support his claims to cognitive credibility, Attenborough had become, as a television critic explained in *The Listener*, 'an indispensable 'front of the house man'' (Pound, 1956b). A measure of his status within the BBC, and of his reputation in the public, is undoubtedly the fact that he was offered, in 1957, to head the newly established Natural History Unit (NHU). Although he declined[45], Attenborough

---

[42] Attenborough, through his intimate relationship to the animals, socialises them, contributing to fabricate a 'collective' of humans and nonhumans whose cement is the knowledge of the animals generated by his performance (Latour, 1993). Chapter Five is the examination in further details of this mechanism.

[43] A creed central to the ethos of the BBC as a public service broadcasting and particularly in 1955-1956 when the concurrence of other television networks had been allowed.

[44] The term telenaturalist is constructed after Andrew Tudor's 'Telexpert': 'a loquacious, single-minded and infallible guide to right and wrong, truth and lies. [...] the telexpert is to lend us his framework; we are to see through his eyes. He is to tell the story and we are to listen' (Tudor, 1981:153).

[45] See Mc Givern to Director of television broadcasting, 18 March 1957, BBC WAC Folder T31/385

remained the face of natural history on the BBC, the equal to a Peter Scott.[46] His contribution to this field was seen as competing directly with that of the NHU, and often in the following years, Attenborough was asked to state his filming projects in advance, so that the NHU could adapt and avoid overlapping (Parsons, 1982). The head of the Talks department, for instance, concluded an arbitrating memo with these appeasing words: 'I am sure that, in view of the cooperative attitude of H.W.R.P and David Attenborough, there will be no problem here'[47]. Until 1961, there was one *Zoo Quest* a year, and the series gained Attenborough the reputation within the BBC of an inventive programme maker, able to attract large trusting audiences, which earned him to be named, in 1965, head of the newly established BBC2 (Briggs, 1995).

Conclusion

In this chapter we have begun examining the history of natural history film-making in Britain. Concerned with understanding what type of evidence natural history film-makers present to support their claims to expertise, and therefore achieve the authority to speak for nature, our study focused on two characters, Cherry Kearton as the creator of a distinctive genre in the early decades of the 20thC, and David Attenborough, as his successor, resuming natural history film-making on television after the Second World War.

In his practice of natural history film-making, which he called 'Big game cinematography', Kearton infused a lot of the values and beliefs of his own social world. His practice was deeply rooted in the late Victorian culture of amateur natural history and the strategies he employed to appear trustworthy were very much inspired by these values (Allen, 1994). His innovation was to provide this late Victorian culture with a new vehicle and thus offer the possibility of a new identity for its bearers, so much so that, as the next

---

[46] See Chapter Four

[47] Grace Wyndham Goldie, to controller programmes television, 8 May 1958. H.W.R.P designates Desmond Hawkins who was the Head of the West Region Programme, and who founded the NHU.

chapters will show, these values are still conveyed today.[48] An early example of this continuity is provided by the young Attenborough from the *Zoo Quest* series. His series can be tied back to the amateur tradition of natural history. However, as the analysis proposed here also indicates, Attenborough's venture in natural history film-making added a new dimension to the practice, that of expertise. Indeed, whilst Kearton never claimed to be an expert about animals, Attenborough, after the third *Zoo Quest*, publicly stood as one. One hypothesis explaining this difference would be that Kearton was a freelancer[49], whereas Attenborough was a BBC employee. In the next chapter, we will consider the development of the BBC NHU as a knowledge-producing institution.

---

[48] For example, in Chapter Five, the case study of the BBC programme *Big Cat Week*, specifically emphasises the role played by the display of emotional self-restraint in asserting the natural history film-maker's trustability.

[49] On the consequences of freelancing for a natural history film-maker's cognitive credibility see Chapter Six

Chapter 4

The BBC Natural History Unit, a knowledge-production institution

Cameras have revealed how elephants are
able to get a drink of fresh water when faced
with a stagnant waterhole.
A BBC team discovered that the tusked
giants use their trunks to delicately siphon
off clean liquid that has settled at the top of
the dirty pool.
The footage shows how the elephants
move incredibly slowly to avoid stirring up
any sediment.
The Natural History Unit team said this
was the first time that they had seen this
resourceful behaviour.

BBC Press release, 10 March 2009[1]

The epigraph above draws the attention towards the process through which the BBC Natural History Unit (NHU) came to be able to present its natural history film-makers as discoverers and natural history footage as discoveries, thus implicitly presenting itself as a producer of genuine knowledge of the natural world, without making any mention of the activities and works of scientific practitioners. Referring to the production of knowledge in the field, Henrika Kuklick and Robert Kohler note (1996:11) '[c]ultural appropriation and ambiguous identity go with the territory, so to speak, of the field sciences'. In the preceding chapter we saw how Cherry Kearton had successfully taken possession of the ground left vacant by a vanishing imperial hunting elite, and established the practice of natural history film-making as a socially and morally legitimate conduct to appropriate, control, and enjoy the Empire's wilderness. We then saw how David Attenborough had revived Kearton's project on British television in the aftermath of the Second World War, and

---

[1] Available online at http://news.bbc.co.uk/1/low/sci/tech/7932769.stm. I am grateful to Amanda Rees for pointing out this press release to me.

displaced the Zoological Society as the bearer of authority on animals in the field. In this chapter, focusing on the establishment of the BBC Natural History Unit, we will examine how natural history film-makers, in the period extending from the early 1950s to the late 1970s, set and maintained a frontier between their practice and field sciences, defining the NHU as a natural history institution, able to collaborate with field scientists but not subservient to them.

For one key feature of the period seems to have been the development of a publicly visible field science of animal behaviour. As studies in the history of ethology suggest (Burkhardt, 2005; Kruuk, 2003), the formation of this discipline can be seen as a late instance of what Lynn Nyhart (1996) analyses as the fragmentation of natural history and the reshaping of these fragments in the various disciplines of biological sciences. The founders of ethology turned the observation of wild animals behaving undisturbed in the field, a grounding principle of field naturalists' practice, into the methodological cornerstone of their pursuit. As Konrad Lorenz late in his life would note, in a book destined to a wide public, 'the only way scientists can make novel, unexpected discoveries is through observation free of any preconceived notions' (1979:5). As this chapter will demonstrate, the development of natural history film-making on British television, in the post-war period, can be seen as an attempt by naturalists to protect their culture from the threat posed by the development of the science of ethology, 'controlled by disciplined experts' (Secord, 1996:449).

The 'boundary work' (Gieryn, 1983) performed by natural history film-makers, telenaturalists, from the early 1950s on, focused on the notion of observation, and brought forward technologies of visualisation, television and the filming apparatus. It extended over several years and involved the making of several flagship programmes. The BBC's first step was to ensure an important and faithful public following for the practice of natural history on television by front staging the figure of a respected naturalist, Peter Scott, in the programme *Look*. This benefited from the social shaping of television in the early 1950s as a technology of public witnessing, as much as it contributed to it. In the 1960s however, appeared a need to implement a new strategy. The NHU had to face competition from both scientific practitioners themselves and

another television channel. In the preceding decade, Niko Tinbergen, in particular, had been actively presenting his work to the British public and the first cohorts of his PhD students were now joining the chorus (Burkhardt, 2005, Kruuk, 2003). In this context of a reinforced public presence of the scientific study of animal behaviour under natural conditions, ITV introduced the series *Survival*. The programme set out to present, in an accurately simplified and entertaining fashion, the work of these field scientists. This threatened to undermine the very notion of natural history television as a practice of knowledge-production. The NHU could not solely rely on naturalists anymore, it had to publicly define its links with scientific practitioners. The BBC first launched *Life*, a series of popularised biology hosted by ethologist Desmond Morris and featuring leading biologists. Then, it reclaimed the status of a knowledge-producer; mainly with the series *The World About Us*, it engaged in actively shaping the public identity of field scientists into local experts, bearers of a local knowledge who, most of the time, could not be trusted to use the camera properly to make discoveries. From then on they would appear as helpers, providing the BBC with the raw material useful to making visual objects of knowledge, the films. In this process, emphasising the mastery of film technology became central to the fashioning of the natural history film-maker's identity in contrast to the field researcher's. The shaping of the NHU as a new haven for natural history found its climax in the series *Life on Earth*, presented, as we will see, as the television equivalent of the naturalist's study and reclaiming, for natural history television, the notion of universal knowledge allegedly abandoned by specialised professional science (Regal, 2008). With *Life on Earth*, the process of cognitive legitimisation of natural history television became entirely self-contained, thus suggesting that the BBC NHU, producing and diffusing the series, stood as an institution able to constitute expertise of the natural world in its own right.

Witnessing nature on television—Naturalists on screen

The development of natural history television in the 1950s appears to have been essentially a means for amateur naturalists of giving more visibility to

their practice and their beliefs. Desmond Hawkins, usually held responsible for initiating natural history television broadcasting from Bristol in 1953, was a keen amateur ornithologist, and had been a radio features producer at the BBC since 1936, who revived natural history radio diffusion in the immediate post-war with several programmes such as *The Naturalist* (1946), *Bird-song of the month* (1947), or *Birds in Britain* (1951)—all instances of collaboration between the BBC and famous amateur naturalists of the time (Davies, 2000a; 1999; Parsons, 1982). One of them, Peter Scott (1909-1989), 'was to play the key front-of-camera role in making successful Desmond Hawkins' ventures into television' (Parsons, 1982:27), enabling the effective relocation on television of visual artefacts consumed during the inter-war period in cinemas, and bringing instant cognitive credibility to this new setting for natural history. Scott achieved this through his wide access to a network of naturalists who made films of animals, and through his overall standing as a gentlemanly figure, with publicly known connections with the Establishment, which reflected positively on the whole enterprise (Davies, 2000a).

Staging the genteel conversation as a way of knowing

Made a 'Life Fellow of the Zoological Society of London as a christening present' (Scott, 1966:29), Peter Scott, the son of Robert Scott the polar explorer, spent three years, from 1927 to 1930, at Trinity College in Cambridge, where he first read 'Natural Sciences, Zoology, Botany, Physiology, and [...] Geology' (p.51), before choosing to be an artist, instead of a life scientist, principally because he did not agree with what traditional holders of cognitive authority then considered relevant as knowledge of the natural world. 'In those days the science of animal behaviour had scarcely begun. To know about live animals was something less than science' (p.78).[2] Scott therefore presented himself as 'a painter by profession and an amateur scientist' (Scott, 1966:15) and to his contemporaries certainly appeared as this

[2] Scott's statement reads quite similar to David Attenborough's justifying his own leaving the university to go on television: 'Zoological research in those days was largely laboratory-bound and that wasn't the way I wanted to study animals' (Attenborough. 2003:10).

archetypical figure of Victorian Britain, the gentleman of science, 'devoted to the serious pursuit of knowledge as a vocation, but not for pay' (Secord, 2000:403) and exhibiting a high degree of freedom of action, which implicitly positioned him as a truth-teller (Shapin, 1994).[3]

> 'Peter [Scott] never claimed to be an academic of any kind, yet seemed to know them all and talk their language [and] was able to mingle happily in the upper scientific echelons—even after daring to suggest that there really was a monster in Loch Ness.' (Shackleton, 1989).[4]

To make such gentlemanly figure the face of natural history television in the early 1950s, to the extent that to television viewers 'wildlife was *Look* with Sir Peter Scott' (Richard Brock, Wildscreen, 2008c),[5] appears as a borrowing of Peter Scott's trustworthy status for the new medium. The move appears similar to Kearton's, as discussed in the preceding chapter, using the Emperor-King's status in order to lend credibility to his film on the wildlife of India. Both cases can be analysed as instances of a similar mechanism of moral usurpation of status symbols (Young, 2003), as attempts to lay solid grounds for the perception of natural history films as reliable sources of knowledge of the natural world.

The first natural history television programme to come out of Bristol was an outside-broadcast, live from Scott's Wildfowl Trust, an ornithological research station which also happened to be Scott's home (Scott, 1966; Parsons, 1982).[6]

---

[3] For a further discussion of these notions see Chapter Six.

[4] Incidentally, Scott's suggestion that there was a monster in the Loch Ness can be read as a rejoinder of Regal's (2008) point that the quest for monsters is the preserve of amateurs naturalists as opposed to scientists (see Chapter Three).

[5] As was indicated in Chapter Three, Attenborough quickly became an equal to Scott in terms of his status as a television naturalist, although his presence on screen began two years after Scott's, in 1955. What happened at this time was in fact the parallel development of two distinct endeavours to bring the culture of natural history to television. As a result, and during these first years, the head of BBC television ruled that Bristol should concentrate on British topics and Attenborough would have the priority on overseas ones. In 1957, Peter Scott broke the agreement by taking to Australia Charles Lagus, Attenborough's cameraman, to film footage for a programme called *Faraway Look*.

[6] On the place of residence as the place of knowledge-production see Shapin (1988). For a discussion of this notion in relation to natural history film-making see Chapter Six. Scott offered Konrad Lorenz to direct research there for 'nine hundred pounds per year, plus use of

The programme presented the research work conducted there by Scott and his naturalists friends. Regular studio programmes followed from December 1953. At first Scott presented his own films, then 'Peter Scott's friends [...] [a]nyone who'd got an amateur film camera and did bird films in their holidays mostly' (Tony Soper quoted in Davies, 2000a:450) came to show their films. Thus started the natural history television series *Look*. Every fortnight, then weekly, Scott would sit with his guest, the naturalist cameraman, in a studio set representing his own study at Slimbridge. The audience would be witness to a conversation between the two men about the film, its topic and the circumstances of its making, punctuated by the projection of some footage. As one contributor to this programme noted:

> 'None of the distinguished naturalists and cinematographers whom Peter Scott has introduced talk down to their public. Indeed, they talk, not to their public, so much as to each other in the relaxed yet lucid voices that they would use in any normal discussion of their profession amongst themselves. The fact that by so doing they capture and please their audience is itself proof that natural history needs no aid to acceptance [...].' (Fisher, 1959:9)

This conversational format of presentation can perhaps be interpreted in the light of the pivotal role of conversation in elite Victorian society and the importance of knowledge of nature in this context. In mid-nineteenth century Britain, in a performative public enactment of the way knowledge was produced in the enclosure of the Royal Society of London, polite conversation had been devised as a means of 'bringing science to the center of fashionable society. [...] Objects of research became conversation pieces and brought discoveries to the attention of the fashionable world' (Secord, 2000:412). Genteel conversation was thus a kind of template for the public performance of the production of knowledge and in a way, the popularisation of this process amongst the upper classes. The use of this same pattern of civil conversation when discussing matters related to natural phenomena as shown in the films

---

Scott's boat the *Beatrice*' (Burkhardt, 2005:357). Scott was thus acting as a patron of science thus further asserting his status (Golinski, 1998).

can similarly be seen as positioning these films as instances of genuine knowledge. To make the films the objects of this genteel conversation was thus to present them as objects of research.

This notion of genteel conversation allows, it seems, to bring a second point to light. As we saw above, Scott clearly stated that his dissatisfaction with a scholarly culture which considered the knowledge of how live animals behave as 'less than science' (Scott, 1966:78), was at the origin of his engagement with another mode of relationship to wild animals: painting them. The organisation of Scott's natural history programme, and the way it appeared to its audience, exhibits features resembling what has been analysed as the emergence of an English science in the 17thC, which resulted in the foundation of the Royal Society of London (Shapin, 1994). This movement, concerned with means of 'producing, sustaining, and modifying knowledge-claims in lay society' (Shapin, 1994:121), mobilised for that purpose 'conventions and codes of gentleman conversation […] as practically effective solutions to problems of scientific evidence, testimony, and assent.' (*Ibid.*). As Shapin emphasises such

> 'appropriation and relocation of specific gentlemanly practices were […] the result of new modes of participation by members of the gentle classes in natural philosophy and natural history, and of the possibilities that participation offered for legitimating and revaluing scholarly culture' (Shapin, 1994:121-122)

The fact, in the case of natural history film-making, that such endeavour occurs in a context which can be identified as non-academic, can be connected to the point discussed in Chapter One that instances of non-academic knowledge-production were occasions of contesting the ruling authority of the academy and attempts at bypassing it through a direct appeal to the public (Secord, 2000; Crosland, 2001; Lightman, 2007). The development of natural history television can be analysed as an attempt—by a group of people belonging to the middle classes, participating in the culture of amateur natural history and as such interested in the study of the behaviour of live animals in their natural surroundings—to assert the cognitive legitimacy of this pursuit, centred on the practice of observation, and to promote 'a spirit of enquiry, a searching curiosity about the living neighbourhood in which Man finds

himself—an undramatised and exact curiosity' (Hawkins, 1957:7). Hawkins, who was to found the BBC NHU in 1957, hoped that in front of the television screen, 'the amateur student and the scientist [would] come to terms, with a possibility of general intelligibility and a shared objective' (*Ibid.*). Natural history television was thus envisaged by its promoters as a practice producing objects able to inhabit different social worlds.[7] As we will now consider, naturalists were helped in their enterprise by the public shaping of television in the early 1950s as a technology of public witnessing (Shapin and Schaffer, 1985).

Fashioning television as a technology of public witnessing

With television, natural history found the perfect match in terms of technology of display. Even more so than with cinema in the preceding decades, for the latter had developed as an essentially entertainment oriented medium, whereas television's informational role was prominent (Corner, 1999). 1953, the year when natural history television broadcast started, was marked by what has been branded a major broadcasting event—Queen Elizabeth's Coronation.[8] One particular outcome of the event was to institute television technology as a means of enabling the public to visually participate in distant events, and obtain a genuine knowledge of the matter presented on the television screen.

---

[7] At this stage it would seem improper to call natural history films presented on television 'boundary objects' (Star and Griesemer, 1989), for they were not yet the result of the collaboration of allies pertaining to different social worlds. On the contrary they were very much the product of the activities of one social group, amateur naturalists, intent on being taken seriously by non-naturalist members of the public and scientists alike.

[8] Although, as some television students emphasise (e.g.: Corner, 1991a), seeing this single event as the sole origin of the public perception of television in post-war Britain would be unwise, the event, by its scale as well as its historical and symbolic weight at the time, should nevertheless be taken seriously when reflecting on the fashioning of television's social "identity" in the period. The television audience that day was estimated to be 20 millions, more than a half of Britain's adult population (Corner, 1991a). Henrik Örnebring (2007) provides a very detailed study of how the Coronation was 'received, celebrated, and reacted to' (p.171) by the audience through his examination of the Mass-Observation archive. The study reveals for instance that a conscious effort was made to ensure that as many people as possible would be able to watch the event on TV and that public viewings were organised across the country. The study insists that the Coronation was a transitional event for the privatisation and domestication of the medium television.

> 'Yesterday, for the first time in perhaps a thousand years, the Sovereign was crowned in the sight of many thousands of the humblest of her subjects. Yesterday, by penetrating at last, even vicariously, into the solemn mysteriousness of the Abbey scene, multitudes who had hoped merely to see for themselves the splendour and the pomp, found themselves comprehending for the first time the true nature of the occasion. No mere report could have impressed so strongly on those who now looked on the sense that this was a deed of dedication, in which they silently and reverently participated. [...] the remote spectator [...] saw more of it all, indeed, than thousands of those within the Abbey wall can have seen.' (Anon., 1953a)

Since its creation in the 1920s, the BBC, which was 'set up to educate, to inform and to entertain, with a public service ethos' (Whittaker, 2001:145), had been as central to British public life as the Monarchy and the Church of England. Founded in 1922, it was established by Royal Charter in 1926, which *ipso facto* symbolically placed it above political interests and debates (Briggs, 1985). Through the years, its image of impartiality, disinterestedness, and responsibility towards the British people had been consistently consolidated and it had emerged from the Second World War as the European embodiment of truth-telling and freedom of speech (Briggs, 1985). In this context the Coronation added one more belief to those already associated with the BBC: television broadcast was 'a technology of trust and assurance that the things had been done and done in the way claimed' (Shapin and Schaffer, 1985:60), it was a technology allowing for distant participation and an understanding of the true nature of things, it was the most efficient means of an enhanced and enriched vision in contrast to what a mere physical presence at the scene might have allowed. Television thus distinctly emerged as contributing to organising collective assent, allowing the constitution of 'matters of fact' by ensuring 'the multiplication of witnesses' (Shapin and Schaffer, 1985:57). Such privileging of the sense of sight over others as a means of acquiring knowledge is in line with the evolution in the modes of display in the culture of natural history, from the cabinet of curiosity where *naturalia* could be physically handled by visitors to natural history museums where they were locked in showcases, and

could therefore only be gazed at by the public. As we discussed in Chapter One, this evolution established a natural distance between the observer and the observed, which can be said to have been further naturalised by television (Noordegraaf, 2003; Crary, 1990).

The programme *Look* benefited fully from, and contributed to reinforcing this perception of television as a medium capable of turning a distant viewer into the direct witness of remote events.[9] This appears most clearly with one film, broadcast in 1955 and which ever since has epitomised *Look*, Heinz Sielmann's *Woodpeckers*. Sielmann's film, made by replacing part of a tree trunk with glass (Sielmann, 1959), revealed what was happening inside a woodpecker's nest-hole.[10] In the book narrating the making of the film, Sielmann declares that he had engaged in the adventure hoping 'to lay bare the secrets of the woodpeckers' nest' (Sielmann, 1959:59), and the viewers really could feel that they had been allowed to witness previously unseen events, and that they could, as a result, obtain genuine and first hand knowledge of the true essence of this natural phenomenon. Seventeenth-century gentleman philosopher Robert Boyle devised a 'literary technology' aimed at conveying by means of words and detailed engravings enough 'circumstantial details' so as 'to trigger in the reader's mind a naturalistic image of the experimental scene' (Shapin and Schaffer, 1985:60). By contrast to Boyle's literary technology, viewers were not invited to form an image in their mind so as to replicate one unique past observation, a process whose outcome is uncertain (Collins, 1985), but were enabled by the film to conduct the actual observation themselves. And the day after the *Woodpeckers* broadcast, 'everyone was talking about this film where you got inside the nest' (Richard Brock, Wildscreen, 2008c).

Claims by promoters of natural history television that they were bringing 'relief from everyday cares and anxieties' (Hawkins, 1957:7) by offering

---

[9] For a discussion of the body virtually engaged and mobilised by the gaze through watching television, see Friedberg (1993).

[10] For an account of the making of the film see Sielmann (1959). The film can be seen on the Internet at:
http://www.wildfilmhisory.org/film/272/Peter+Scott%3A+woodpeckers.html

viewers the possibility to look 'steadily at the permanent conditions of life and [understand] the rules and patterns of animal existence'(Hawkins, 1957:7), can arguably be analysed as the assertion of natural history television's political utility on the ground of its ability to represent 'patterns of animal existence' as natural and immutable and making these representations largely available, thus participating in solving the problem of social order by contributing to the consolidation of 'agreed standards of values' (Schaffer, 1995:162). The fashioning of television's social identity as a technology of public witnessing, of which, as mentioned above they took advantage, and in which they participated, allowed the promoters of natural history television in the early 1950s to claim at the same time that the new medium was a reliable source of knowledge of nature, thus enrolling the audience's support, and that it was socially useful, thus ensuring political favour.

In 1957, Desmond Hawkins celebrated the establishment of the BBC Natural History Unit—the sign that the policy conducted in Bristol under his guidance since 1953 had been ratified by the Corporation (Parsons, 1982)—with *The BBC Naturalist* (Hawkins, 1957), a collection of natural history essays contributed by Peter Scott and several guests to *Look*. In the introduction Hawkins celebrated the success of natural history television in terms leaving no doubts as to his confidence with respect to the reach of his achievement:

> 'Programmes like […] *Look* have shown that they can hold the attention of an audience of several millions. Such broadcasters as Peter Scott […] enjoy a measure of popularity that would certainly not be scorned by the more orchidaceous and spectacular stars of the entertainment world.
> […]
> into those homes the BBC […] has brought a reliable flow of expert comment and factual report, […] films of bird-life and animal behaviour which equip us with a range of knowledge that a Bewick or a Gilbert White might envy' (Hawkins, 1957:7).

Such victorious tonality, however, would not pass to the next decade, for in the 1960s, two developments occurred which both had the potential of compromising the NHU's position in terms of the production and diffusion of

natural historical knowledge. These were on the one hand the rise in importance and public visibility of ethology in the early 1960s (Burkhardt, 2005; Kruuk, 2003), and on the other the appearance in 1961 of the television series *Survival* on ITV. These developments forced the NHU to engage into 'boundary work' (Gieryn, 1983) on two fronts.

The 1960s: setting the boundaries of natural history film-making

The 1960s have been recognised as a time of flourishing and consolidation for ethology, both in terms of acceptance in the scientific sphere and in terms of public support (Burkhardt, 2005; Kruuk, 2003). Part of the latter aspect can in particular be attributed to Niko Tinbergen, arrived in Oxford in 1949, who spent a lot of time in the early and mid-1950s writing books of popularised scientific knowledge, describing his approach to the study of animal behaviour for a large non-specialist public (Kruuk, 2003). It is also during this period that he trained his first students at Oxford, thus progressively extending the network of ethology, further linking the pursuit to society (Latour, 1987). In the second half of the 1950s, some of these former students became vocal public exponents of the biological study of animal behaviour. Amongst them was Desmond Morris, who from 1956 on was to host *Zootime*, a television programme with an important following, broadcast from the London zoo on ITV.[11] In this programme, Morris, Curator of Mammals at the Regent Park's Zoological Garden, would exhibit animals performing various behaviour, and scientifically interpret them for the audience. In Britain, *Zootime* certainly played a determining role in fashioning social expectations in relation to the presentation of animal behaviour on television. For it brought to the attention of a large audience the categories used to ascribe a biological meaning to animals' actions and, in line with the ethologist creed, banning subjectivist

[11] The programme, produced by Granada TV, was made and broadcast from the London zoo (from 1956 to 1965), before being moved to the Manchester zoo (until the end of the programme in 1967).

psychology and anthropomorphism when analysing animal behaviour (Burkhardt, 2005).

Adopting 'a more adult semi-scientific' tone

Now, as we saw in the First Chapter, the study of animal behaviour in the field had developed in the milieu of amateur natural history in the early decades of the 20thC, in reaction to the development of such scientific disciplines as zoology and comparative anatomy, which mainly worked with captive, or dead and stuffed animals (Allen, 1994; Burkhardt, 2005). Throughout the inter-war decades, it remained practised at an "amateur" level, the few academic scientists who got involved in this pursuit, principally Julian Huxley, cultivating it on the side, more as a promising hobby than as a genuine strand in biological research (Burkhardt, 2005). As we saw in Chapter Three through the example of Kearton, the unrivalled ability of field naturalists to observe undisturbed animal behaviour was one of the main supports to early natural history film-makers' claims to trustability. To natural history, the development, in the 1950s, of a scientific profession centred on the study of animal behaviour in the field was therefore an event comparable to what had happened in the late 19thC when the various disciplines that would form the canon of the professional life sciences were carved out of it (Nyhart, 1996; Secord, 1996). To natural history film-makers who had already adopted animal behaviour as their stock in trade, and had made the ability to capture and show it the main feature of their social identity, the blow was potentially fatal. For, with the development of a scientifically informed public discourse on animal behaviour, these film-makers could not anymore limit themselves to exhibiting films of animals behaving in their natural habitat unsuspicious of being observed, in order to support their claim to cognitive trustability; if they wanted their films to be taken as objects of knowledge, film-makers had to find animals displaying behaviours falling under the biological or evolutionary categories used by scientific practitioners to make sense of these behaviours.

In this context, the situation faced by natural history film-makers of the Keartonian era who were still working in the 1960s is best exemplified by the case of Armand Denis, whose series *On Safari*, was to be decommissioned in

May 1965. He had beforehand received a letter from the NHU suggesting possible changes in his way of making films:

> 'the present day television audience will not really accept this sort of pets treatment any longer. If they are going to accept it, you have really got to dress it up very carefully, both pictorially and verbally. [...] The commentary line would have to take on a more adult semi-scientific approach. People would like to know not just that you are keeping them as pets, but that you are studying them most carefully. [...] The television audience does not take too readily now-a-days to an anthropomorphic approach, i.e. pets' names etc. They want to know about animals as animals, but not so much about animals as extensions of human activity.'[12]

In order to ensure that the NHU's output would appear more credible to the audience, its contributors were urged to relinquish any tendencies to anthropomorphism, hence abiding by a precept central to early ethology (Mitchell, 2006; Burkhardt, 2005). To stress the separation between humans and animals was to allow film-makers to highlight their straddling this specific boundary and therefore to gain in credibility (see Chapter Five).

Whilst contributors to the NHU, in reaction to the increased public visibility of ethology as the legitimate study of animal behaviour and with the hope of emulating it, were thus enjoined to adopt 'a more adult semi-scientific' tone, others engaged in the opposite direction. Choosing with the series *Survival* broadcast on ITV the way of popularisation, they started using the outcomes of this new scientific discipline to fabricate entertainment.

Bristol Natural History v. Pop. Nat. Hist.

'*Look* created a TV climate and an atmosphere that made it possible for *Survival* to thrive when it arrived on the scene.' (Willock, 1978:28). Taking advantage of this favourable context, Collin Willock and Aubrey Buxton

---

[12] Nicholas Crocker to Armand Denis, 25 February 1964, BBC WAC SW3/20/1 (p.2).

successfully set up *Survival*, in 1960[13], on behalf of Anglia TV, a regional television company based in Norwich. From the start, 'leaving the specialized wood-notes-wild viewers to the BBC' (Willock, 1978:27), the two men did not attempt to compete for the middle-class *Look* audience, and instead set out to attract 'the great mass of viewers [...] available in the industrial areas of the Midlands and the north' (Parsons, 1982:263). *Survival* was intended to fashion natural history for the working classes. And to this end, Willock and Buxton embarked on presenting wildlife as a spectacle.

> 'Neither of us had a scientific training. We therefore thought of our subject as natural history rather than as zoology, biology, ecology or any other combination of ologies. As writer and producer of countless *Survival* programmes, I have always considered this lack of scientific upbringing to be an advantage. When stuck, you can always ask scientists. There are enough of them around. The trick is to know what to ask them and then how to interpret what they tell you accurately and entertainingly for an audience of millions.' (Willock, 1978:10)

The conception of natural history guiding its creators implicitly suggested that *Survival* was popularised life sciences, in accordance with what would today be qualified as the classical top-down model of popularisation (Cooter and Pumfrey, 1994; Hilgartner, 1990) (see Chapter One). This approach which does not recognise natural history as a knowledge-production practice, placing it in a subservient position with regard to "ologies" was problematic for the NHU, for it could weaken the claim that natural history television was a pursuit producing genuine knowledge of the natural world, and transform the public perception of what was going on in Bristol. Suggesting on the part of the Bristol Unit a real intention of cognitively disqualifying the *Survival* series, and implying that the NHU's was more genuine natural history than the one presented in this series, a producer at the NHU, Jeffery Boswall, branded it 'Pop. Nat. Hist.'(Willock, 1978:78; Bousé, 2000).

---

[13] The first programme was broadcast in January 1961.

However, such rhetorical fencing would not be enough on the part of the NHU to discredit *Survival*. And in order to assert the cognitive superiority of Bristol's brand of natural history television, the NHU conspicuously developed its collaboration with scientific practitioners, following a subtle strategy designed by Desmond Hawkins in a report written in 1962.[14] This document provides evidence that, faced with the competition represented by scientific practitioners of ethology in the domain of the observation of animal behaviour, the NHU perceived a necessity to fashion its programmes so as not to be vulnerable to cognitively disqualifying criticisms and as to appear credible to the audience as natural history film-making and not popularised life sciences.

> 'Although there are many respectable motives for an interest in wild-life (as well as some disreputable ones) the spirit of scientific enquiry must have pride of place. In handling this subject we expose ourselves to the critical scrutiny of scientists, and their approval is an important endorsement. Moreover, it is their work that throws up the ideas and instances and controversies from which programmes are made. We look to them as contributors, as source material, as consultants and as elite opinion on our efforts. In short we need their goodwill.' (Hawkins, 1962:7).

It seems that this quote could be read as indicating, on the part of the founder of the NHU, an acute awareness of the 'boundary work' (Gieryn, 1983) to which scientific practitioners may be prone to devote themselves when non-scientists attempt to participate in the enterprise of knowledge-production, and the dire necessity to protect the NHU from it. Any ill will on the part of scientists is perceived as capable of derailing the entire project of natural history television as a practice producing genuine knowledge. At the same time, this quote also announces the relationship which progressively developed between the Unit and scientific practitioners along the 1960s and 1970s. As we will now consider, in order to bring indisputable cognitive credibility to the NHU's output, scientific practitioners were at first enrolled in

---

[14] BBC WAC, folder WE 17/2/1. Hereafter referred to as (Hawkins, 1962).

the practice of knowledge-production embodied in natural history film-making. But in a second step, their participation became limited to purveying a necessary but not sufficient ingredient for the fashioning of a performance which, in the end, is intended to stand as a self-legitimated form of knowledge of the natural world. Progressively, the NHU actively engaged in fashioning the field scientists' social identity so as to confine them to the position of local experts, holding a local and limited knowledge. The moral authority of the television outlet itself would be redefined around the specific notion of the expert handling of visualising technologies, presented to the public as increasingly sophisticated, allowing for an output advertised as being of an ever growing informative quality. A key character in implementing this strategy was to be David Attenborough.

Seeing is Knowing

Exhibiting 'visible scientists' in *Life*

In October 1965, Attenborough wrote to Armand Denis:

> 'When I arrived here, BBC-2 had no Natural History programme whatever, and, as you may imagine, I was anxious that it should have a regular one as soon as possible. But equally we feel it would be wrong to try to produce a carbon-copy of either "Look" or "On Safari".
> At the moment, we have scheduled a new magazine dealing with Natural History in general, from a fairly scientific point of view [...]'[15]

The new magazine mentioned here was a true implementation of the strategy suggested by Hawkins in his 1962 report and aimed at bolstering the trustability of the NHU's output by an increased reliance on the moral authority of scientific practitioners. *Life*, launched in 1965, was hosted in studio by Dr Desmond Morris, Attenborough's once major rival of the *Zoo Quest* period.[16]

---

[15] Attenborough to Armand Denis, 21 October 1965, BBC WAC SW3/20/1.

[16] It should be remarked that the inception of *Life* in 1965, occurs at the time when the programme *Horizon* started (1964), thus suggesting an overall move, on the part of the BBC, aimed at exhibiting its close ties with scientific practitioners as a resource to build up its hegemony in the televisual landscape of the1960s' Britain (Boon, 2008).

Filmed in a studio in Bristol, the series repeated the principle identified in Peter Scott's programme *Look*, offering the possibility to practitioners in the life sciences to debate in front of the television audience:

> 'It was a one-hour programme and it went out fortnightly from Bristol. It was done in the studio in Bristol, and I was given enough money to bring in experts from all over the world to discuss. And people had violently different attitudes towards animal behaviour topics. And there were some pretty fiery debates.' (Desmond Morris, Wildscreen, 2008e)

Look, staging the performance of a genteel conversation between the amateur naturalist Peter Scott and his film-maker guest, had allowed for establishing the status of natural history television as a credible enterprise of production of knowledge of the natural world. This was further asserted through *Life*.[17]

Life did not last. It stopped in January 1968 after 53 programmes, due to the sudden and at the time definitive departure of its presenter, Dr Desmond Morris, to Malta. It had, however, a lasting legacy. With the performance of the scientific debate staged every week in the Bristol studio where *Life* was shot, the NHU secured the good will of scientific practitioners, who were provided with a tribune from where they could publicly present and defend their work, the NHU illustrating it with specially shot sequences (Parsons, 1982). And the three assistant producers on the set who became in the following decades prominent producers at the NHU, working amongst others on the next series, *The World About Us*, as well as on *Life on Earth*, Attenborough's *opus magnum*, were able, through their work on *Life*, to build lasting personal relationships with scientific practitioners. Thereby, beyond the public exhibition of 'visible scientists' (Goodell, 1977), was ensured the continuity of the relationship between the NHU and the scientific sphere. But from then on, this relationship would happen behind the scenes and evolve so as to increase

---

[17] For a discussion of this type of relationship between a natural history film-maker and scientific practitioners, see Chapter Six.

the distinction between natural history film-making and field research in the life sciences.[18]

Bringing the film medium to the fore with *The World About Us*

From the outset, the series *The World About Us* was advertised as 'a series of films from all over the world about our astonishing planet and the creatures that live on it' (Parsons, 1982:254). Like *Survival*, its main competitor, it was conceived as a series of films and not a studio based programme, thus breaking with what had been the dominant and traditional model of natural history television.[19] This suggests, as we will see, a shift in terms of practices of legitimisation, from bringing forward trustworthy personalities such as Peter Scott or Desmond Morris, to relying exclusively on the film-making apparatus and its advertising to support claims to cognitive credibility. Given the pre-eminence attributed to the film medium, *The World About Us* depended heavily on film-makers specialised in wildlife. The NHU addressed the issue by finding and forming promising "amateurs", one of these being Ronald Eastman, who made himself a name with his film *The Private Life of the Kingfisher* (1967), which, amongst other things, showed what was happening in the bird's nest-hole, dug inside a river bank (Parsons, 1982). David Attenborough on his part, who as Controller of BBC2 had created the series and was supervising it, went for more significant captures. One of his early successes in this enterprise was to get Alan Root, whose work was emblematic of the *Survival* series, to work for the BBC.[20]

---

[18] Of course, other programmes were developed in the period, in particular Jeffery Boswall's series *Private Lives* and *Wildlife Safaris*. But none ran as long as *The World About Us* did, and none played such a central role in the redefinition of natural history film-making after the development of ethology.

[19] Even though, as Parsons remarks, after 1966, *Look* 'had moved out of the original set representing Peter Scott's studio and was [...] a series of complete films usually narrated by Peter Scott but by no means always involving him in vision' (Parsons, 1982:263).

[20] Alan Root started filming with the Denis and in 1959 had shot Bernhard Grzimek's *Serengeti Shall Not Die* which won an Oscar in 1960. For a biographical account on Alan Root covering the 1950s, 1960s and 1970s, see John Heminway's *No Man's Land. The Last of White Africa*, (1983:162-185)

Trusting the natural history film-maker

In 1967, Root, together with his wife Joan, had made a film for *Survival* about the Galapagos, *Enchanted Isles*, which became the first British wildlife film to be sold on the American market (Bousé, 2000). The Roots were thus a kind of celebrities and, as Parsons indicates, their collaboration was 'valuable in adding to [the series'] prestige in the early years' (Parsons, 1982:257). In December 1967, *The Times* readers were reminded that 'Alan Root is a Londoner, whose family emigrated to Kenya after the war. […] a self-taught naturalist, who learnt the filming side of the job from another naturalist-cameraman Des Bartlett […]. Joan, who was born in Kenya, is 26' (PHS, 1967). This quote establishes Alan Root in the tradition of amateur natural history, and also suggests that, in the late 1960s, it was admitted that to be a natural history film-maker was first and foremost to be a naturalist. Root only made two films for the NHU, but despite its brevity, the case of his collaboration with the BBC, and the way this was advertised, allows us to understand part of the role *The World About Us* played with respect to the ongoing problem of fashioning the NHU as a trustable producer of knowledge of the natural world.

Particularly illuminating in this instance is an episode which occurred during the shooting of his first film, *Mzima* (1969). At one point, Root got bitten by a puff adder, which prompted such a severe reaction that filming had to be postponed. The event was mentioned in *The Times* (PHS 1968a) and two persons were asked to react on the news. Nicholas Crocker, head of the NHU, indicated that Root was 'making a slow recovery' and that 'in his latest letter he [said] that he [hoped] to be filming again in the spring. This kind of bite is extremely dangerous and could well have been fatal'. On his part, as Controller of BBC2, who had commissioned Root's work, Attenborough commented:

> 'We'll show the films when he's finished them: Alan's a perfectionist and I know what can happen in Africa, so I hadn't put a specific date on them. I've seen him do things that scare the life out of me, but as he spends 90 per cent of his time in the bush he knows more about its hazards than anyone.' (PHS, 1968a)

A month later, *The Times* announced that 'Alan Root, the natural history photographer [...] has had to have the index finger of his right hand amputated. His right thumb is still immobile, his arm still shrivelled, and his hand badly wasted' (PHS, 1968b).

The communication around this episode appears to be illustrative of two points. The first one is that the identity of the film-maker contributing to the series *The World About Us* as a trustworthy individual is fashioned in ways identical to those employed by earlier film-makers to support their claims to credibility. Most evidently this unfortunate puff adder accident draws the attention to the familiar theme of bodily suffering, and Attenborough's comment also mobilises the themes much used by Kearton, and Attenborough himself during his *Zoo Quest* period, of the infinite patience and of the daring adventurer. Such iterations of well worn strategies would indicate that in the late 1960s a genuine public culture of natural history film-making had been fashioned, a set of codes, beliefs, and values associated specifically with the material practice of filming wild animals in their natural habitat had been established. The second point suggested by the presentation of Alan Root's accident to the public is the clear intent on the part of the BBC to present, through the voice of one of its top executives, David Attenborough, the natural history film-maker as a very reliable individual whom can be let operating alone and far away in the field, in total confidence that the result will be trustworthy. Therefore somehow emerges the notion that the credibility of the natural history film-maker is vouched for by the institutional framework within which the production and diffusion of the film occurs. With respect to the making of *The World About Us*, this image of the trustworthy natural history film-maker stands in contrast to the presentation of participant field scientists as individuals who cannot be left alone with a camera.

The field scientist as an 'invisible technician'

One scientific practitioner who participated in *The World About Us* was Niko Tinbergen. His contribution resulted in the famous *Signals to Survival* (1968). It took two years to shoot the film which was meant to present 'the language of birds [...] their displays and what these displays meant' (Kruuk,

2003:232). The filming was conducted under the close supervision of a film-maker hired by the NHU, Hugh Falkus. And although Tinbergen actually carried the camera, he did not control it, for 'Hugh hectored and admonished and honed the script [...] really treated him [Tinbergen] like a schoolboy' (Kruuk, 2003:232), making sure that 'no shots essential to the construction of a careful exposition were missing' (Parsons, 1982: 262). And when it came to editing the film and constructing its sound-track (essential for a film presenting the way gulls communicate by voice and posture), Tinbergen was kept outside the editing room:

> 'in the autumn Hugh and I met to work on the final stages of production at Bristol with the film editor, David Aliband. Then followed one of the most careful and detailed pieces of post-synchronisation yet undertaken on a wildlife film at Bristol, for we knew that the success of the programme depended largely on the accuracy of the sound track – not only for scientific purpose but also in order to create a sense of realism, of actually being *in* the gull colony. [...] So David, Hugh and I spent many days working long into the evenings and over weekends, before we were finally satisfied that we had recreated the sounds of the gull colony and had matched every call and wing-beat to the action in every film shot.' (Parsons, 1982:262- original emphasis)

The NHU was eager, for the purpose of strengthening its claims to trustworthiness, to exhibit the participation of scientific practitioners to the making of its programmes, but it was at the same time adamant that scientific practitioners should remain in the field. Being at the same time both a field biologist and a film-maker was not possible. And when the film was mentioned in *The Times* on the occasion of the BBC winning an award with it, it was defined as 'a programme on seagulls, directed and narrated by Mr. Hugh Falkus'.[21] This episode also highlights the role attributed to the mastery of the material process of making a film. Not only taking pictures with the camera, but also sound recording, cutting, editing, every aspect of the fabrication of a

---

[21] *The Times*, 'Italia prize for BBC TV film', 23 September 1969:6.

film is involved in this 'boundary work' (Gieryn, 1983) aimed at setting a clear separation between natural history film-making and field research. And as we will now see, this notion is central to the next stage of the fashioning of natural history film-making into a genuine culture of knowledge-production of the natural world, encapsulated in *Life on Earth*.

Filming nature and making discoveries

Presented as 'the most ambitious project of its kind ever undertaken for television'[22], *Life on Earth* stands as both the outcome of what has been described so far in terms of claims to trustworthiness laid on behalf of natural history television, and the founding act of natural history television for the following decades. Historical accounts of its making are widely available.[23] It turned out as a mammoth project costing GBP 1 million, and mobilising the BBC as a broadcasting institution in its entirety. It took three years to make, necessitated to put together a specially dedicated production team of thirty people from several departments, involved filming on at least a hundred locations over the world, and it engaged the help of more than 500 scientists (Parsons, 1982).

Natural history film-making, producing genuine knowledge

An article announcing a re-run of the series on BBC1, makes plain that this 'glorious explanation of Darwin's theories of evolution' (Wapshott, 1980), intended to lay strong claims to knowledge on behalf of natural history film-making.

> 'We were able, for instance, to put together views of living amphibians which no one had been able to see in that range of time ever. No zoo could show you that amount. The visual effect was devastating. It had the same effect on me [Attenborough] as it did on everyone else. I remember

---

[22] The quote is taken from the trailer shown in the *Wildtrack* programme included as a Special Feature on the DVD edition of the series (BBC, 2005).

[23] Parsons (1982) or Attenborough (2003) provide circumstantial narration of the way the series was made.

> the first time I saw the amphibian programme. I was speechless. My jaw was sagging with wonder.' (Wapshott, 1980)

Spreading before the eyes of the audience a wide sample of related living organisms, the series enabled the viewers, just like the collection assembled by naturalists in their cabinet, 'to roam freely throughout the universe' (Cuvier quoted in Outram, 1996:261),[24] providing them with an 'overview of the natural order as a whole' (Outram, 1996:261). *Life on Earth* transformed every domestic sitting room into a 'sedentary naturalist's study' (*Ibid.*). The television spectators would sit in front of the television set as naturalists would be standing in front of an open drawer in the calm enclosure of their study. [25]

Such rhetoric asserted the cognitive superiority of the natural history series over the zoological institution, the other place where the public, looking for knowledge of the natural world, could contemplate living creatures side by side.[26] The collection of living specimens offered by the television series is meant to allow for comparisons and reach to universal knowledge through acquaintance with a multitude of particulars (Daston and Galison, 2007). Causing 'the spectator to see the world through new eyes' (Nadis, 2005:xii), *Life on Earth* was decidedly a wonder show. Referring to the register of awe to describe his feelings upon seeing his programme, Attenborough placed the technology used to produce the series on a transcendental level as far as he himself, and everyone else, was concerned, therefore allowing for evidences of its mastery to stand as solid ground supporting claims to expertise (Morus, 2006). The production of knowledge is somehow delegated to the film-making apparatus, thus rendering this knowledge incontrovertible, for it appears literally endowed with 'mechanical objectivity' (Daston and Galison, 2007).

Further down *The Times* article, Attenborough continued:

---

[24] On Cuvier's claim that the sedentary naturalist's study is the only place where natural objects can be transformed into objects of knowledge see Dorinda Outram's 'New spaces in natural history' (1996). Cuvier's statement is discussed in Chapter One.

[25] This observation could thus invite us to envisage another acceptation of the term 'telenaturalist' to include the viewers of such natural history films, who are enabled to practice natural history from a distance from the natural objects, presented on the television screen.

[26] And the scientific institution which granted its cognitive legitimacy to Attenborough's first ventures in the field of natural history film-making (see Chapter Three).

> 'I can't tell you how touching some of the letters were. We were receiving about 100 a day. They came from children eight years old and professors of zoology. One professor wrote: 'But above all, I must thank you for reminding me why it was that I became a zoologist 50 years ago.'' (Wapshott, 1980)

In addition to providing genuine knowledge of the natural world through the panoptic vision it rendered possible, natural history television was claimed to be the genuine heir of the original 'spirit of scientific enquiry' (Hawkins, 1962:7). This somewhat conservative assertion was reiterated in a 1984 article about *The Living Planet*, Attenborough's second series constructed on the model of *Life on Earth*.

> 'Attenborough has identified television as the ideal vehicle for making a vast range of knowledge accessible and, most important of all, coherent. The attempt to see things as a whole has largely been abandoned by laymen and specialists alike, but Attenborough mediates between the two.' (Appleyard, 1984)

With *Life on Earth*, natural history television had reached to maturity and was endowed with the capacity of conveying genuine generalist knowledge of the natural world, allowing to embrace it in its totality. Natural history television was thus seen appropriating the claim, common in the amateur naturalist tradition, to an all encompassing knowledge as opposed to the narrow view of the specialised professional scientist, somehow reviving the idea that 'those who called themselves scientists were misusing the word. It was the dedicated amateur naturalists who were more scientific than scientists' (Regal, 2008:56). Through this series, natural history film-making was affirmatively positioned as a self-legitimating practice of knowledge-production, in no need for external support from socially recognised holders of intellectual and moral authority, be they institutions such as the London Zoological Society, as was the case with *Zoo Quest* (see Chapter Three), or individuals, such as Peter Scott as was the case in *Look*, or Desmond Morris in *Life*. And the personality brought forward was that of a man whose trustworthy identity had been publicly fashioned on and by natural history television and depended on it, telenaturalist David Attenborough. As will now be discussed, the strategies

employed to assert the trustability of *Life on Earth* all foregrounded the material practice of natural history film-making as the source of its cognitive credibility. The process of legitimisation was entirely self-contained.

Rehearsing the performance

In the first place, prior to the broadcast of the series, the BBC engaged in an active reshuffling of Attenborough's identity, from that of a powerful television executive back to that of the television naturalist, based on 'the performative ritual' (Jasanoff, 2003:396) of the television series (Ellis, 1992). After his resignation from the post of director of programmes for BBC television, Attenborough regularly participated in several natural history programmes, narrating for instance episodes of *The World About Us*, and fronting various children programmes. The head of the NHU would for example signal that 'in weeks 41/42 it looks as if there is going to be rather a large concentration of Attenborough'[27] before enumerating five programmes scheduled on five different days of the week. Then *Eastward with Attenborough* (1973), brought him back to Indonesia, the theatre of his successful 1956 *Zoo Quest for a Dragon* (See Chapter Three). Finally, in the two years preceding the broadcast of *Life on Earth*, the NHU offered him to narrate the weekly episodes of its new series *Wildlife on One* which, on some occasions, 'represented the largest BBC TV audience from any department' (Parsons, 1982:351). Attenborough thus became the voice of natural history on British television.

The contrast with Peter Scott's *Look* is worth emphasising at this point. For, Scott's trustworthy status had been acquired outside the institution, and the performative ritual of *Look* served to reflect his trustworthiness on the institution mediating the performance, the NHU. In Attenborough's case these regular appearances hosted by a trusted institution, were meant to assert, or re-assert, his trustworthiness. His regular appearances in children programmes, in this perspective, are noticeable as an attempt to habituate the audience, from an

---

[27] Mick Rhodes to Controller BBC1 and Controller BBC2, 13 June 1973, BBC WAC, Folder WE 8/83/1

early age, to Attenborough's omnipresence. Whereas in the *Look* scenario the legitimisation process involved external circumstances, Attenborough's rise in power announced the closure of the circle of causation. The performance's credibility was guaranteed by the performer whose credibility was guaranteed by the institution mediating the performance. All external instances of legitimisation were excluded. *Life on Earth* contained the source of its own legitimisation, foremost amongst which was the presenter's performance of natural history on screen. The series was a matter not only of conveying credible knowledge but also of asserting the trustability of natural history television as a credible source of knowledge of the natural world.

Concealment and exposure – Performing the production of knowledge

The beginning of the first episode of *Life on Earth* unambiguously sets the stage, placing from the outset the series under the cognitive and moral tutelage of British Natural History's great child, Charles Darwin. Attenborough first appears standing in the South-American rainforest, then sitting on the volcanic shore of a Galapagos island. The telenaturalist sets out to retrace Darwin's intellectual adventure, following in his footsteps.[28] This introductory sequence can be seen as a case of natural history television claiming Darwin as its founding hero, and thus asserting the intellectual credibility of the pursuit presented in the series, of which Attenborough stands as the embodiment (Secord, 1996). In an apparent desire to start all over again and pick things where Darwin found them, the methodological cornerstone of this pursuit is introduced in the next sequence, on fossils:

> 'Since the discovery of radioactivity, scientists have developed techniques of measuring the age of rocks based on the rates at which some chemical elements decay. So fossils can be dated to within a few millions years. But there are much more simpler ways than that of establishing the comparative ages of rocks that anyone can use, and there

---

[28] In a programme broadcast on 1 February 2009, 'Charles Darwin and the Tree of Life', which he narrated on BBC1, Attenborough was similarly seen sitting in Darwin's study, manipulating Darwin's stuffed finches, walking in Darwin's garden, and so on, somewhat impersonating the naturalist without any costume.

> is no more dramatic place to do so than in the Grand Canyon in the American West.'[29]

Heard at an early stage in the series, this commentary further positions *Life on Earth* as exemplar of an enterprise of exploration of the natural world other than science, based on one methodological precept, observation. And Attenborough, going down the Grand Canyon, expertly demonstrates his gift for observation, determining the age of fossils without the help of the scientists' radioactivity. The film-maker's tone of confident certitude when delivering his commentary throughout the series, as well as the careful staging of his screen appearances (Parsons, 1982), are overall elements which can be seen as participating in favour of his appearing as a reliable spokesperson for nature. Yet, perhaps the most powerful of all the strategies implemented in the series to this end is what a commentator at the time characterised as

> 'Attenborough's own intimate and enthusiastic involvement with the material. Few will forget from *Life on Earth* the sight of him whispering to camera from amidst a group of gorillas with whom he then proceeded to exchange embraces' (Appleyard, 1984).

This famous gorilla sequence, in the penultimate episode of the series, filmed allegedly by chance but in the end nonetheless included in the programme (Parsons, 1982; Attenborough, 2003; Martin Saunders, Wildscreen 2008d), can be seen as a repetition of the embraces seen in the *Zoo Quest* series between Attenborough and the female chimpanzee Jane, or the young orang-utan Charlie, themselves repetitions of Kearton's own staged displays of a close relationship to his chimpanzees Toto and Mary, all suggesting intimacy. Other instances, although lesser ones, of the same strategy can be recognised for example in the opening sequence of the ninth episode, where Attenborough is seen on screen holding a platypus in his arms, or in the sixth episode when he manipulates a Goliath frog. In both cases the animals do not seem to try to escape, and as much as those described in the preceding chapter, these displays

---

[29] Commentary *Life on Earth* Episode 1 'The Infinite Variety', BBC, 1979 (11:03-11:27). The numbers between brackets indicate, in minutes and seconds, at what point in the episode the quote can be found, using the DVD of the series published in 2005 by the BBC.

of close physical contacts between the natural history film-maker and animals can be interpreted as the former presenting himself as a bridge-builder between animals and humans (Serpell & Paul, 1994), standing as a spokesperson for the animals, who should be trusted when imparting knowledge of them to the audience (Latour, 2004) (see Chapter Five).

All the strategies described so far as demonstrating the trustability of the performer, and by ricochet that of the performance, rest on concealment at various degrees. For instance, prior to the shooting of the sequence where Attenborough is seen finding as by chance just the right fossil under a stone just lying there, the producer of the series had met with a scientific practitioner, 'Dr Bill Breed, Curator of Geology a the Museum of Northern Arizona' who agreed to 'accompany the crew whilst filming in the canyon' (Parsons, 1982:330). Similarly, the gorillas were those of a group habituated to humans by Dian Fossey, who had shown the film crew to the site where they could be found (Martin Saunders, Wildscreen, 2008d). We will come back to this concealment of scientific helpers at the periphery of the film-making process, for now suffice it to remark that in the chain of events leading to the filming of a sequence, they are always positioned at the very beginning, purveying the raw material, so to speak, but in no way involved in the making of the film, which stands as the process through which knowledge is produced, nor in the legitimisation of the series after its broadcast.

Unveiling nature's secrets

Such state of affair is made most conspicuous by the strategies of exposure surrounding the series, and associated with the strategies of legitimisation, partly based on concealment, and embedded in the performance itself, which we have just discussed (Morus, 2006). As will appear, all these disclosures contribute to present the material process of filming as a means of making discoveries. For example, in a television programme for children turned into a behind the scenes look at *Life on Earth*, the host raised the question of being at the right place at the right time, emphasising that 'you can never be sure that

animals are going to perform before your cameras'.[30] The question bears on the filming of the reproductive behaviour of a frog species, *Rhinoderma Darwinii*. The male incubates the eggs in his vocal sacks then releases fully formed froglets from his mouth. In order to film this birth it is thus necessary to find male frogs incubating eggs, close to the release stage. One could expect Attenborough to point towards scientific practitioners advising the film crew on when and where would be the most appropriate time and place to witness this particular behaviour. Instead, it is the cameraman he brings to the fore, emphasising his outstanding patience and the importance of the camera.

> 'Rodger Jackman is a specialist cameraman, who lives near Bristol […] and it was he who had the fantastic job of trying to watch this frog […] and he waited for 140 hours taking turns with his assistant watching the frogs, for that one moment, because if he presses the button on the camera after it's happened, we both know, it's too late. So Rodger watched and watched and eventually he got a shot which I don't think anybody had ever seen before. Certainly no scientist had ever seen before and certainly *I* hadn't seen before.'[31]

The fact that the birth of these frogs happened this way was known already (Parsons, 1982), but as Attenborough's commentary makes clear it had never been *seen* before by persons of authority—scientists *or* Attenborough—and implicitly, since it had not been *seen* it was not fully *known*. Appealing to the belief central to the culture of natural history that sight alone is enough to get a comprehensive knowledge of natural phenomena, natural history film-making is turned into a material practice allowing to unveil secrets of nature previously hidden to everyone. The appropriation by natural history film-making of the notion that discovery is the seminal moment of the production of knowledge of the natural world, embeds the practice into a Whewellian perspective (Yeo, 1993) and presents film-makers as belonging to a 'trained elite whose expert

---

[30] *WildTrack*, with Tony Soper, BBC1, February 1979, (08:19)

[31] *Wild Track*, with Tony Soper, BBC1, February 1979, (08:50-09:40) Attenborough's emphasis on "*I*" in the end of the commentary is in the original.

[technical] knowledge [would give] them privileged access to natural phenomena' (Morus, 1998:4).

Such fashioning of natural history film-making as a material practice allowing for the increase of the public stock of knowledge through an accumulation of successive and unexpected discoveries, appears most useful when it comes to maintaining scientific practitioners at the periphery of the film-making process. Ultimately it is the film-making apparatus which reveals the truth of nature. Scientists, when mentioned, only participate insofar as they facilitate the task of the cameramen. In a sense the relationship between natural history film-makers and scientific practitioners has become the mirror image of that which grew between life scientists and amateur naturalists when life sciences got defined as a specialised vocation (Secord, 1996; Allen, 1994). In return for their participation, scientists get 'a valuable teaching aid. Several hundred biologists had willingly helped us over the three years; it was only right that they and their colleagues should get something back from their investment' (Parsons, 1982:349).[32] It could be argued that natural history film-makers' boundary setting activities, with the emphasis placed on seeing, tend to erase the work of interpretation and construction of facts conducted by scientific practitioners. The NHU can thus be said to increase the distance between 'the displays and the social world of the work of research' (Secord, 1996:455). Natural history film-making in this perspective does not appear as a project leading to an increased public understanding of science, but as an enterprise of knowledge-production in its own right. Following this line of thought, it can be suggested that the observed tendency, in the BBC discourse relating to natural history film-making, to attribute a crucial responsibility in the evolution of the cognitive value of the output to what is crude technological determinism, would indicate on the part of this institution the desire to 'black box' its expertise (Latour, 1987), so as to render it immune to questioning. And through the control it exerts on the making and diffusion of such series as *Life*

---

[32] For a further discussion of the retribution of scientists participating in natural history film-making projects with 'working objects of knowledge' (Daston and Galison, 2007), see Chapter Six on *Winged Migration*.

on Earth, the NHU in Bristol stands as an institution able to 'embody meaning, create social relationships and symbolic orders' (Jasanoff, 2005:27-28), to constitute expertise on the natural world.

Conclusion

In this chapter we first saw how, through the series *Look*, the culture of natural history film-making had been successfully established on television in the 1950s and early 1960s, as a credible practice of production of knowledge of the natural world, building for this on the moral authority of Peter Scott. Second, we saw how natural history film-making had been shaped on television in the 1960s and early 1970s, as a result of the increased visibility of the scientific study of animal behaviour in the field. We saw how, in order to support its claims to credibility the NHU first had enrolled scientific practitioners and brought them to the fore, but in a second step had engaged in maintaining these scientists on the periphery so as to preserve the knowledge-production character of natural history film-making. Lastly, by examining the context of the making and presentation of the BBC series *Life on Earth* we saw how natural history film-making had been consolidated into a practice of production of genuine knowledge of natural phenomena. We saw that natural history film-making on television had appropriated the claim to universality, which naturalists argued had been abandoned by professional scientists along the road towards specialisation. In so doing, it was shown how scientific practitioners were enrolled in the film-making project and at the same time confined to the role of local experts, holders of a local knowledge. The NHU was thus positioned as a producer of 'boundary objects' (Star and Griesemer, 1989) which could perform an informative task for scientific practitioners and lay people alike. It could be suggested that such positioning of the NHU could tend to result in a disconnecting of the work of scientific practitioners from the rest of society. The former acquiring specialised knowledge which natural history film-makers then use to produce 'working objects of knowledge' (Daston and Galison, 2007) detached from the research work. In order to fashion its identity as a trustable institution able to guarantee expertise, the NHU can thus be seen

interrupting the network linking scientific practitioners to society and building its own in replacement (Latour, 1987).

The history of natural history film-making as it is recounted in this chapter indicates that during the 1960s and 1970s, conscious efforts were made to fashion the NHU as the embodiment of a set of values and beliefs which would automatically provide a trustworthy identity to the natural history film-makers whose work would appear on the BBC channels.

> '[i]nstitutions [...] provide individuals with vocabularies of motives and a sense of self. They generate not only that which is valued, but the rules by which it is calibrated and distributed. Institutions set the limits on the very nature of rationality and, by implication, of individuality. Nonetheless, individuals [...] try to use institutional orders to their own advantage'. (Friedland and Alford, 1991:251)

The case of natural history film-making thus points towards the fact that although trustworthiness might appear to be constructed within institutions, it remains first and foremost the result of the work of identity fashioning of individuals. In this case, first naturalists anxious to give public prominence to their culture and practices, in a context where it could be superseded by others threatening to turn natural history into mere popularised life sciences, and second individuals who, like Attenborough, had reached public prominence through a set of practices, natural history film-making, and needed to maintain the cognitive credit attached to these practices in order to maintain their own identity.

The analysis presented in chapters Three and Four emphasises two successive instances of usurpation of status symbols by natural history film-makers in order to appear trustworthy. Kearton with the imperial big game hunting elite was the first one, the NHU with Peter Scott was a second one. *Life on Earth* can be seen as a third instance of the same mechanism, this time the NHU being seen usurping the symbols of scientists' cognitive status so as to appear credible. As a consequence, natural history film-making stands as a knowledge producing activity, making the research work of scientific practitioners disappear from the public eye.

In the next chapters, we will examine two natural history films and their making, the BBC series, *Big Cat Week* and the feature film *Winged Migration*. In both case we will examine strategies implemented in order to convince viewers of the trustability of the film-maker or of the BBC presenters. As will appear, many of the values and beliefs associated with natural history film-making since its beginnings in the early years of the 20thC will be seen to play a significant role in both cases. And the contrast between on the one hand the BBC series *Big Cat Week*, and on the other *Winged Migration*, made outside an institutional framework comparable to the NHU, will allow to assess the role an institution like the NHU plays in granting expertise of the natural world to individuals who can thus stand as legitimate spokespersons for nature and favour a particular way of looking at the natural world (Jasanoff, 2003).

Chapter 5

Experts in the wild. Displaying intimacy with nature

> 'Science and technologies are remarkable not because they are true or efficient [...] but because they multiply the nonhumans enrolled in the manufacturing of collectives and because they make the community that we form with these beings a more intimate one.'
>
> (Bruno Latour, 1993:108)

Big Cat Week is a series produced by the BBC Natural History Unit (NHU).[1] It tells the stories of big cats living in the Maasai Mara National Reserve, in Kenya. It is a presenter led show: a team of three, expertly interprets the behaviour of the cats for us, the audience, resituating it in its ecological context. During most of the programme the animals are shown rearing their youngs and hunting to feed them (and themselves). The stories are gripping and the series very entertaining. *Big Cat Week* offers the possibility of a strong emotional involvement and encourages attachment to the characters. Central to the mechanisms employed to awaken such feelings is the concern for the survival of the cats, especially the cubs. *Big Cat Week* insists on feelings and emotions rather than on knowledge in a more blatant manner than most natural history programmes might do. This chapter will define the form of expertise exemplified in these films, the categories of knowledge it is related to, and the categories of evidences provided (Lynch & Cole, 2005), and will suggest interpretations as regards the presenters' engagement.

Adopting the visual anthropological approach defined in Chapter Two, which invites to look at both the contents and the context of the visual artefact under scrutiny, we will give a brief description of *Big Cat Week* and

---

[1] The analysis bears on the three seasons broadcast in 2004, 2005, and 2006.

of the practical aspects of its making, and comment on the programme in general, highlighting the main themes employed in the narration. We will then resort to elements which deliberately serve to position the natural history films genre within society, and examine the series' website, before concentrating on the shaping of the identity of the telenaturalist in the light of both the programme and its support material. We will attempt to define 'the framework of images and conventions' (Tudor, 1981) employed in the series to convince us of the expertise of the film-makers, and shed light on several factors: familiarity with the place, intimacy with the object of study, ability to resist the temptation to treat wild animals as pets. In *Big Cat Week*, the presence of scientific knowledge is not made obvious, academic credentials appear of no use in the field, however, a closer look will reveal that the 'disappearance of science' (Irwin and Wynne, 1996) is only apparent and that behavioural ecology is pervasive in the stories, not least as 'a general ideological support' (Irwin et al., 1996:49). This observation will lead us to examine a potential consequence of such "burying" of knowledge developed by Western scientific practitioners in stories set in a non-Western region. We will thus suggest that by giving the status of norms sanctioned by narratives to categories which only make sense in the framework of Western science, *Big Cat Week* silences and renders invisible the local knowledge of the Maasai population. Finally, as a matter of conclusion, we will investigate how the expert status of the telenaturalists allows them to act as spokespersons for the big cats (Latour, 2004) thus contributing to rallying viewers to the cause of a network of conservationists and actors of the leisure industry who protect the Maasai Mara reserve as an asset rather than a space to live in.

Big Cat Week – A Natural History Series

Big Cat Week's makers present it as a week-long "armchair safari", and claim that the objective of the programme is to reproduce for the viewers the experience of spending a week in Africa, in a natural reserve, observing big cats. With *Big Cat Week*, we are in the presence of an object displaying

some of the most traditional themes of the culture of natural history film-making: observation of wild animals behaving in their natural habitats, travel to exotic location, emotional engagement with the subject (see Chapter Three).

The first series was broadcast in 2004. The programme in its present format is the result of a previous formula inaugurated in 1996 under the title *Big Cat Diary* as a series of eight half-hour programmes, broadcast over several weeks, on Sunday afternoons every other year. At the time, the programme was a BBC/Animal Planet co-production. A BBC crew would spend 70 days in the Maasai Mara Reserve filming three species of big cats. Save the transmission schedule, the principle of the programme was the same: the audience would follow the daily life of a pride of lions, and of cheetah and leopard females with their cubs. TV executives having concerns about the ratings, the format changed in 2004.[2]

> 'With *Big Cat Diary* we knew we'd got natural stories but we weren't making cliff-hangers. So the producer went to *EastEnders* for advice on how to make it more gripping. We've had to improve storytelling. We can't just rely on beautiful photos, that just won't work any more. […] *Big Cat* was very successful and we moved it across to BBC1 as *Big Cat Week* and got 6 million viewers across a week, putting it firmly in the top ten.' (BBC NHU producer Alastair Fothergill quoted in Coward, 2005)

In the March 2006 issue of the specialised Newsletter *WildFilm News*, Neil Nightingale, head of the BBC NHU, further explained:

> 'TV audiences are now too sophisticated and complex for us to rely on just one type of programme. Competing in peak time it's important that we learn from the success of other genres, and where better to start than some of the most popular TV shows of all, the soap operas? Animal diaries, with emotionally charged storylines that still maintain their scientific accuracy and documentary integrity, do just that. Full

---

[2] Apparently following a disengagement of Animal Planet from the co-production partnership for *Big Cat Diary*.

of real characters, dramatic action, story hooks and cliff-hangers, *Big Cat Diary* has been a roaring success with early evening audiences […]' (Nightingale, 2006)[3]

Big Cat Week, is made according to the following principle: each year during the dry season, between July and October, a team of approximately 30-40 persons, BBC staff as well as a few local people, spends one month in Kenya in the Maasai Mara National Reserve. There, staying in one of the numerous safari camps owned and ran by safari companies[4], they film lions, leopards, and cheetahs on a daily basis. Each species is followed by a specific team comprising a presenter and several camerapersons, a sound engineer, a producer, and so forth. A cameraperson is specifically attached to each presenter to record his or her reactions in the face of events. Footage is edited at the camp, voice over commentary recorded, constructing the five half-hour episodes which will represent a week in the life of the big cats. Narration is about animal characters, which are given names, clearly individualised. The story lines revolve around their destinies.

As is now customary with television programmes, parallel to *Big Cat Week* is a website.[5] More than a continuation of *Big Cat Week*, it aims at organising the viewers' experience through various supplementary pieces of information which tend to influence and fashion our reception of the series. Behind the scenes video-clips as well as diary entries by members of the *Big Cat Week* team present the shooting in progress and provide a glimpse of life on location. For example, a clip presented as 'Simon King shows you

---

[3] The soap format indicates that the NHU hoped to attract a distinctively working-class audience (Hobson, 2003).

[4] Governor's camp. As the travel journalist Brian Jackman indicates in a paper published in the *Daily Mail*, it is installed 'on a site formerly reserved for the exclusive use of Kenya's colonial governors and royal visitors' (Jackman, 2001). On this topic see also Christophers (2007).

[5] http://www.bbc.co.uk/bigcat/. Since the time of writing, the website has been revamped so as to reflect the changes which occurred in the fifth season of the programme: the departure of Saba Douglas-Hamilton and her replacement by BBC journalist Kate Silverton and '[born] in the heart of the Maasai Mara' Jackson Looseyia.

round his "compact and bijou" home from home'[6] offers a guided tour of the car he uses when following lions. Subscribers to the website's newsletter can ask questions about the series, the animals, the day-to-day interaction of the team with the cats, which the film-makers later answer in video-clips accessible on the web page.[7] This website therefore confers on the making of the series a transparency which goes along with an omnipresent set of strategies of disclosure in the series, to an extent rarely witnessed in more traditional programmes. In an apparent paradox, a wealth of unveiling of the machinery and the human intervention implicated in the making of the show accompanies a narration staged to the utmost. In *Big Cat Week*, many conventions associated with natural history film-making are relinquished, in particular that 'the artifice of civilization must be hidden, for any sign of artificiality would destroy the illusion of this recreated nature as God's place of grace' (Mitman, 1999:208). But this is done in such a controlled manner that instead of being undermined, what could be called the naturalising effect of natural history films is strongly reinforced. Furthermore, offering the viewers brief insights into the machinery involved in the making of the series—here a car appearing in the frame, there an unsteady image, or a cameraperson filmed filming—suggests that nothing is concealed. Making backstage drudgery visible renders implicit the notion that no technical means is involved in deceiving the viewer, and that everything shown is real life. The viewers are thus led to think that the success of the performance lies entirely in the skills and expertise of the performers (Morus, 2006).

Of course, *Big Cat Week* being about animals, individualised with a name, the main part of the website is devoted to the various cats featured in the series, past and present. This contributes not only to giving them the

---

[6] Since the update of the website, this particular video-clip has been removed. Others of the same type can be accessed on http://www.bbc.co.uk/bigcat/video [last accessed 17 April 2009]

[7] One could argue here that video-clips are used so as to avoid the establishment of a relationship between the presenters and the individual members of the audience. Questions are answered several at a time and these replies are not personal but public. The question becomes a participation in the spectacle because it prompts an act by the performer (Schechner, 2003).

thickness of real characters, but to asserting the idea that for more than a decade the same group of people has been going to the same place to follow individual animals from the same populations, and their descent. A summary of the stories told about each individual since the beginnings of *Big Cat Diary* eleven years ago is provided, as well as, when relevant, genealogical information. In the case of the most recent animals the account is usually supplemented with information about what they have been up to since the shooting. And in the case of deceased cats, whom were first encountered long ago when they were cubs, it amounts to a whole individual life history. Such presentation of the animal subjects can be analysed as another instance of the relationship of mutual acknowledgement, of enculturation of the animals (Rees, 2007b) which, as discussed in Chapter Three with relation to Attenborough, is a means for natural history film-makers of standing as knowledge-producers, for they favour the creation of collectives of humans and non-humans (Latour, 1993; Haraway, 2007).

Insisting on the programme's long term relationship to the animals seems to produce two effects. First, it transforms a long running TV programme into a long term project of observation of predators in the field. And it presents a location which has been delimited and maintained as an ethnic reserve (Waller, 1984; Spear and Waller, 1993), then as a hunting ground for the European social elites (MacKenzie, 1988), finally as a tourist resort for wealthy Westerners longing for "pristine" wilderness, as a space used to expand the knowledge of the ecology and behaviour of African carnivores. The fashioning of the Maasai Mara reserve into a place of public knowledge-production contributes to presenting the process of setting it apart, not as mundane and motivated by mercantilist concerns, but as adorned with the qualities traditionally attributed to the practice of science, mainly disinterestedness and a kind of otherworldliness (see Chapter One). Second, the presentation of the animals through their individual histories and their genealogy endows the film-makers with a status comparable to that of long-term field researchers of animal behaviour. Repeated stays in the reserve have made them well acquainted with the animals, they become, in their own words, 'our big cat experts'. A parallel could be drawn with

long term presence on field sites—which plays an important role in building field researchers' expertise of the animals they are observing—were it not that the confidence expressed by the film-makers contrasts sharply with the intellectual uncertainty and practical insecurity related to conducting behavioural observation on a site of field research over a long period of time, as described by Amanda Rees about primatologists (Rees, 2006a). This points towards a characteristic of the telenaturalist: he or she is a producer of certainty (Collins, 1987). In *Big Cat Week*, expertise translates as the ability to interpret with certitude the cats behaviour. This ability does not build on academic credentials but on an intimate knowledge of the animals; the film-makers are intimacy-based experts. The following section will now consider how we, the audience, are led to accept the three presenters' claims to expertise.

The telenaturalist: signifying intimacy and asserting expertise

Building a narrative

Installing the natural history film-makers appearing in *Big Cat Week* in the tradition inaugurated by Kearton and Attenborough (see Chapter Three), newspaper articles[8] tell us a story of intimate knowledge. Whether born in

---

[8] The list is not exhaustive but see for example:

About Saba Douglas-Hamilton: Blackhall, S., & Sawer, P., 2002, 'Why Saba's a natural queen of the jungle', *The Evening Standard*, January 3, 2002; Peek, L., 2002, "Wild child' to succeed Attenborough', *The Times*, January 4, 2002, Section: Home news, page 7; Clayton, J., 2002, 'Out of Africa, the new queen of nature TV - Interview', *The Sunday Times*, January 6, 2002, Section: Features, Page: News Review 7; Oldham, J., 2002, 'My life among the chimpanzees, by Scottish family's latest wildlife expert', *The Scotsman*, January 4, 2002:5; Keal, G., 2002, 'Getting Chummy with the chimps', *The Daily Mirror*, January 5, 2002; Blundell, N., 2002, 'The woman chosen to succeed David', *The Express*, January 5, 2002; Blundell, N., 2001, 'Bush Babies', *The Daily Telegraph*, December 29, 2001:62; Phillips, M., 2002, 'Bush babe - Interview', *The Sun*, January 4, 2002, Section: Features, Page: 32.

About Jonathan Scott: Scott, 2000, 'The beautiful game', *The Daily Telegraph*, November 11, 2000; Dunk, 2006, 'My walk on the Wild Side', *The Daily Express*, April 4, 2006.

About Simon King: Blundell, 2002, 'Dramas on our doorstep', *The Daily Telegraph*, November 23, 2002:15; Pratt, 2007, 'King of the Jungle', *The Northern Echo*, April 4, 2007:27; Mouland, 2004, 'Cheek to Cheetah', *The Daily Mail*, October 1, 2004; Fiaca,

Kenya (Simon King and Saba Douglas-Hamilton) or having lived there for ages (Jonathan Scott), they are all long terms observers of wild animals, in particular of East African fauna, either by profession or by family tradition. Former resident naturalist in the Maasai Mara reserve, Scott is now a celebrated wildlife photographer, King started his career as a wildlife cameraman as a teenager, whilst Saba Douglas-Hamilton got her experience quite literally at her mother's knee. Daughter of a famous elephant student and conservationist[9], she began her life with an almost mythical episode; when she was six weeks old, her mother introduced her to a female elephant the parents called Virgo:

> 'Virgo was special. She already knew and trusted Saba's father, Iain, and mother, Oria, who lived and worked in Tanzania's Lake Manyara national park. So it was natural for one new mother to introduce her first-born to another.
>
> Virgo came forward slowly, with her calf padding alongside, and ran her trunk gently over the tiny new body, sniffing curiously. Smell is the elephant's primary sense and Virgo undoubtedly remembered the scent of Saba long afterwards.' (Blundell, 2002a)

This story recalls, but in reverse, "the Christening", a photograph showing Delia Akeley—Carl Akeley's wife—being anointed on the forehead with the pulp from the tusk of the first elephant she had just killed, and described by Donna Haraway:

> 'Here is an image of a sacrament, a mark on the soul signing a spiritual transformation effected by the act of first killing. It is a

---

2001, 'Night Vision – Interview', *The Sun – The TV Mag*, October 20, 2001: 27; Keal, 2001, 'King and Country', *The Daily Mirror,* October 13, 2001.

[9] In his discussion of how Iain Douglas Hamilton managed to stand as an internationally recognised expert in elephants after presenting himself as able to recognise individuals to whom he had an intimate relationship, Gregg Mitman (2006) emphasises the role played by the photographs taken by former fashion photographer Oria Douglas-Hamilton. They represented individual elephants as models and were broadly diffused in popular media. This study allows Mitman to suggest that fashioning themselves and their object of study into celebrities through the use of the conventions of popular film and photographs, leads ethologists to transform the way they work in the field and get funded for their research.

> sacred moment in the life of the hunter, a rebirth in the blood of the sacrifice, of conquered nature.' (Haraway, 1989:51).

But whilst Delia Akeley's story was about blood, death, and sacrifice, Saba Douglas-Hamilton's is about a newborn and the breath of a living wild animal. In some mythologies, the creation of the human beings occurred when the creator breathed life into inanimate clay statues. From this foundational event, Saba Douglas-Hamilton draws part of her expertise of animals, she is 'a natural' as the title of one of the newspaper articles proclaims (Blackhall & Sawer, 2002). She has been raised amongst wild animals in Africa, and

> 'if you grow up in the wilderness with animals then they become very normal to you. You learn their behaviour and you learn how to act when you are around them. It just gets assimilated into your consciousness.' (Oldham, 2002).

The newspapers furthermore remind us of the film-makers' CV. And if Scott and King have often appeared in BBC natural history productions since the 1980s and are both familiar figures to British natural history television audiences, the media rejoice in recalling Saba Douglas-Hamilton's recent debut in the reality TV documentary *Going Ape*.[10] Finally, the three presenters are portrayed as having a discourse tinged with conservationist rhetoric, with a particularly fierce opposition to hunting. The most vocal of them being Douglas-Hamilton, who for instance refers in interviews to the massive elephant poaching of the late 1970s-early 1980s in Tanzania and Kenya as 'the elephant genocide' (Blundell, 2001). Introduced with such good stories, Douglas-Hamilton, King, and Scott could almost be

---

[10] Her first appearance on TV was in what was described as a "reality TV documentary", *Going Ape*. Together with BBC NHU producer Alastair Fothergill, she spent five days in the Ivory-Coast rainforest, trying to follow a group of chimpanzees and to live like them. Their only "equipment" was their clothes, a pair of waterproof sleeping bags and miniature cameras. Otherwise, they had to rely on fruits and insects for their food and on the chimpanzees' alarm calls to avoid predators. As a "christening" over the fonts of natural history television, it is very difficult not to see this first appearance as an attempt to connect her with famous primatologists Jane Goodall, Diane Fossey and Birute Galdikas, who all spent time in the forest in the intimacy of apes, thus suggesting that she was one of them. Though, in an interview, co-adventurer/presenter Fothergill said: 'We had distinct roles, I as the primate expert and she as the survival expert' (Blundell, 2001).

seen as fictional characters involved in a 'factual' television programme (McArthur, 1981), and they provide us with hints and easily recognisable signs helping us figuring out what their role is.

At home in the Maasai Mara: showing intimacy with the place

At the beginning of each week, we are reminded that 'the big cat team' has been going there for many years. Each presenter expresses his or her pleasure to be back:

> 'It's just so good to be back in the Mara. I've been coming here for more than 25 years and I've always said to people, "If I only had one day in Africa, I'd spend it right here"' (I,1, 02:20-02:30)

Another way of making palpable the fact that one is at home somewhere, and an obvious one at that, is the ability to circulate in this place without getting lost and without the help of a map. Significantly, this capacity to always know where one stands and how to get somewhere else from there without the slightest hesitation (quite a task considering the vastness and the lack of landmarks) translates in countless images of the film-makers driving a car on a dusty track. Not simply standing or walking in the bush addressing the camera, or hiding in a thicket as other presenters might choose to do, but driving. Numerous sequences show one of the presenters prompted to go somewhere on the basis of almost inaudible indications delivered through a crackling radio by a spotter[11]. One of them involves Saba Douglas-Hamilton in her search for a leopard:

> [Saba:] One of our spotters has just sighted a leopard. Totally worth following up.
>
> [Man (on Radio)] … *before the double crossing, to the right. And I see one track* [Saba seemingly listening with attention and waving a

---

[11] The programme is very vague as to who the 'spotters' are. From what can be pieced together, some are local people, professional safari guides and drivers, employed at the camp where the BBC people stay during the filming. But others are friends or relatives of the presenters, people accompanying the team. For example Jonathan Scott's wife, Angela Scott, is a spotter for the series, and at the same time, as a professional photographer, she takes pictures which serve to illustrate the support books for the series. The programme presents the spotters as a network of 'eyes' allowing to cover a wide area.

hand as if to indicate the multitude of possible directions] *You go over that and then to the bottom of the ...*

[Saba:] Ah! We're going into a completely different part of the Mara. Trying to find directions. People saying, "Rocks on a hill. Go by the euphorbia tree. You'll come to a river crossing." Somewhere in all of this. [Leaving the track] I've really got to get a move on. Maybe if I take a short cut here. (I,1, 08:00-08:40)[12]

Through this sequence we are invited to acknowledge the presenter's ability to understand cryptic indications referring to landmarks seemingly devoid of any particularity, and which we suppose are very common in the area. The treasure hunt tone of the commentary is reinforced on purpose by the presenter, who asserts her extended geographical knowledge of the area first by being able to recognise a "completely different part of the Mara" then by taking a "short cut". It is thus made clear that she holds a precise mental representation of the reserve as is the case for us with the spatial configuration of our neighbourhood or our hometown.

Knowing the animals

Having made plain their familiarity with the topography, our presenters demonstrate on several occasions an equal familiarity with the reserve's principal inhabitants: the cats. For instance, in his introductory commentary, Simon King talks about the lions he will follow:

> 'I haven't seen them for some time. And I'm looking forward to catching up with the family again' (I,1, 02:08-02:11)

Given the fact that, as mentioned in the first section of the chapter, each season portrays a different pride, such comment on the part of the presenter suggests that he is engaged in a continuous relationship to all the prides

---

[12] The transcripts from the series are referenced as follows: the Roman digits refer to the week, the Arabic digit refers to the episode in the week, then the approximate time limits of the sequence are indicated. These refer to the BBC/2 Entertain Video DVDs of *Big Cat Week*, week 1 & 2 (2006); week 3 (2007). Week 1, original transmission date 05/01/04-09/01/04; week 2, original transmission date 03/01/05-07/01/05; week 3, original transmission date 10/07/06-14/07/06.

present in the Maasai Mara, and that this relationship extends beyond the shooting.

Another obvious way of stating any kind of familiarity with the cats is clearly the ability to recognise individuals and call them by their names. As Jonathan Scott wrote in an autobiographical piece: 'Over the years, we have come to know many of the animals of the Mara intimately, and we know most of the lions in our area by name' (Scott, 2000). Of course, instances of identification abound, such as:

> 'Somewhere around here, hiding in the long grass is another very special cat. This is Bibi. She's a young lioness, and we've known her ever since she was a cub. Looking at her and the way she is behaving, it looks to me as though she could be a mother, and if that's so, it's her first ever litter.' (I,1, 15:00-15:30)

The example above illustrates three modes of expression of the familiarity with the animals: the ability to name an individual, the capacity to interpret the behaviour so as to discover, without being told, the state of motherhood of the animal, completed by the reminder of a common past. At one point in the first week, Jonathan Scott produces a photo album with pictures of cheetahs:

> 'Look. December last year. That's what these three little nine-month-old-cubs looked like. Can you imagine? Eyes aren't even open. These tiny, little cubs. These are these beautiful nine-month-old cubs that we're now watching when they were less than a week old.' (I,4, 17:10-17:44)

What the presenter shows us is the equivalent of a family photo album with on one page photographs of cheetahs joined by lines to form a genealogical tree. This scrapbook is used as a recording device of the cheetahs' family history. Similarly, in the first episode of the second week, Saba Douglas-Hamilton exhibits a portable DVD player and displays footage of a leopard cub from the previous year.

> 'Oh, look at that. What a treat to see him. I've actually brought some footage of last year. What he used to look like. The most wonderful, mischievous bundle of fun. It's hard to imagine that that tiny, fluffy

little cub we were watching last year is now this young male who's almost an adult.' (II,1, 09:00-09:27)[13]

In both cases, there is an attempt on the part of the film-makers to make the viewers partake in the personal history of the animals.

Another sequence allows us to witness the expert at work and the tools and methods used in the field to identify individuals. This occurs during the second season, but as in any soap opera, to understand the story one needs to go back to the preceding season. One of the heroines of the first season, was Bella, a female leopard, who had two cubs. When the following year the BBC came to shoot the second season, only one cub remained, Chui. His nameless sister had gone missing six months before, people working in the reserve all year round told the BBC crew. But in the fourth episode of the second season, a spotter reports that he has seen a female leopard looking very much like Chui. Informed, the team rushes to the place where the female leopard has been sighted and Saba Douglas-Hamilton tries to identify her by comparing her face to different sketches representing the faces of different leopards[14]:

'What I have to do now is to see if her face matches any of the leopards that we know who are in the area. Okay, now, let me have a look at that beautiful face of hers. She's got two spots, just by her nostrils there. Two spots. Yeah, this is beginning to match up. She has an arc across her nose of spots, sort of in a "W" shape, And these are two whisker spots on either side of her nose. So I'm afraid that it's not our little girl. It's another leopard. A female who lives just on the border of Bella's territory.'(II,4, 15:56-16:43)

---

[13] In both cases the images of the cubs are compared to the grown-up individuals. Each examples are echoing, in a sense, primatologist Jane Goodall's statement that she 'has been privileged [...] to compile the history of a group of beings who have no written language of their own' (quoted in Rees, 2007b:890).

[14] The technique of identification of individuals demonstrated in this sequence, the comparison of the pattern of spots on the face of a leopard to those of known individuals, is the actual technique used by researchers in the field. Indeed, each individual presents a distinctive facial mask (on the description of this technique of identification see Miththapala, et al., 1989).

It was a false hope, the female is not whom they thought she was, she remains nameless, and off they drive to another location.

Human artefacts in 'a Pleistocene vision'

This constant driving adds to the telenaturalists' intimacy with the Maasai Mara reserve in the sense that cars have become objects familiar to the cats. Far from deterring the animals, they seem to be recognised and their presence accepted. On many occasions the cats are seen lying in their shade during the hottest hours of the day. Or a lion is shown inspecting the scent of one car as if it were a landmark in his territory. Cars almost play a part in the series and the fact that the film-makers positively live in their vehicles is suggested by several sequences such as those showing them eating a meal, or holing themselves up during a thunderstorm. This may seem paradoxical in a programme with strong conservationist and environmentalist leaning.[15] Since the beginning of the 20thC, the democratised access to nature made possible by the car (Allen, 1994; Bunce, 1994; Urry, 1999) has indeed been blamed as a cause for the ever diminishing game population. In 1929, Cherry Kearton noted:

> 'Six years ago, in the Introduction to my book *Photographing Wild Life Across the World*, I said that "animal life (in Africa) is disappearing at a rate that would astonish the most casual observer." To my great regret I must now record that the present position is even worse. And the reason is, to a large extent, the introduction of the motor-car as an aid to the week-end sportsman. In the old days, the number of miles that a man could march limited the number of

---

[15] Gregg Mitman (2000) discusses how the 1950s Disney's series of natural history films *True-Life Adventures* created 'an image of intimate contact with nature' for the audience by eliminating from the screen 'any sign of human presence or any hint of artificiality'. With *Big Cat Week* we are thus faced with an apparent contradiction, the intimacy with nature being enacted on screen by the film-makers through the use of an eminently human artefact, the car. (The quotes are taken from page 423).

> animals that he shot: but to-day he can travel many times that distance by car' (Kearton, 1929b:17)[16]

Big Cat Week is supposed to show us 'a Pleistocene vision, life as it must have looked before man stepped upright into the savanna' (Scott, 2000), a wilderness 'close in its dream quality to space' (Haraway, 1989:136). '[A] moving private-in-public space' (Urry, 2002:6), the car as an enclosed fragment of intimacy could be compared to a space capsule or a small bathyscaph, two vehicles essential to humans venturing into environments where they have no place, where they cannot survive naked. It is thus not the iconic symbol of Western industrial modernity (Urry, 2002) which is put centre stage, but a protective envelope which reinforces the feeling that humans are alien to this pristine and unspoiled nature.

In *Big Cat Week*, it could look like the animals are habituated not to the humans but to the cars. A leitmotif in the programme is the cheetahs stationing on the roof of Jonathan Scott's car, which once prompts his question: 'Is she a wild cheetah?' and the reply:

> 'You better believe it. This is a cheetah who hunts, who does everything that you would expect to see a cheetah in the Mara doing. The only difference is she uses these cars to her advantage. They have been part of her life for six years, ever since she was a tiny cub.' (I,1, 4:37-5:00).

In a subsequent episode, Scott goes as far as to compare this human-made artefact to a "termite mound", albeit a mobile one, thus ascertaining the idea that cars are integrated in the wild cheetah's environment and could even be an advantage.[17] The car always stands between the film-makers and the cats as if to prevent any potential physical interaction between humans

---

[16] The quote is also an illustration of the anti-modernist—almost technophobic—stance often associated with the natural historical approach to nature in the late 19thC-early 20thC. An echo can be heard in an interview Jonathan Scott gave in 2006: 'If you get totally immersed and involved in technology and gadgets and wizardry and the best cars and the best phones, you are distancing yourself from what we really are' (Dunk, 2006).

[17] The fact that cheetahs "treat" cars as if they were part of their usual surroundings is expressed in an almost farcical tone by an event repeated on several occasions in the two first seasons. The cheetah Kike relieves herself through the opened roof hatch inside the car on a chuckling Jonathan Scott.

and animals. The human artefact protects the animals from the human beings.

> 'It would be just so tempting to actually reach up and touch her. But it is an absolute no. You never do that. That would break the boundary. This is a wild cheetah.' (I,4, 06:25-06:34)[18]

Interaction is strictly forbidden, the boundary between humans and wild animals must remain unbroken. And expertise is also enacted as the ability to respect this taboo, one could say to resist the temptation. Saba Douglas-Hamilton is very often shown watching the leopards living on the river bank from the other side, that is with a physical barrier between her and the animals.[19] One notable exception is a scene in the third week (third episode) where a leopard hunts, and Saba Douglas-Hamilton 'can't move because [she is] right in the middle of a hunt' (08:23) whilst the leopard is shown passing meters from her car. As for Simon King, being originally a wildlife cameraman, he is mostly seen watching animals through a camera equipped with a telephoto lens. Distance keeping could not be better expressed. This again provides a very telling illustration of the superseding of the sense of touch by the sense of sight which accompanied the emergence of popular natural history in the 19thC and the evolution of natural history into an overwhelmingly visual discipline (Bleichmar, 2003) establishing as natural a distance between the observer and the observed (Noordegraaf, 2003) (see Chapter One).[20]

---

[18] This reminds us of the "price" paid by Jane Goodall for instance for having interacted with wild chimpanzees. The males chimpanzees at the Gombe research site are now so used to female researchers that they include them in their domination strategies and it has become physically dangerous for female researchers to come and study there. (Amanda Rees - personal communication)

[19] This is not without reminding of the moated enclosures in a naturalistic zoo (see Chapter Two). And Saba Douglas-Hamilton could be said to be in the same situation as a zoo visitor.

[20] Citing Guy Debord, "Since the spectacle's job is to cause a world that is no longer directly perceptible to be *seen* via different specialised mediations, it is inevitable that it should elevate the human sense of sight to the special place once occupied by touch; the most abstract of the senses, and the most easily deceived, sight is naturally the most readily adaptable to present-day society's generalised abstraction." (*The society of the spectacle,* section 18, *in* Crary, 1990:19) art historian Jonathan Crary points towards this

There is however a sequence in which Jonathan Scott emerges from the roof hatch, and stands there with a cheetah seated just inches from him on top of the car. In the commentary he dreamily meditates in a hushed voice on what passes through the mind of a cheetah observing the plain, on how it is to be a cheetah.[21] He never touches her, and his monologue underlines the unreachable otherness of the cheetah. It is as if, standing this close to a wild cheetah and being able to resist the temptation to touch it, the film-maker had reached a kind of high level of trustworthiness.

This link between the management of affective impulses and the credibility of the presenter is further exemplified by the affirmation that humans should not—and cannot—intervene in animal affairs, however excruciating this might prove. On two occasions in the series this rule is explicitly stated and staged, almost in the same manner. In the first one, two lion cubs are about to be discovered by nomadic males. This could lead to their death. When these threatening males are dangerously close, Simon King addresses the lioness in a truly dramatic fashion:

> 'Oh, no. Bibi, I'm sorry. Nothing we can do. […] There's so nothing we can do now.' (I,2, 26:00).

The second instance involves a cheetah cub, threatened by baboons. The cub is four or five weeks old and has been constructed as the star of the series. As was the case in the previous example, should the cub be found by the aggressors, he will be killed. This is a deadly hide-and-seek. At one point the outcome seems inescapable: the cub will be discovered and devoured. The presenter urges the cub:

> 'Toto, please get into cover. You've got to keep your head down. […]
> I mean, this is agony. You know, and we always say that you cannot

---

'autonomisation of sight' as the historical origin of the regime of 'spectacular consumption' characteristic of the visual culture of modernity (Cary, 1990:19).

[21] In their introduction to the volume *Thinking with animals*, Lorraine Daston and Gregg Mitman (2006) point towards this function of natural history films as tools helping us imagining what it is like 'to jump out of one's own skin, exchange one's brain, plunge into another way of being' (p.8).

interfere. *It's not fair*. But your heart is just crying out' (III,2, 28:00-28:27 – emphasis added). [22]

In both instances cubs are at the centre of the episode. Steve Baker (2001) explains that emotional response in human observers is at its strongest with animals displaying juvenile traits—mainly wide eyes, round faces, short limbs and plump bodies. They are also the most popular, which points towards the link between 'the preferred *look* of the animal body' (p.181 – original emphasis), the notion of neoteny, and Konrad Lorenz' theory that a creature displaying the physical traits of infancy will awaken a strong humane parental care response. With the deliberate choice of using cubs to stage the declaration of non-intervention, the exceptionality of the film-makers could not be stated more clearly. This non-intervention is the result of a strong self-imposed discipline of emotional restraint. In the first example, King apologises to an animal, in the second Scott calls the audience to witness of his distress.

Such ordeals, such 'agonies', are part of the process involved in establishing the credibility of the telenaturalist and appear as echoes of the kind of evidence provided by Victorian naturalists to support their claims to cognitive trustability. In his classical social history of *The Naturalist in Britain* (1994), David Allen provides several stunning stories of Victorian naturalists undergoing a very strong self-imposed physical discipline based on the denial of the body. Allen emphasises that these nineteenth-century naturalists behaved 'towards the countryside as if it was a testing-ground for more muscular forms of endurance' (p.67), similarly the Maasai Mara could be seen as a testing ground for more emotional forms of endurance. These themes of suffering, constraint as part of the process of the production of knowledge in the field, standing as a guarantee of objectivity because they express detachment over the physical conditions in which knowledge had to be conquered—in particular the bodily subjectivity of the observer—have been underlined by several scholars in the framework of studies in the

---

[22] The third episode opens on the ending of this scene. Eventually, the baboons leave without harming Toto.

history of sciences informed by gender theory (see for example: Haraway, 1988; Kuklick and Kohler, 1996; Hevly, 1996; Oreskes, 1996). The restrictive management of emotions as staged in *Big Cat Week* could be analysed according to the notion of objectivity understood as 'the will straining against the will [...] [a] tension between personal sacrifice and liberation from the personal, between active intervention in and passive registration of nature' (Daston and Galison, 2007:381).[23]

Interpreting this reluctance to interfere with the animals, physically or otherwise, as the sign of a concern to avoid the subjective bias, of a longing for a disembodied objectivity, does not seem, however, to tell the whole story. For the presenters' own statement that they need to restrain their physical and emotional engagement with the animals so as to avoid 'breaking the boundary', or that interference 'is not fair', suggests a complementary reading. The idea of the existence of a strict boundary between humans and animals, as well as the notion that human intervention in animals' business would be unfair, indeed point towards a specific ideological trend, that of wildlife conservation informed by animal rights thought (Jamieson,1995a; 1995b).[24] This approach advocates in particular that the only way to effectively preserve wildlife 'is to put large tracts of the earth's surface off-limits to human beings' (Jamieson, 1995a:61). As we saw when discussing their role, the cars allow the film-makers to materialise the separation which, they postulate, should be maintained between humans and animals, out of a concern to avoid unfairly disrupting the balance of nature by interfering (see Scott's comment above). This emphasis on the necessity to refrain from intervening, to respect 'the boundary', which could have looked like a belief derived from the ethos of field researchers, turns out to be the expression of a value central to the animal rights movement,

---

[23] Since the publication of Carolyn Merchant's book, *The death of Nature* (1980), it has become common place to point towards the equation of femininity with the emotional approach to nature. It should be noted that Saba Douglas-Hamilton is not involved in any episode comparable to those described for her masculine counterparts.

[24] For a sociological analysis of animal rights activism, see Franklin (1999), especially chapter 9.

which aims at putting an end to any form of relationship between humans and animals (Franklin, 1999). This last observation invites to question the status in *Big Cat Week* of the theoretical knowledge produced by practitioners in the field sciences.

Telling stories with science

Whilst *Big Cat Week* is presented by 'experts', 'science' is apparently not a topic.[25] No references are made to science nor to scientific authority to support the film-makers' claims to expertise. Over the three seasons analysed, the only allusion to scientific practitioners which can be found occurs in the last episode of the third season when Scott briefly exits the Maasai Mara reserve in search for a cheetah. On this occasion he comes across one which at first he mistakes for the one he is looking for. But soon it appears that this cheetah wears a tag in the ear. Scott explains: 'It's one of the ones that the scientists are monitoring.' (III,5, 19:49) and he drives away, continuing his hunt.

Roger Silverstone (1985) begins the fourth chapter of his now classic case study of the making of a television documentary quoting the former head of science programming at the BBC Aubrey Singer, saying:

> 'The televising of science is a process of television, subject to principles of programme structure and the demands of dramatic form. Therefore in taking programme decision, *priority must be given to the medium* rather than to scientific pedantry.' (Singer, 1966, quoted in Silverstone, 1985:160 –emphasis added).[26]

---

[25] Academic credentials are not part of the telenaturalist's paraphernalia. Jonathan Scott holds a degree in zoology but never refers to it, Saba Douglas-Hamilton master's degree is in social anthropology, and Simon King left school at 17 to make his first natural history film. His answer on his personal website (http://www.simonkingwildlife.com) to a question about how to become a natural history film-maker was: 'A genuine interest and knowledge of the subject one hopes to work with is the single most important tool for the job. A zoology degree can open doors but it is not essential (I left school at 17 to make my first film as a cameraman)'.

[26] This reminds us of the boundary work between natural history film-makers and field scientists discussed in Chapter Four.

This quote is important to bear in mind when dealing with television programmes because it provides a fundamental insight into the frame of thought which informs television making. In the words of Silverstone, '[t]hese sentences [...] define an orientation and a practice not just for BBC television but very likely for all non-specialist broadcast television science in the First World' (Silverstone, 1985:160). Applied to *Big Cat Week*, it suggests that many aspects of the narration have been emphasised because they will provide "good television", which can be summed up in one word: action.

This hypothesis finds confirmation in the introduction to one of the support book for the series. For example, it is explained that leopards are filmed with cubs because '[a] leopard with a young cub ensured that there was plenty of activity for us to film' (Scott & Scott. 2003:8). For a female leopard with one or two cubs to feed has to hunt more. And, incidentally, a mother leopard is easier to find on a regular basis than a cubless one: whilst the latter can prove very elusive and may remain unseen for days, even weeks, and prefers to hunt at night, the former will be more convenient for a television crew because she tends to stay in the vicinity of the place where she keeps her offspring. When, as is the case for the BBC crew, the number of days available to shoot in the field is limited, it saves time to know where a leopard can be found and it ensures more footage actually showing a leopard.

Similarly, filming during the dry season, at the height of the migration of wildebeests and other herbivores may produce an image of the African plain teeming with wildlife. But again, it is a choice guided by the need to find action in front of the camera: 'The presence of the migration helps to guarantee plenty of action, particularly at favoured river crossing sites' (Scott & Scott, 2003:11). Besides, the high number of herbivorous animals coupled with the fires, frequent during the dry season, 'knock down the long grass and make it easier for us to find the predators' (p.10). In fact, to the makers of *Big Cat Week*, a drought of high magnitude is preferable to a reasonably damp dry season because the Maasai Mara reserve becomes the only place in the whole area known as the Serengeti-Mara ecosystem where

herbivores can find grass and water (Lambert and Reid, 2004). As geographer David Campbell emphasises, the areas chosen to establish national parks and game reserves all have in common to be areas enclosing 'water and pasture resources which had formerly been used as dry-season areas by Maasai' (Campbell, 1993:262). Referring to a shooting in 2000, Scott writes:

> 'When it was decided to film a fourth series of *Big Cat Diary* in 2002 I wondered how on earth we could compete with the kind of scenes we had filmed two years earlier. *Droughts of that magnitude come along only once every five to ten years,* and with people now talking of an El Niño, I had visions of it being really wet. I imagined acres of long grass greeting us… which in turn was likely to yield a dismal migration – and very tough times trying to find the cats.' (Scott & Scott, 2003:13-14 – emphasis added)

The drought which provided the makers of *Big Cat Week* with such stunning images in 2000 was catastrophic for the local Maasai population's livestock. A study conducted at one of the ranches around the reserve indicates that it reduced cattle number from 40.000 head in 1997/98 to 14.000 head in 1999/2000 (Lamprey and Reid, 2004).

Big Cat Week can appear as the result of the conventions and constraints associated with televisual programme making, not necessarily dictated by any ideological commitment. It nevertheless offers a very specific picture of Africa. One central element in the painting of this image appears to be the knowledge film-makers use to tell their stories. Underlying the individual life histories, the 'real-life drama, with the script completely written by our animal stars' (III,1, 1:59), the narrative in *Big Cat Week* is implicitly informed by sciences such as behavioural ecology and conservation biology. This interpretation is at least suggested by the following commentary extracted from an anniversary documentary broadcast to celebrate the ten

years of the programme. The words are spoken by Saba Douglas-Hamilton[27]:

> 'You have a unique situation here, which is that, for the last 10 years, the BBC have been following known cats and their family dynasties. And that's something that normally a very few, selected handful of scientists has the privilege of being able to do.'[28]

A textbook in behavioural ecology applied to conservation biology (Caro, 1998) indicates that the main concepts used in this field of scientific investigation are competition between males, mate choice by females, mating systems, parental care and sex allocation, dispersal and inbreeding avoidance, cooperation and helping. The method of investigation of these concepts relies on the recognition of individual animals, which can be complemented by techniques of DNA molecular analysis, with the aim to construct animal life histories.

> 'Behavioral ecology focuses on the adaptive significance of variation in individual behavior, morphology, and physiology which has forced scientists to learn to recognize individual animals. Consequently, all the individuals within a subpopulation are often known to researchers…' (Caro, 1998:14).

The previous section of this chapter made clear that the film-maker's expertise stems partly from their ability to recognise individuals. As for the concepts informing this field of investigation, they are all put at work to structure and organise descriptions which otherwise would not make any

---

[27] As mentioned earlier in this chapter, Saba Douglas-Hamilton is the daughter of Iain Douglas-Hamilton, world famous student of the behaviour and ecology of elephants. The argument that being the daughter of a very renowned zoologist she knows what she is talking about, as if expertise in things related to nature were transmitted by direct filiation, serves here as an illustration of the strategy employed in the media blitz organised by the BBC when launching Saba Douglas-Hamilton's career to convince us that we were guided in the field by a genealogically certified expert. Nevertheless, it does not of course undermine the quotation as a valid evidence that the knowledge conveyed in *Big Cat Week* is behavioural ecology.

[28] *Big Cat – The Big Story* (DVD), BBC/2 Entertain Video, 2007. The fact that the possibility to study animals in the field is given as being a privilege, reserved to a 'handful' of lucky scientists, reminds of the idea that access to nature in the West is a social stake, and tends to be restricted to an elite. See next chapter for a further discussion of this notion.

sense. Leopards and cheetahs, which are solitary cats, are addressed mainly from the perspective of parental care and investment in offspring. On countless occasions we are reminded that the rate of success for a female cheetah or leopard in bringing her offspring to adulthood is very low. A great emphasis is put on the fact that the mother spends a lot of her energy hunting to feed her youngs. Family life is evoked in terms of costs for the mother, and benefits for the cubs. The entire second season, however, is devoted to describing the advantages of cooperation and helping for young cheetah sub-adult siblings.

Similarly, the portraits of the prides of lions also provide the opportunity to insist on the co-operative mode of organisation of the group and on the numerous advantages 'the only sociable big cat' gets from it. Greater quantity of meat, collegial care taking of the cubs, reinforced protection and overall enhancement of the reproductive success of the pride. But sociability has its downside: 'the white-hot cauldron of competition where no quarter is sought or given' (Scott & Scott, 2003:17), competition between individuals within the group, in particular for access to a share of a kill. Lions also provide the only examples of adult males systematically featured in the programme.[29] Their behaviour is consistently one of reproductive competition and threatened sovereignty. Their narrative is one of competition for the defence of their territory, and the protection of the offspring or of pregnant lionesses in which they have 'a vested interest'. The storyline for Simba, the male lion of the first season, is that two nomadic males threaten to oust him and to take control of his territory and of his pride. Almost the same story is told about another male, Notch, in the third season. In each case, an emphasis is put on the fact that a male lion which conquers a pride will kill the cubs in order to get the lionesses to mate with him. Finally, all the cats serve as illustrations of the notion that in order to avoid inbreeding, young males are ousted from their mother's territory

---

[29] On one occasion during the third week a male cheetah is briefly shown trying to mate with Kike, who at first does not seem to be willing to mate and then accepts. A narrative of the mate choice by the female.

whilst young females can remain on the same territory in the case of lionesses or on a neighbouring or overlapping one in the case of cheetahs and leopards.

Central to the theory of behavioural ecology is the notion of kin-selection, the idea that a behaviour can be of evolutionary value not because it enhances the survival of the individual displaying the behaviour, but because it is good for the survival of relatives, bearers of the same set of genes, for instance offspring or siblings. The focus on kin-selection is about trying to understand how altruism (self-sacrifice), a behaviour which at first sight could seem to diminish the survival prospects of an individual, might fit in the Darwinian theory of evolution by natural selection. Looming behind this questioning is the controversial theory of group selection, which attempts to decide whether groups of individuals can be considered as fundamental units on which natural selection operates. A correlated questioning concerns the role, if any, played by cooperation between individuals, and social behaviour, in the survival of the individual. Ultimately the question is to determine if the survival of the individual depends on the survival of the group. Such interrogations were ruled out as irrelevant in the 1960s and 1970s, when altruism was explained by bringing forward the ideas that the unit of selection was the individual organism (Williams, 1966) or the gene (Dawkins, 1976). But today the hypothesis of group selection seems to be regaining momentum (Wilson and Wilson, 2008). As Edward Wilson, often credited as being "the father of sociobiology", pleads:

> 'The major remaining questions of evolutionary biology are ecological rather than genetic in content. They have to do with selection pressures from the environment as revealed by the histories of particular lineages, not with genetic mechanisms of the most general nature' (Wilson, 1992:85)

As suggests this brief description of the way animals are presented in *Big Cat Week*, the theoretical knowledge developed by practitioners in behavioural ecology is far from absent from the series. This theoretical

knowledge is however not presented as such. Although it provides the organising principle of the stories told in *Big Cat Week*, it remains all but invisible. An invisibility which could indicate that such knowledge is not the condition of expertise but an element used by the film-makers to construct the engaging stories they tell us and produce knowledge on their own (see Chapter Four).

One consequence of this is certainly to transform working hypotheses into quasi axiomatic propositions, for to tell stories is to present as indisputable a particular point of view (Curtis, 1994; Wynne, 1996). In this case the opinion that behavioural and morphological traits of lions, leopards and cheetahs 'contribute to the survival and reproduction of individual animals' (Caro, 1998:8). These behavioural and morphological traits make sense in the frame of a problematic defined by Westerners to suit specific preoccupations and answer specific questions using specific references. Such perspective emphasises for instance the notion of ownership of a patch of ground, or takes as fundamental unit of the "natural order" the family, painting female leopards or cheetahs as isolated young lone mothers struggling to raise their children against the odds, portraying lions as protective males, sometimes "messing around" with young lionesses alien to the pride, but overall ensuring peace, security and prosperity to the group of lionesses and cubs they are blessing with their protection.[30] Alternate systems of values and beliefs are silenced. Although the Maasai, the local population in daily contact with the animals, could, perhaps more than anybody else, make claims to an intimate knowledge of the Maasai Mara fauna, none of the categories they use to organise their social life, or their knowledge of the animals which they are the most likely to interact with, are taken into account or conveyed in the stories told in the series. Only on one occasion (second week, fourth episode) in the whole series is the fact mentioned that the Maasai live side by side with the cats. It is when three young sub-adult cheetahs exit the reserve and head towards an area where

---

[30] Sociobiology has been pointed out as 'replicating traditional western forms of sexism in the biological discourse' (Haraway, 1989:321).

the Maasai graze their herds. At one point, Maasai people are made visible on the screen but from far away, their silhouettes blurred, slightly distorted by the rising hot air. In terms of the 'understanding of science' by us, the intended audience for the programme, *Big Cat Week* seems to make no room for an alternative to Western categories as a means of knowing and interacting with the natural world.

Speaking on behalf of the animals

> 'For a moment I thought he was going to ask her how she was feeling, but he settled for a few words on her behalf: 'She's really agitated, really worried, really distressed.' One has become used to wildlife presenters anthropomorphising their subjects, but Jonathan, Simon and Saba have got to know their big cats so well over the years that they speak about them as if they were personal friends, if not close relatives.' (Matthew, 2004)

As this quote suggests, the fact that the film-makers put words in the cats' mouths, or rather tell us what the animals think, is usually taken as a sign of the blatant anthropomorphism exhibited by the series. Yet, another interpretation can be explored: in so doing Douglas-Hamilton, King and Scott all assert their expertise and make further claims to expertise.

> 'They're seeing a young animal there, a young calf, and you can see they're hungry. They're thinking, "Surely, this is food".' (II,4, 28:10)
>
> 'Sala's mum is really confused. Going back to the spot thinking, "Didn't I just kill you?"'(II, 2, 10:37)
>
> 'She's just decided there are too many lions for her to cope with and her best bet is to get out of here' (III, 4, 22:50-22:54)

Using and displaying the various strategies and characteristics described above—familiarity with the location, intimacy with the animals and capacity for emotional restraint and to refrain from treating wild animals as pets—the presenters have already convinced us that they were to be trusted as intimacy-based experts. As such, they have legitimacy to talk in place of the animals, to act as spokespersons for them. At the same time, their performance of the ability to interpret and translate the feelings and thoughts

of the cats further asserts their state of knowledge-producers (Callon, 1986; Latour, 2004). One of the main features of the 'nonhumans', on behalf of whom our experts claim to act as spokespersons, is that they are predators, principally involved in one activity: hunting.[31]

Speaking in the name of the cats, the film-makers represent their interests. Historically the practice of hunting has played an important role in

---

[31] In a very classical version of the critical approach to natural history films and television programmes it has been argued that showing predators tended to be a representation of nature 'in the vulgar-Darwinist terms of *perpetual conflict*, played out [...] at the level of individuals in interspecific struggles' (Bousé, 2000:182 – original emphasis). However, there are other points to bring forward. For one thing big predators, especially carnivores such as the cats portrayed in *Big Cat Week* are, ecologically speaking, direct competitors to humans. At the top of the food chain, they potentially feed on the same species as we do, and often prey on our livestock. Furthermore, they are the only animals presenting a real threat to the human populations living in the same area. In regions of the world where human populations "cohabit" with lions, tigers or leopards (mainly in Africa and Asia), several persons are reported killed by these animals each year (Kruuk, 2002). And as a growing literature suggests, conflict is escalating between big cats and human population whose main source of subsistence is the rearing of livestock (for a review of this literature see Bagchi & Mishra, 2006). Just like wolves and other big carnivores, such as brown bears in the French Pyrenees mountains, can be considered as a nuisance by some populations in Europe (Buller, 2004), some populations in Africa and Asia consider big cats more often as "vermin" than as "biological wealth". Considering the points raised here, the fact that these animals are portrayed in the positive and sympathetic way we can witness in *Big Cat Week* could be analysed as symptomatic of the estrangement from nature characteristic of Western societies (Giddens, 1991). The opposite view is voiced by Jonathan Scott in an interview, where he appropriates "The Biophilia hypothesis", one of the famous theories proposed by Wilson (Kellert and Wilson, 1993) which holds that the love of and interest for nature is inscribed in our genes: 'The need to connect to nature is probably built into our genes. Two million years ago we had to be naturalists to understand the way of animals to catch them and feed on them. Finding game and finding water were part of our very existence. Curiosity about nature and our attraction to it is part of our survival. It's what we need to keep ourselves alive' (Dunk, 2006). Similarly, zoologist Hans Kruuk suggests (2002) that our fascination for charismatic carnivores could be analysed as related to the curiosity exhibited by gulls, who faced with a predator preying on one of them, do not flee but flock around it to see how it behaves and learn how to escape or defend themselves the next time they encounter this predator. We would be keen on watching big predators because it would enhance our chances of survival should we come to encounter one in the wild. It could also be analysed as the sign of a loss of empathy for human populations living far away from us. In a plea published in *The Independent,* Aqqaluk Lynge (2007), the leader of the Inuits living in Greenland, thus attempted to draw our attention to the fate awaiting his polar people because of global warming: 'When we can no longer hunt on the sea-ice, we will no longer exist as a people'. Today's image of the effects of global warming on the polar ecosystem is that of another hunter forced to death by starvation: the polar bear. Images of an exhausted skeletal bear painfully climbing on an iceberg can be perceived as very disturbing. It seems interesting to note that the fate of an ecosystem is more likely to be associated on our temperate television screens with the destiny of wild predators than with that of the human populations inhabiting it. This suggests that animals would be easier to care about and identify with than fellow humans.

establishing social stratification and in defining the status of a social elite (MacKenzie, 1988). In particular, hunting was related to claims to authority on the natural world and to the control and the monopoly of the ground where it was practised. In this perspective, a television programme like *Big Cat Week*, which shows animals roaming through an area and presents them as accomplished hunters, symbolically claims authority and monopoly over this patch of ground for the animals. This is not meaningless because the local context shows that the Maasai Mara National Reserve is in fact a highly contested area. And by having people speaking on their behalf, the cats are given a say in the matter.

It all begins with the names they are given. Sometimes English words, most are Swahili. For instance, Kike, means "young female", "Chui" is "leopard", the classical lion name "Simba" stands for "lion". Such use of Swahili generic terms as names in a region situated in Maasai Land, where the language is Maa, could be interpreted as an attempt to erase the Maasai cultural identity from the area in favour of the Kikuyu one. It should be noted that the colonial administration, by favouring the Kikuyu farming over the Maasai cattle grazing, because it was more conform to the social model imported from the West, created and fuelled an ethnic conflict between the two communities which remains unresolved (Galaty, 1993).

The reserve lies in the middle of a controversy over the access to areas where big game can be found. It started with the establishment of a centralised state in Kenya as a result of the colonisation and it mainly opposes the Maasai to Westerners. Without going into details[32], it can be mentioned that the reserve is part of a larger territory which was first delimited by the British colonial administration by two successive treaties, one in 1904, the other in 1912, as a Native Reserve where the Maasai could stay in compensation for the lands further north which had been alienated for European settlement (Campbell, 1993). Infested with tsetse flies the

---

[32] See the very complete collection of essays edited by Thomas Spear and Richard Waller – *Being Maasai* (1993), as well as Waller, 1984; Péron, 1994; Lamprey and Reid, 2004.

zone covered by today's Maasai Mara reserve was freed from the deadly insect by the Maasai, who, during the 1950s, cleared the thicket in which it was thriving in order to get some new dry season grazing places, following a heavy drought in 1953. In 1961, however, most of this zone freed from the tsetse fly was declared a game reserve (Lamprey and Reid, 2004).

Originally the status of national game reserve meant, at least in theory, that hunting without a license was forbidden but that the revenues generated by the sale of such licenses to hunters were redistributed to the local population. Furthermore, other uses of the land such as grazing livestock were authorised. After the ban of hunting in 1977 in Kenya, the only difference between a national reserve and a national park has been that instead of going to the central state, the profits of game-viewing tourism are redistributed to the Maasai communities to compensate them from the impossibility to graze their herds in the reserve.[33] The ban on hunting in Kenya provoked a staggering reconversion of businesses once specialised in the organisation of hunting safaris now specialised in the organisation of wildlife safaris. Both in terms of ideology and of personnel, the colonial practice of setting aside vast areas in Africa to ensure access for big game hunting to a wealthy Western elite can be related to the conservationist practice of setting aside vast areas in Africa to ensure access for big game watching to a wealthy Western elite (MacKenzie, 1988).[34]

Today, the Maasai Mara reserve is peopled with safari guides and drivers, working for one of about fifty safari lodges or camps dispatched around the reserve. The description of the pre-production of a *Big Cat Week* season makes clear that the local knowledge considered useful is the one

---

[33] For a very partial, yet well informed account of the organisation of wildlife conservation in Kenya see *Wildlife Wars* by Richard Leakey (2002). Leakey was head of the Kenya Wildlife Service from 1989 to 1996 and then briefly from 1998 to 1999.

[34] Tourism is the third source of foreign currency in Kenya after the trade of coffee and tea. 1.8 million western tourists visited Kenya in 2006, bringing in 136.7 million euros (Kenya Tourist board 2007)

detained not by the Maasai whose ranches border the reserve but by these guides and drivers, many of whom are Westerners:[35]

> 'Drivers from Governor's Camp [...] keep a daily game record, noting which lions, leopards and cheetahs they have seen, what they killed and any other interesting details. [...] Angie [Jonathan Scott's wife] and I travelled down to the Mara a few days before the crew assembled to catch up with what had been happening. Angie had already been networking with our friends at the various camps and lodges who had provided us with almost daily updates on the movements of the Marsh Lions and Zawadi [a female leopard][...] A few weeks before we arrived in the Mara, Angie had received a report from Governor's Camp that a cheetah had given birth to five cubs [...].' (Scott & Scott, 2003:8-14)

As emphasised by anthropologists, local Maasai practices and knowledge rest on a specific set of cultural representations and historical experiences and often express themselves through concepts which are not familiar to European scientists and economy planners (Fairhead & Leach, 1994).

> 'A fundamental characteristic of the Maasai economy is its concept of land use. The patterns of ownership and use reflect a variety of social, political and economic characteristics of their society and its interaction with the environment. The land was traditionally seen as a communal *territory* containing resources rather than as a *resource* which could be appropriated by individuals. The use of the territory was governed by social and political conventions designed to reduce the risks associated with the unpredictable climate of the semi-arid environment.' (Campbell, 1993:258 – original emphasis)

The case of the Maasai Mara reserve thus represents a typical example of a competition for the access and the use of land (Franklin, 1999). And claims to knowledge are used as resources in this competition. As expressed

---

[35] See for instance the page "guides" on the website of Ker & Downey Safaris Ltd., one of the most traditional and luxurious companies of its kind. < http://www.kerdowneysafaris.com >

by François Constantin (1994), 'the scientistic vulgate justifies the clear conscience of the dominating colonial and neo-colonial aristocracies' (p.6 – my translation). The Maasai Mara reserve and the access to the resources it represents are at stake in a controversy which opposes two categories of knowledge: on the one hand the local knowledge of the Maasai population, on the other the knowledge of behavioural ecologists and conservation biologists.[36] The latter provides legitimisation to the conservationists' arguments. Xavier Péron notes:

> '[T]he politics of preservation-conservation of the wild fauna, by giving priority to the creation and extension of protected spaces, exclude the Maasai from their land, denying them any responsibility in the management of the ecological balances.' (Péron, 1994:38 – my translation)

The classical work of Michel Callon (1986) on marine biologists talking in the name of the scallops in St Brieuc Bay in order to advance their agenda, allows to understand the role played 'by science and technology in structuring power relationships' (p.196) and to identify what kind of place *Big Cat Week* can have in this rather intricate setting. It also enables us to identify a role of the telenaturalists whose claims to knowledge-production have been analysed in this chapter. They present themselves as big cats experts, and helped in this by the back-up documentation as well as various performances in the programme, put on the coat of spokespersons for the three species of big cats. In so doing they enrol the cats in a network composed of the safari companies, the various wildlife societies and trusts preoccupied with the conservation of African wildlife, and the airlines, hostels and so forth, all those whose interest is that the Maasai Mara reserve remains empty of local population and continues to stand 'as close as anything […] to a pristine wilderness' (Leakey, 2002:159). This vision of

---

[36] Bernhard Grzimek was instrumental in creating an upsurge in the West about the threat to African wildlife with films such as *No place for wild animals* (1956) and above all *Serengeti Shall Not Die* (1959) which tells the story of his "battle" to have the boundaries of the Serengeti park modelled along the migration routes of the wildebeests. Grzimek

the reserve is in accordance with the Western conception of nature conservation. It has nothing to do with the local, Maasai way of seeing things.[37] By telling stories structured with Western knowledge, and by presenting cats as the natural hunters in the reserve, the film-makers contribute to establishing the primacy of their knowledge over any other form of knowledge and seemingly assert the property rights of the cats on the reserve and its game.

A programme like *Big Cat Week*, by posing as a representation for the Western audience of the life of the cats, also enrols us in this network whose interest is that the Maasai Mara reserve remains out of reach of the surrounding Maasai population. One avowed objective of the programme is certainly to promote the visual enjoyment of wild animals behaving naturally in their native habitat. And implicit is the idea that from this appreciation and the emotional investment in the animal characters portrayed in the series can originate a desire to conserve this habitat in order to protect the animals living in it. In Saba Douglas-Hamilton's words: 'It's part entertainment, but on the other side, it has a real value, which is making people care about the animals and hopefully helping to conserve them in the long run'.[38] *Big Cat Week* however is not made to be broadcast in Kenya. The population which would be the most likely to benefit from the enlightenment provided by the series in terms of the conservation of African wild carnivores is thus not exposed to its influence. The way *Big Cat Week* helps is by attracting the attention of potential tourists from richer countries. As Jonathan Scott explains:

> 'I mean, who wouldn't be thrilled when people come up to us as we drive around and say, "you know why we're here? We're here because

---

noted in the best-selling book adapted from the film: 'The Masai were the cause of all our hard work' (Grzimek, 1960:177).

[37] A parallel can be drawn with the situation described here and the discussion in Chapter Three of the way Attenborough contrasts Indonesian modes of relationship to the orang-utan Charlie with his, which was analysed as a way of suggesting that Westerners' appreciation of animals was more appropriate than that of non-Western populations.

[38] *Big Cat – The Big Story* (DVD), BBC/2 Entertain Video, 2007 [57:14 – 57:23]

of *Big Cat Diary*. We heard about the Maasai Mara through your television programmes. We wanted to visit and see that for ourselves." Now that means we're helping to protect the wildlife because the revenue of tourism is so important to countries like Kenya in maintaining areas such as this and keeping them free, keeping them wild.'[39]

Recently the Kenyan tourist authority, encouraged by conservation bodies, raised its parks and reserves entry fees. The move aimed at reducing the number of visitors in order to prevent a deterioration of the ecosystems. It is accompanied by a general movement towards an "upgrading" of the tourism facilities in the parks and reserves. A programme like *Big Cat Week* can thus be seen as a participatory device, giving those who cannot afford the access to genuine pristine nature the impression that they can still enjoy it. Two years ago, the Kenyan television started broadcasting *Big Cat Week.* Scott, who lives in Nairobi, tells of the reaction of the Kenyan audience:

> 'They're so proud and excited that this area is in their country. Many of them have heard of it but because of the expense of getting there they've never seen it for themselves.' (Dunk, 2006).

Conservation financed by means of tourism supposes one thing: that the area used for such economical activity conforms to the expectations of the population being targeted in terms of wild, unspoiled, pristine nature. It means, amongst other things, that all signs of human presence, except for fellow tourists, must be removed, or at least made invisible and silent.

Conclusion

In this chapter, we have suggested a possible analysis of a natural history television programme in order to try to determine first how the film-makers appearing on screen manage to stand as figures of expertise, second what knowledge these experts are conveying, and third what the consequences of their claims to expertise could be. The telenaturalists' expertise appears to

---

[39] *Ibid.* [57:28 – 57:57]

build on the notion of intimacy. This intimacy is first constructed in the back-up documentation in ways that bring forward the personalities of the film-makers, turning it into an important element for the legitimisation of their cognitive credibility. In the programme itself, it is signalled to the viewers by various means either related to the location or to the fauna and flora. In the case of *Big Cat Week* the presenters demonstrate a thorough geographical knowledge of the Maasai Mara reserve, an intimacy with the animals (they are able to name them and recognise specific individuals), and a capacity to translate for us what the animals think and feel. Finally, telenaturalists' claims to expertise rest on their ability to control their emotions and feelings towards the animals, and resist the temptation to treat them as pets.

The choices guiding the making of *Big Cat Week* may be supported by the logic of entertainment rather than by strong ideological commitments, they nevertheless end up with a specific representation of a region of Africa and what happens in it. And in any case, the analysis proposed here indicates that *Big Cat Week* is a performance which incorporates some of the knowledge developed by practitioners of behavioural ecology, insofar as it allows to fabricate enthralling narratives. The whole is put together according to the conventions of television entertainment and the experts in this programme are television performers who use theoretical knowledge, and adopt what looks like the ethos of field researchers to flesh out their performance.

On a wider ground, the notion of expertise is linked to the broader concept of authority (Turner, 2001). The analyses proposed in this chapter suggest that the three spokespersons for nature appearing in *Big Cat Week* are "home grown" experts, brought forward by the television institution to act as experts in the institution's productions, which suggests that the process described about Attenborough in Chapter Four has been turned into a regular mode of action on the part of the BBC NHU. By constructing its own spokespersons for nature, and by acting as a structure of public legitimisation of their cognitive authority, the media institution, here the BBC, contributes, intentionally or not, to the process of decision-making

regarding the issues raised in the documentary, here the status of the area called the Maasai Mara National Reserve and the related rights of the local populations.

Chapter 6

Experts in the wild. Showing nature from within

> 'we are now so accustomed to looking at representations in order to know how to look at things themselves that it is difficult to recapture that sense of revelation when first viewing an enlarged picture or a representation of a magnified image, let alone marveling at the techniques of their production.'
> (Anne Secord, 2002:32)

The preceding chapter allowed us to examine how natural history film-makers make claims to expertise and support them when being visible on screen. One pivotal strategy in this process appeared to be the demonstration of their intimacy with the animals of which they are imparting knowledge. The first question we will try to answer in the present chapter is how a natural history film-maker achieves the authority to speak for nature without being visible. The film chosen to answer this question is *Winged Migration* (2001) [1], a film devoid of any visible learned mediator between the natural world represented on screen and the audience. Compared to *Big Cat Week*, another feature of this film is that it was made outside any established institutional framework, its maker is a freelancer. Our study of *Winged Migration* will thus allow us to examine two other questions: does the absence of an institutional framework to support the cognitive authority of natural history film-makers alter the type of evidence they provide in order to convince the audience of their trustworthiness? Does it change their relationship to scientific practitioners?

---

[1] The film is originally a French production in collaboration with other European countries. It was first released in France in December 2001, under the title *Le Peuple Migrateur* (The migrating people). The English version of the film was released in the UK and the USA in December 2003. This chapter is based upon an analysis of this English version. It should be indicated that this version is nine minutes shorter than the one released in France (89 min. against 98 min.).

The investigation conducted in this chapter of a non-BBC natural history film will enable us to expand our understanding of the NHU.

In accordance with the approach defined in Chapter Two, we will address the film as a 'wonder show' and the film-maker as a showman demonstrating his expertise through the successful display of a visual spectacular effect (Morus, 2006), shattering the spectators' day-to-day perception and opening 'new realms of possibilities' (Nadis, 2005:xi). Making *Winged Migration* involved devising techniques enabling cameramen to accompany birds in flight and film them up-close in the sky.[2] This participated in the success of the performance, and therefore in the fashioning of the film-maker's identity as a trustworthy spokesperson for nature. However, foremost amongst the techniques involved in the performance was the training of a thousand birds, so that they would tolerate the presence of humans alongside them whilst flying. Given that *Winged Migration* is supposed to be a film about wild birds, this particular side of the preparation of the performance could potentially have derailed any further claim to cognitive credibility. This is for example suggested by the small scandal which arose in Britain when it became publicly known that a cobra from a snake-farm had been used in a scene depicting David Attenborough's encounter with a supposedly wild cobra in an episode of the BBC 2008 series *Life in Cold Blood*.[3] A wealth of strategies had to be implemented by the film-maker so as to avoid his identity fashioning to be jeopardised by this aspect of the preparation of the performance. In this chapter, we will apply the same method of analysis as in the preceding one, defined in Chapter Two as the visual anthropological approach. Simultaneous attention will be paid to the contents of the film and to the context of its production. This will enable us to draw some conclusions about the status of natural history film-making as a knowledge-producing culture and about the way the authority to speak for nature relates to the notion of social power

---

[2] Postmodernist film theorists would argue that the impression that the spectator might have of being part of the flock is therefore not a mere illusion. At least the camera, to which the viewers delegate their gaze, was there. See for example Friedberg (1993) on the 'mobilized virtual gaze'.

[3] See for instance Whitworth (2008).

(Schaffer, 1995). As will appear, *Winged Migration* seems to naturalise the idea that to be a trustworthy producer of knowledge of the natural world one needs to display evidence of belonging to the social elites.

Making the viewer intimate with animals as a means for the film-maker of appearing trustworthy

Two characteristics of *Winged Migration* can be reflected upon: first, the absence of a commentary which would unambiguously designate to the viewers a figure of cognitive authority in which to invest trust, replaced by 'an unhelpful, florid narration, [lacking] useful information' (Falk, 2003), second, the absence of a learned figure on screen who would mediate the audience's experience of nature and clearly impersonate the figure of the spokesperson for nature. This leads to paying attention to the means of standing as a figure of cognitive authority used by the film-maker. In particular, the absence of a commentary draws the attention first to the other sounds heard in the film, foremost amongst which are those appearing to be produced by the birds, and second to the role played by images, and therefore to the place attributed to the practice central to the culture of natural history, observation (see Chapter One), in the strategies of legitimisation of the film-maker as a spokesperson for nature. In *Winged Migration*, the film-maker achieves this authority through the possibility of a close observation of birds in flight. With this tour de force he suggests his power to control nature at the same time as he enables the viewers to witness, by themselves, how nature works (Morus, 2006). But for this strategy to function, it is necessary, in the first place, to justify the centrality attributed to flight in the portrayal of the birds. This is achieved through the scarce non-informative commentary and the images, by making flight the essential component of migratory birds' existence.

Defining the animals as performers

Winged Migration is presented as an account of one year in the life of migratory birds. The central idea conveyed to the audience is that, for the birds, migration is both a "life style", what defines them, and a matter of survival:

'They fly, often thousands of miles, beset with danger for a single reason: To survive. Their migration is a fight for life.' (5.00-5.15)[4]

Not just a celebration of the birds and their feats, the film is also a morality tale. In the words of producer and director Jacques Perrin,

'[i]t was not just the beauty of birds in flight which attracted me, it was the courage of migratory birds, their capacity to carry on, whatever the obstacles' (Lichfield, 2001).

Most of the images are of birds in flight, many of them filmed so as to give the spectators the physical impression that they are part of the flock. The narration is divided into three periods: spring migration, summer breeding, and fall migration back to the wintering grounds. The first part of the film is made of interspersed footage of birds of different species. All are shown reaching the Arctic:

'Coming from every continent the migrant birds converge upon the Arctic and disperse. Their life as a community is over. Now it's family time.' (34.17-34.30)

There follows a brief section on the birds' family life in the Arctic, with footage of chicks with their parents. Spring migration is presented as the means by which these birds cyclically reach the places where they can safely reproduce, away from most threats and predators that would compromise the survival of the species. A series of sequences then shows various species of sea birds—gannets, puffins, etc.—who 'every spring, [...] quit the ocean waves and flock to nest on the same cliffs and rocks.' (38.10).[5] And when the Arctic

---

[4] Here, as in the rest of the text, the quotations followed by numbers between brackets are transcripts of extracts from the film commentary, as obtained from the English version of the film which can be found on the DVD *Winged Migration*, Sony Pictures Classics/ Columbia Tristar Home entertainment (2004).

[5] At the foundation of this representation of the natural world therefore lies a widespread and now classical assertion of sociobiology, that the existence of animals would be naturally governed and organised by the vital impulse to reproduce. For an analysis of the representation of animal life as a cycle organised around the notion of reproduction along the lines of gender theory see Crowther (1997). On the consequences for the discipline of sociology of this kind of representation of nature informed by sociobiology and serving as arguments for evolutionary psychology, see Stevi Jackson and Amanda Rees (2007). On the consequences of such accounts for the history and sociology of science see Barbara H. Smith (2005).

summer draws to its end, the birds take wing again, for the fall migration. The harsh climate conditions and the various dangers they have to face during this second travel are now emphasised. Some migrations occurring in the Southern hemisphere—penguins, albatross—and in 'the heavenly tropics' (01.06.49)—pelicans in Africa, parrots in South America—are also mentioned before the film concludes.

> 'In the Northern hemisphere, migrating birds herald a new spring. The promise to return has been fulfilled' (01.24.45-01.24.55)

This last commentary accompanies images of a flock of graylag geese arriving where the film started, a pond in rural France with a derelict wooden wash house standing on the bank and the nearby village signalled by the tip of a church tower emerging above the trees. The place stands as the ideal type of rural West and seems literally apart from history and the only sign of the passing of time appears to be the immutable cycle of the seasons. The pond is also clearly situated in an area from which humans have retired. They are not far, but they are not here.

Producing knowledge through the 'dance of relating'

The relationship between humans and birds is central to *Winged Migration*. And the notion of knowledge of the natural world appears pivotal in the construction of this relationship. On two occasions, two human figures in the film are seen entering a relationship to the birds, both in the first part of the 'cycle', when birds are leaving, and at the end of it, when they return. These two figures are a young boy and an elderly woman. In the two cases, the first encounter leads to the birds flying away as scared by humans, whilst in the second, occurring after the film has unrolled, the human actors can stay close without frightening the birds off. This narrative strategy, mocked by some critics for being too basic (Frodon, 2001), nevertheless draws the attention to an essential claim of the film. The balance between these two encounters indicates that the film starts by asserting the existence of a deep divide between humans and birds, then proposes to remedy it, having allowed humans to get knowledge of the birds, and birds to accept the presence of these knowledgeable humans. *Winged Migration* offers the spectators to enter what

Donna Haraway calls a 'dance of relating [during which] all the dancers are redone through the patterns they enact' (2007:25). *Winged Migration* can be seen as a performance of knowledge, and, as such, as a transformational event (see Chapter Two) modifying all the participants and inviting to a reorganisation of their perception of the world.

Such transformation is induced by the birds' own knowledge of themselves and of the natural world as they experience it. A knowledge they are made to convey through the film. Throughout the film, they are presented as 'knowledgeable actors' (Rees, 2007b), holding an 'intimate knowledge' of the natural world, of the type one gets from belonging to it (Raffles, 2002). Their instincts "tells" them what route to follow, when the time to leave has come, or if danger is looming. This interpretation is first suggested by the commentary:

> 'To navigate across the latitudes, they use the natural beacons of the universe: the sun, the stars. They can track the earth's magnetic field as sensitively as a compass needle.' (10.30-10.45)
>
> 'By flying with their elders, the youngsters memorise the route and recognise the landmarks they will fly over twice a year, throughout their lives.' (56.12-56.26)

Or by short sequences expressing the idea that birds possess "inhuman" skills enabling them to "read" the landscape. This is the case for example in one sequence showing a group of bar-headed geese resting on a mountainous slope. Suddenly the birds take wing as if chased by an invisible threat. The cause for such hasty departure is soon indicated to the audience when an avalanche occurs apparently right at the place where the birds were staying. Other instances of the description of animals as knowledgeable actors in a popular context have already been investigated. For example, in her analysis of the texts written by field primatologists for a popular audience, Amanda Rees (2007b) shows how researchers similarly endow the animals they are studying with a knowledge of nature which humans do not possess:

> 'The animals are presented in these pages as the knowledgeable actors, and even instructors, with necessary skills for surviving in the particular environment, skills that must be learnt by the researchers both as quasi-group members and as scientists' (Rees, 2007b:887).

As Rees points out, presenting the primates in such light establishes them as subjects and makes the construction of a relationship between primates and primatologists possible. This is part of a strategy aimed at presenting the animals as 'persons' in order to create 'a sense of kinship in the mind of the reader [in the hope] that a sense of shared responsibility and of mutual participation in a moral community will also develop' (Rees, 2007b:895). This notion of animals as knowledgeable performers therefore suggests that a 'collective' (Latour, 1993) including the birds and the humans can develop on the basis of a shared knowledge. By temporarily placing the audience level with animals, the nature-culture of natural history film-making becomes a means of establishing a collective of humans and nonhumans built on knowledge (see Chapter Two). In our case, the humans are those who have to (re)learn from the animals how to behave in the natural world. Humans are socialised by the animals and can in turn socialise the animals (Haraway, 2007).

As mentioned earlier, the essential characteristic of *Winged Migration* is that most images of the birds in flight are not taken from the ground, where humans belong, but up in the sky, at their side. The film thus presents the film-maker to the audience as having been able to reach for the birds in their realm and build a bridge between them and us (Serpell and Paul, 1994). About the cameramen who managed to get the first reel of birds in flight, the film-maker comments:

> 'Radiant, tears in their eyes, the operators looked at me without a word. What they had just filmed had suddenly rendered their technical mastery meaningless. All that mattered for them was that birds in flight had taken them into their confidence' (Perrin & al., 2003:9)[6]

This quote from the support-book to the film points towards a theme central to the communication surrounding the film, the notion that the assemblage of the performance necessitated first that the film-maker learn not only about, but

---

[6] This evocation by the film-maker reminds us of the 'zoologist's dream' mentioned in Rees (2007b), what 'Kummer [...] calls 'the zoologist's dream of being accepted by wild animals [...] the pleasure of being regarded as a conspecific by his animals'.' (Kummer, *in* Rees, 2007b:888)

from the birds. The film is thus presented as the product of the appropriation of avian knowledge[7] by humans, the result of gaining the birds' trust and sharing their world intimately. This point will be developed later in the chapter when discussing the making of the film as it is presented to the audience. For now we will concentrate on the film itself and turn briefly towards the manner in which the viewers are offered the opportunity to share in this intimacy, to experience a similar closeness to the birds. This is achieved through the use of two formal means: sight and sound.

Building the collective: formal means

Listening to what animals have to say

Critics and commentators have all emphasised the scarcity of the commentary in *Winged Migration*. The few sentences spoken by the voice over commentator offer no analysis, description, or even explanation of what is visible on screen. Rather, they set the mood, and orient the impression of the viewers. Factual information, such as the common name of species being shown on the screen, the distance it flies, and the point of departure and arrival of the migration, are displayed in subtitles: 'The graylag goose flies 1800 miles from south-western Europe to Scandinavia'. Despite the minimalism of the commentary the film is far from silent. What first springs to the ears is the music. Dismissed by some as being 'decorative and invasive' (Frodon, 2001), it pervades the viewing experience.[8] Yet, another effect of the rare words, and one which is more directly related to the issue of the construction of the viewers' intimacy with the birds, is that a lot of space is left to the sounds

---

[7] That is not so much the knowledge of birds as the knowledge birds hold of the natural world.

[8] The role of music in natural history films remains to be explored. In particular its use in the fashioning and the management of the viewers' feelings and emotional experience with relation to the images projected on screen. In the case of *Winged Migration*, the soundtrack was specially composed for the film, and on the DVD an entire documentary is devoted to the making of the music. This documentary features an interview with the composer, Bruno Coulais, who also wrote the music for the film *Microcosmos* (1996), in which Perrin was involved as a producer.

produced by the birds themselves. As Perrin notes, 'all the birds of *Winged Migration* have a lot to say' (Perrin & al, 2003:87).

In the previous section was noted that in the effective absence of humans, the birds were the film's actual protagonists. Similarly, as regards the sound, it seems that the film-maker voluntarily wishes to give these birds' talk the priority over any human-made sounds, be it spoken words or music.[9] A sequence in particular seems to illustrate this point. During the first part of the film, we are shown the courtship display of Japanese cranes on a frozen lake on Hokkaido Island, in Japan. The display takes the form of 'a dance interspersed with frequent jumps and accompanied by calls' (Perrin & al., 2003:217). When the scene starts, the main theme of the film's soundtrack also begins, as an accompaniment to the birds' dance. Yet, as the scene progresses, the calls become louder and more frequent, until they drown out the music which stops—conspicuously—right in the middle of a phrase. And the courtship display continues with the cranes' calls as only soundtrack. It is as if the birds' voices had silenced the human music imposed on their dance. And indeed, as the readers of the book *Winged Migration* will learn,

> 'None of a bird's vocalizations, whether calls or songs, are gratuitous. All of them have a precise meaning [...] Birds speak to each other a lot' (Perrin & al., 2003:86).

The audience is thus invited to listen to what birds have to say, which is another way of producing a sense of familiarity between birds and viewers.[10]

---

[9] It should be noted, though, that a vast majority of the soundtrack is made of "human-made" sounds. Most of the sequences showing birds in flight up-close were shot using trained birds and were recorded soundless because of the omnipresence of the noise made by the engines of the vehicles used to lead the trained birds and the encouragement shouted by the trainers—this point will be addressed later in the chapter. The sounds to be heard during these sequences were added in the editing room. In particular, the soundtrack on one of these sequences is made of a kind of heavy breathing which sounds like either their wings beating the air or the "magnified" breathing of the birds. In either case it evokes an important physical effort. In fact it is a studio recorded piece of sound. A group of singers were asked to breath heavily and rhythmically, according to a pre-written sequence. This to say that actually all the sounds in the film, be it bird cries recorded then edited in the soundtrack, or "artificial" sounds are in a way or another man-made. Some do sound animal, others distinctly human, even if the association with the images can lead to believe that a sound is produced by an animal whereas it comes out of human throats.

[10] The example of a figure like the Italian monk Francis of Assisi, who, amongst other things, was known to be able to understand bird songs, illustrates the notion deeply ingrained

Chapter Two pointed at the notion of the transformation of the participants occurring during a performance, drawing the attention to the incompleteness of the process, which defined a vacant "in-between" space in which a political commentary could be inserted. As performers the birds are both 'not themselves' and 'not not themselves' (Schechner, 1985), as we will see later they are trained but at the same time retain their essential "natural" feature to the human eyes, the ability to fly. The incompleteness of their transformation allows for a commentary, for as quoted in Chapter Two, it is in 'the distance between the character and the performer [that] a commentary [can] be inserted' (Schechner, 1985:9). *Winged Migration* is almost devoid of commentary, in the sense of informative words spoken by a learned individual, but a lot of space remains vacant for the viewer to insert his or her own commentary, in an attempt to interpret what the birds are saying, thus reinforcing the impression of intimacy with them.[11]

Looking from within nature

Images of the birds in full flight, some of them literally taken from within the flock are the other cinematic means of suggesting intimacy with the birds to the audience. In some cases, the foreground of the image is entirely filled by the back of a bird, as if we were too close to see it in its entirety. Some of these frames almost give the impression of being seated on the back of a bird[12],

---

in the Western thought that to possess this kind of "gift" is a sign of benevolence. On the related theme of the understanding of bird songs, or cries, as something made possible by a an intimate relationship to them and as something that in turn enhances intimacy with the birds see for instance *Birds as individuals* (Howard, 1953). Len Howard, a musician herself, devotes the second half of her book analysing bird songs, demonstrating that the ability to sing varies from one individual bird to another. She concludes: 'The fact that musical talent varies individually—within species—as much as among human performers of music is not compatible with the theory of minds that only work automatically, without individual intelligence.' (p.169) The question of the language of birds thus relates to making them enter the moral community of intelligent creatures.

[11] The example of *March of the Penguins* (2005) is a striking illustration of the kind of commentary which can be inserted in the space left vacant by the incomplete transformation of the birds as performers. The film motivated a flurry of interpretations, some reading it as a demonstration of the naturalness of family values and parental sacrifice, others as evidence of Intelligent Design (Zuk, 2006).

[12] One inevitably thinks of Selma Lagerlöf's children's book *The Wonderful Adventures of Nils*, which tells the story of a young boy reduced to the size of an elf who follows a flock of

others might be said to provide the illusion of being a bird. In the words of the film-maker:

> 'one gets close to their flight, to their expressions. Even their voices, this unknown language, ends up lulling us. One lives with them, one lets oneself be led to the edge of mystery' (Anonymous, 2001 – my translation)

In a way we are invited to experience the migratory birds' point of view, and what it would be like to be one of them (Daston and Mitman, 2006).[13] And 'the shared glance [...] suggests that we are *looking from within nature* and not at nature' (Burt, 2002:47 – emphasis added). The effect of the camera's mediation is thus to make us part of their world, to relate us to them through our seeing the world as they would and sharing part of their knowledge. The reader of the support book will learn that

> 'Like us, they live in a world of color, [...] Whereas most mammals live in a monochromatic world of grays, robins, wild geese, and albatrosses of the southern oceans see in color just like humans do.' (Perrin & al., 2003:76)

Our knowledge of the birds, as conveyed by the sense of sight is a relational one, bringing intimacy with them.

To recapitulate, *Winged Migration* appears at first to suggest that the two worlds of humans and birds are separated. This would be in conformity with the observation made by Gregg Mitman (1999) on natural history films in general that nature films would promote the separation between humans and nature (see Chapter One). Besides, this separation seems to be necessary for the survival of the animals as suggested by the spectacle of some birds coming, willingly or not, in contact with the world of humans and dying. However, a closer look at the performance also suggests that *Winged Migration* proposes to

---

graylag geese during their migration, sitting on the back of one goose. Historiography has it that this Swedish book first published in 1907 had a major childhood influence on the development of Konrad Lorenz's interest for geese (Burkhard, 2005).

[13] A parallel can be drawn with *Big Cat Week*, and the sequence in which Jonathan Scott wonders what it is like to be a cheetah (see Chapter Five).

remedy this apparent dichotomy. This is achieved by installing the spectators in an intimate relationship to the birds, bringing the audience closer to nature, and fostering a strong emotional engagement. And this impression of intimacy is the spectacular effect supporting the performance *Winged Migration*, which demonstrates the film-maker's 'property of skill' (Morus, 1996; Secord, 1994a) implying that he is worthy of trust as a producer of knowledge of the natural world. As we saw in our examination of the BBC series *Big Cat Week*, the presenters support their claims to expertise by bringing forwards evidences that they are intimate with the animals, that they hold an intimate knowledge of them. In the case of *Winged Migration*, the same notion of intimacy is involved in demonstrating the cognitive trustability of the film-maker. By providing the viewers with an intimate view of the birds he wordlessly asserts his own authority to speak for nature. Commenting on *Winged Migration*, Mitman (2007) describes the feeling of wonder aroused in the viewer seeing these images of birds in full flight:

> 'Suspended in air high above the ocean, we look upon a gannet in wonderment. It is a wonder evoked by being an intimate witness to this poetry in flight, but also by a lurking question of what technological wonders have made such intimacy possible' (Mitman, 2007).

Literally awestruck by the technical virtuosity demonstrated by the images, the audience is led to wonder how they have been fabricated, and to inquire about the means which have rendered such observation of birds in flight possible. And just like P. T. Barnum 'famously [challenging] his audiences to figure out "How did he do it?"' (Morus, 2006:105), the film-maker also defies his audience with the foreword appearing as a preamble to the film: 'this film is the result of 4 years following [the birds'] amazing odysseys […] No special effects were used in the filming of the birds'.[14] Such declaration invites us to

---

[14] As film theorist Joel Black (2002) reminds us, standard cinematic practices such as fade-ins, fade-outs, laps, etc., whilst being excluded from the category special effects do not obey the laws of 'empirical reality' and are in that sense special effects used to create a 'narrative reality'. No special effect is involved in filming the birds but the film offers a point of view that would be unattainable without all the cinematic technology which has been deployed.

turn towards the support material to *Winged Migration* in order to inform our knowledge of how the performance was put together.

Fashioning the film-maker's identity: free action, artifice, and fact building

Despite the communal nature of the making of *Winged Migration* (between 400 and 500 persons, depending on the reports, worked on the film), and even if he produced and co-directed it with two other persons, Jacques Perrin stands alone as the person publicly responsible for the film. As one reviewer noted:

> 'One should greet this accomplishment, which indeed entitles Jacques Perrin to sign the film: this is the achievement of a producer.' (Frodon, 2001, my translation)

Throughout the promotion of the film, Jacques Perrin has been almost the only person interviewed about it. And whilst in these interviews, he mentions the collective nature of the project, there often is a sound of the royal "we" in his use of the pronoun "our":

> ' "Some of our teams spent two or three months in a country and brought back only one minute of usable footage," Mr Perrin said. "But what a minute!" ' (Lichfield, 2001)

Consistently brought forward to support the claims that the performance is credible and should be trusted, Perrin takes over the full responsibility for the film which thus becomes his own achievement. As was the case with, for instance Cherry Kearton (see Chapter Three), the credibility of the claim to knowledge encapsulated in *Winged Migration* rests entirely on the film-maker's persona. The absence of any readily visible institutional support to the claims to knowledge laid by the film and its maker enables to emphasise the part played by individual conducts in supporting these claims, as opposed to that of such institutional framework as the NHU, and allows to assess the nature and reach of institutional support in the constitution of the expertise of natural history film-makers.

As in the various cases addressed so far, the shaping of the public personality of the film-maker involves articles and interviews published in newspapers and magazines[15], a support book for the film (Perrin & al., 2003), and other instances of disclosure such as a making-of documentary. The various claims made through these different channels can all be read as attributing to the film-maker external tokens which are as many evidences of his belonging to social elites. Simultaneously, a second theme emerges from this back-up documentation, the attempt to present the film-maker as a skilful bridge-builder between the world of migratory birds and that of humans (Serpell & Paul, 1994). The film-maker transcends our experience and, through his performance, transforms the birds and the way we perceive them. The convergence of these two themes, in the context of the fashioning of the film-maker's identity as a trustable spokesperson for nature, could suggest that, as in the case of nascent seventeenth-century experimental sciences, to be perceived as a member of the social elites could help a natural history film-maker being recognised as a trustable spokesperson for nature (Shapin, 1994).

Natural history film-making and gentility

The pre-production of *Winged Migration* involved the imprinting, hand rearing and training of a thousand birds. A journalist reporting on the early stages of the project writes:

> 'Nobody had ever tried [imprinting] with storks, cranes, whooper swans… But where to put them? Without hesitation, Jacques Perrin commandeers his domain in Normandy. He already has horses, goats, dogs. A few birds more or less? So what?' (Desbenoit, 1999 – my translation)

---

[15] Very few pieces appeared in the British press (some brief reviews of a hundred of words were printed in *The Guardian* (Brooks, 2003), *The Observer* (Kermode, 2003), *The Sunday Mirror* (Falk, 2003)). The most notable article published on the subject in a British newspaper was the paper printed in *The Independent*, in 2001 (Lichfield, 2001). The main part of the "journalistic" material comes from French newspapers and magazines (e.g. Frodon, 2001; Desbenoit, 1999; Strauss, 2001; Desbenoit, 2001). Some interviews in English can also be found on websites (see for instance Moledina, 2003; or Dawson, 2003).

In the support book, the choice of the site of training of the birds is described as follows:

> 'Bois-Roger, in the peaceful pastures of Normandy, an idyllic location chosen for its mild, temperate climate and other conditions favorable to the raising of birds species from the four corners of the world. But [...] above all because it offers the optimum conditions for creating pools, ponds, aviaries, and landing strips.' (Perrin & al., 2003:232)[16]

Several sequences in the making-of documentary show this place and what happened there. Two are of particular interest for us, they both show the film-maker in a meeting with people in casual outfit, sitting in the vast dining room of a mansion around a large table covered with papers and books—the viewer will notice a geographical atlas—the general atmosphere seems to be very relaxed. The commentary spoken on these images mentions the participation of scientific advisors in the project and only one sentence of the ongoing conversation is heard, and dubbed. It is a question asked by Perrin, obviously to scientists: 'So we have to imprint the geese next year, but will they be bar-headed by September?'[17]. The whole scene has a very domestic look about it. And the film-maker's house, described as a castle in one article, is thus presented as a place where scientific practitioners gather around the film-maker, for him to enquire about their work. Perrin's house appears as what Steven Shapin (1988) described as the seventeenth-century 'house of experiment', a place of residence coextensive with a place of scientific work (see also Chapter Four on Peter Scott's house at Slimbridge). The audience of the making-of documentary is therefore called to witness the re-enactment of a historical figure. The film-maker, owner of the place, appears as a sort of gentleman-philosopher. Now, as mentioned in Chapter Four, one essential strategy employed by gentlemen-philosophers in order to elicit trust in their

---

[16] A parallel could be drawn here with the zoos (see Chapter Two). In both cases, the demonstration of the ability to successfully raise exotic animals stands as a demonstration of power and control of nature (Ritvo, 1987).

[17] The film director refers here to the bar-headed goose, a species which got its name from the two bars of brown-black feathers it has on the head. This morphological characteristic is absent from immature individuals. Perrin's question can thus be understood as "will they look like the taxonomical type of the species we want to show?"

audience was to exhibit their capacity for unconstrained action (Shapin, 1994). Free actors in Shapin's words 'do, and are regarded as doing, what they judge best, natural, most right, or most pleasing, as they freely judge these actions to be' (p. 38).

A recurring theme in the narrative about Perrin's career is the difficulties he faced, and of which he triumphed, when producing several of his films. In addition to standing as evidences of unconstrained action, these anecdotes can be analysed as resembling claims of 'suffering', and can therefore be understood as 'means of conveying a sense of authority and authenticity' (Rees, 2007:896). Perrin's profile thus begins:

> 'Four years ago, the day Jacques Perrin presented his provisional budget for a film about migratory birds to his banker, the latter was not taken in by it. The two men have been together in business for thirty years. [The banker] has been in a cold sweat several times with his "favourite, though not always easy to control producer ". "You are not going to repeat *Microscosmos*, are you?" The memories of a shooting extending over three years instead of one, and of a stiff explosion in the budget still lurks. […] "Do you realise you could be heading for ruin? I don't care, [Perrin] answered […]. I will go right to the end." Such determination, such capacity to force on destiny goes back a long way. […]' (Desbenoit, 2001 – my translation)

This evocation of the obstacles the film-maker had to overcome can be compared to the physical feats of the Victorian naturalist, or the emotional constraint endured by the presenters in *Big Cat Week*, as a credibility enhancing factor.[18] Nowadays, the risk insisted upon is also financial. Fortitude and courage are about confronting head on the risk of bankruptcy. Which is not all that far from disinterestedness, one of the core values attributed by Merton to 'the scientific community' as a way of separating it from the rest of society

---

[18] In Chapter Three we saw how evidences of physical courage, and self-sacrifice supported claims to trustworthiness by early film-makers such as Cherry Kearton. Chapter Five showed how natural history presenters supported their claims to expertise by demonstrating their capacity for emotional restraint.

(Gregory and Miller, 1998).[19] In both cases, these claims aim at separating the individuals thus characterised, here the natural history film-maker, from the ordinary citizen. It is as if in order to speak credibly for nature, one had to become slightly unconventional, to demonstrate the ability to 'freely come and go, belong to and disengage from a society and its system of knowledge' (Shapin, 1994:40).[20] Perrin himself appears to encourage this interpretation:

> 'So I go through life with curiosity. I know few things. I didn't study when I was young. But I am prepared to understand, and to make way for significant things. … I make movies because I discover something.' (Moledina, 2003)

Perrin thus reasserts a recurrent theme in the public discourse natural history film-makers hold about their practice, often emphasising the irrelevance of formal academic studies for the practice. Such dismissive attitude towards studies in, for instance, zoology[21] confirms the idea that the natural history film-maker expertise would stem primarily from his or her mastery of the film-making apparatus (Chapter Three and Four) and that he or she would acquire knowledge of the natural world through self-discipline, self-improvement in the field (see the example of Peter Scott in Chapter Four).

'Unconstrained volition' (Shapin, 1994) is presented as a way of being, and is the pivotal category around which revolve all the public presentations of Perrin's persona as it was fashioned to promote the film.

> 'with these lords who circle the globe, skimming the waves without landing, like the albatross, the producer gradually imagines a film out of the ordinary, completely crazy. He believes in it. He won't budge an inch. He believes in it against all odds, just like with each film. Just like

---

[19] See Chapter One for a discussion of the phrase 'scientific community' and its role in the boundary work conducted by scientists.

[20] Another interpretation of the significance given to the economical side of making the film in the support material could refer to the analysis Haraway proposes of Theodore Roosevelt (Haraway, 1989). She emphasises that being economically comfortable is one of the main characteristics participating in the affirmation of virtuous manhood of which the American Museum of Natural History was the material and ideological outcome (Haraway, 1989:42).

[21] See Simon King in Chapter Five and Collin Willock in Chapter Four

> thirty years ago, when he embarked on his first production with *Z*, by Costa-Gavras, doomed, it was then said, to failure.' (Desbenoit, 1999 – my translation)

Two illustrations of Perrin's capacity for free action are particularly foregrounded in these accounts: his dedication to reputedly unfeasible projects and his long lasting focus on the natural world. Associating the former with the latter in the strategy of identity fashioning tends to suggest that producing natural history films would be a mark of unconventionality. We are reminded that Perrin previously produced two other nature films: *Le Peuple Singe* (1988) and *Microcosmos* (1996). In this sense, *Winged Migration* is part of a personal project, rooted in time, completing a trilogy about the animal kingdom started more than a decade ago.

Significantly, when commenting on this crowning achievement, Jean Dorst, a former director of the French national natural history museum and presented as the main advisor for the film, writes in the foreword to the support book *Winged Migration* (Perrin & al., 2003:14):

> 'He [J. Perrin] has long been acclaimed for his approach to the animal kingdom. The casts of his films, ranging from the most prestigious primates to the humblest insects of our woods and fields, have enchanted us. When he turned his mind to the world of birds, he was well aware that it would be the most difficult of all animal realms to penetrate.'

Implicit in this quote is the notion of a hierarchical gradation amongst forms of life. Insects, at the lowest level, crawling in "our woods and fields", are "humble". Primates, our closest relatives, are "prestigious". High up in the air, birds are unreachable. In this vision, humans stand on the top rung. Such hierarchical gradation also points towards the notion of social stratification. As Steven Shapin (1994) has demonstrated there is an idea that social elites would be more reliable than others when it comes to producing knowledge of the natural world. Not surprisingly, when the film-maker's engagement with the subject is mentioned, his making of a film, an essentially visual—sensory—object, which requires for its fabrication the use of optical instruments such as motion-picture cameras, Perrin is not said to set his *eyes* on 'the world of birds' but to have 'turned his *mind*' to it. The slightly literary emphasis placed on

mind appears to implicitly oppose it to the body, as in the traditional statement "the body executes what the mind commends". The film-maker as a free actor is presented as a sort of "master-mind", a demiurge, directing the work of others, just like the mind is supposed to direct the hands (Shapin and Barnes, 1976).

In order to be able to display his spectacular effect successfully—eliciting a feeling of intimacy with the birds amongst the audience—so as to demonstrate his power to control nature through his capacity to show how it works (Morus, 2006), the film-maker had to organise the labour of at least four groups of participants in the nature-culture of natural history film-making: bird carers, cameramen, scientific practitioners, and, somehow, the birds themselves. Turning a thousand birds into 'avian actors' (Perrin & al., 2003) required a special training, based on imprinting. Essential to this process were the bird carers, without whose labour it would have been impossible to achieve the feeling of intimacy elicited visually by the film. However, this aspect of the project was also a very perilous one with respect to the film-maker's claims to trustworthiness. The use of trained birds in a film advertised as portraying wild ones could indeed be perceived as an attempt to deceive the audience, making the film-maker untrustworthy. As we will now consider, several strategies of exposure and concealment (see Chapter Two), involving the various actors mentioned as well as their work, were implemented in the film and the support material so as to prevent such unfortunate outcome.

Building bridges with animals and keeping them natural

Mixing tame and wild: training to represent the wild

Two 'kinds' of birds appear in *Winged Migration*: wild ones, filmed in the wild by cameramen who used the classical techniques of hidemanship to get footage of the birds displaying the expected behaviour, and trained ones, imprinted on human carers and habituated to fly along motorised vehicles but otherwise displaying 'natural behaviour'. Interspersing footage of trained birds with images of wild ones taken by the natural history cameramen was a first means of defusing the potentially harmful consequences of using tame animals.

The cameramen, who could be compared to the travelling naturalists sent around the world by wealthy patrons on behalf of institutions such as the Royal Society in London, or the natural history museum in Paris (Carey, 1997; Laissus, 1981), were provided with strict technical recommendations as regards the types of cameras and films they were to use in the field, as well as very precise lists of sequences and bird behaviour to obtain. They were literally acted upon at a distance by the film-maker, who with his instructions ensured that all footage, be it of wild or tame birds, would be indistinguishable and mix easily together, thus in a sense concealing tame birds amongst wild ones and producing a coherent representation of nature (Latour, 1987).[22] The definition of the telenaturalist is thus expanded, building on the etymological construction of the word. Acting at a distance on collectors of visual objects, the natural history film-maker can be said to practice natural history from afar, to conduct observations on 'immutable and combinable mobiles' (Latour, 1987) assembled in a unique collection, just like the sedentary naturalists in their studies.

Several anecdotes scattered in the support material about trained birds encountering wild ones and the two types mixing in front of the camera play the same role. The trained birds can thus be said to enrol 'truly' wild ones in the network, which brings evidence that they are unspoiled since their wild relatives recognise them as part of the flock (and who would know better than the birds?).[23]

Training animals as a means of acquiring knowledge of the natural world

Whilst it is impossible for the audience to distinguish on screen between wild and tame birds, the making-of documentary extensively shows how birds were imprinted and trained. From a possible liability, the process is turned into further evidence that the film is cognitively reliable. Imprinting and training

---

[22] In addition, advertising the fact that he directed experienced cameramen was a means for the film-maker of suggesting that they were 'extensions of his own senses' (Shapin, 1994:258) and to having their trustworthiness reflected on him.

[23] Symmetrical anecdotes recounting that trained birds joined with passing flocks of wild migratory ones and never came back, further assert the same idea.

were conducted by 'young veterinary students and biologists', most of whom were recruited through advertisement at the local job centre (Perrin & al, 2003). They were wage-labourers hired to accomplish specific tasks. Namely:

> 'to keep our birds company night and day, to live with the birds, sleep, run, swim and eventually fly with them. To listen to them and sense their feelings. These skills can't be learned. They come with dedication.' (Making-of documentary commentary 4:24-4:40)

These carers worked to obtain 'avian actors accustomed to the presence of film crews and their noisy machines' (Perrin & al., 2003:238). Every single sequence of *Winged Migration* involving trained birds in flight was shot with their carers present off-camera. As skilled workers, whose skills and labour are indispensable if the project of making the film is to succeed but who do not appear in the final performance, they can rightly be considered as 'invisible technicians'(Shapin, 1994). Their concealment in the performance asks the question of what 'is to count as *knowledge*, or merely as skill, or indeed, not *even* as skill'(p.381 – original emphasis). If one considers these bird carers as field workers (they were after all biology and veterinary students), their concealment can be interpreted[24] as a form of boundary work destined to assert that knowledge is produced through the film-making process, as opposed to the bird carers' labour, presented as merely producing the raw material upon which the cognitively creative act of the film-maker can be accomplished: birds habituated to humans but still birds, still able to fly. They are birds who have become, through their socialisation by humans, enculturated, and thus apt to be involved in a process of knowledge-production (Rees, 2007b).

As the making-of documentary as well as the support book make visible, the birds raised on Perrin's estate were treated much like companion animals. A number of sequences show the carers talking to birds, cuddling them, sleeping in their cages, behaving in ways which tend to be associated with the fashion in which people treat pets. The relationship between humans and birds revolving

---

[24] See Chapter Four on the manner in which field researchers were allowed to participate in the making of natural history films whilst being confined to the periphery of the process.

around the notion of intimacy thus depicted shows humans engaging in a 'responsive relationship' (Haraway, 2007:25) with animals. The carers are presented as the birds' 'adoptive mother or father', their 'nannies', capable of listening to them and sensing their feelings. Several images in the documentary show them crawling in the grass or swimming in muddy ponds with goslings, covered with soil. Some are shown half naked, others with wild hair, and several are heard 'talking' to the birds and making funny noises.[25]

> 'The birds became like children for their foster parents, yet young ones still retaining all their natural characteristics, and, above all, their independence, flying as they pleased just for the fun of it' (Perrin & al., 2003:237-238)

The making-of documentary thus shows human beings transformed by their relationship to animals as much as young birds socialised by humans. This transformation of humans indicates that despite their imprinting on humans and their training, the birds have retained their natural characteristics and remain potential objects of knowledge. The preparation for the film can thus be presented as an experiment destined to extend Konrad Lorenz's conclusions on imprinting, and the description of the hatching and hand rearing of the birds appears as a prominently techno-scientific process:

> 'In the 1930s, as part of his work on animal behaviour, Konrad Lorenz developed the concept of imprinting. This great Austrian naturalist and Nobel physiology prize winner, made himself the foster father of dozens of baby geese. In applying this concept to make a movie we were heading into unknown territory. Konrad Lorenz's imprinting technique was not known to work with species other than geese. Whereas we want to fly not just with geese but also with ducks, swans, pelicans, storks and cranes'. (making-of documentary commentary 02:34-3:48)[26]

---

[25] It should be noted that no bird is imprinted on the film-maker who is never shown in the making-of documentary engaging with the birds on this level of intimacy. Would this form of relationship to the animals be a sort of pollution of the demiurgic process of making the film? Or could indulging in it damage his credibility?

[26] The image of science which this quote supports is akin to the idealistic popularised view of the scientific enterprise, referred to in the first chapter as the Popperian view of science, which invites us to see the production of theoretical knowledge as an endless

This commentary accompanies images of an egg hatching. The egg bears a number, and rests on a cushion of gauze compresses. Hatching takes place in an artefactual, clean, spotless metal box. These images are followed by others of older chickens being hand fed, in a similarly non-natural environment—small enclosures floored with concrete and walled with wooden planks. The same intent to present the hatching of the eggs as technologically monitored and linked to theoretical knowledge is at work in the support book:

> 'At Bois-Roger, we invented CAI—computer-assisted incubation—and copyrighted the software. […] Everything was painstakingly recorded, species by species: the eggs' temperature, hygrometry, and their contents (by candling), data that will provide valuable information for future researchers.' (Perrin & al., 2003:234)

The same story is told again in a report written by a journalist describing to the readership of a popular magazine the early stages of the project:

> 'Aviary, nursery, veterinary and incubation rooms equipped with computer, calculating the egg temperature and level of hydration, quickly settle in the outbuildings. […] All these stars to be are subject to a level of care and precaution unbeknownst to any maternity ward. Before entering the nursery, the visitors must dip their soles in a disinfectant. Nothing can be allowed to hamper these stars' destiny…' (Desbenoit, 1999 – my translation)

This strategy aiming at "defusing" the potentially harmful effect of the artificial hatching of the birds on the credibility of the project, by presenting it as both motivated and monitored by the quest for knowledge, appears as a sort of justification in reverse. Exhibiting the adoption of the material standards of the production of scientific knowledge is supposed to stand as evidence that the birds are not 'spoiled' by the manner in which they were obtained. These are, so to speak, rational and objective birds.

---

repetition of the sequence hypothesis, test, refutation/validation bringing us ever closer to a true knowledge of nature (see Chapter One). The making of the film is presented as participating in the same logic.

Instead of losing their validity as objects of knowledge, the process through which the birds have been at the Bois-Roger site has, on the contrary, turned them into live specimens, capable of standing as representatives of their whole species. This process, central to the preparatory work of *Winged Migration*, can be identified as an instance of reciprocal enculturation of birds by humans and of humans by birds. It is comparable to the one discussed in Chapter Three about the animals brought back by Attenborough from his *Zoo Quest* expeditions, with which he publicly interacted, thus becoming through these interactions a credible spokesperson for the natural world; the animals in turn becoming through these interactions sources of knowledge of their kin for the viewing public who could interact with them at the zoo. Similarly in the case of *Winged Migration*, through their hand rearing and training, the birds have gained the capacity to represent birds flying over specific landmarks scattered along known migratory routes. They have become capable of furthering the public's visual knowledge of the natural phenomenon of bird migration.

However, an important contrast to other examples of animals' enculturation is that the birds are systematically presented so as to emphasise the collective over the individual. In the film, these are not individual birds which are enrolled but flocks of birds, somehow theoretical entities, validating theoretical models. The film is about the 'wondrous spectacle of instinctive migration' (Perrin & al., 2003:11). It is about patterns, models, 'the migratory calendar, the routes chosen by each species, and each of their populations in function of their needs and aptitudes' (p.12). Specifically, the performance of showing up-close flocks of migratory birds in flight was made possible by bringing, at sometimes great expenses, birds raised in France to places designated in advance by scientific practitioners with knowledge of the migratory routes.[27] For instance pairs of storks flown to the Sahara, or several pelicans to a national park in Senegal. As was the case in *Big Cat Week*, the film's narrative

---

[27] Thus suggesting that they are not complete, as objects of knowledge, if they are not re-inserted within their natural context. The knowledge they embody is thus at the same time a form of situated knowledge. And as living objects of knowledge, the birds make a journey—from the centre to the periphery—which is the reverse of the traditional displacement imposed on stuffed specimens in the tradition of natural history (Latour, 1987; Haraway, 1989).

therefore appears to be pervaded with theoretical knowledge, and *Winged Migration* stands as the incontrovertible representation of one explanation of the natural world (Curtis, 1994). This points towards the last strategy implemented to avoid the risk of cognitive disqualification for the film and its maker which could follow from the use of trained birds to represent wild nature: the visible enrolment of scientific practitioners in the enterprise of knowledge-production.

Parading scientists to support claims to trustworthiness

Once again playing on the register of the gentleman-philosopher, the film-maker is presented as a patron of science, who is said to have gathered for the purpose of making his film 'one of the largest "private" ornithological networks the world has ever known' (Perrin & al., 2003:230), whose members are literally paraded throughout the support material. They answered the call of the film-maker who was desirous to surround the cradle of his project with 'a genuine council of wise men':

> 'And, to approach [the subject] on the surest footing, the producer, now turned director, called on some of the world's greatest ornithologists. […] All these great minds came together to form the film's scientific committee, a genuine council of wise men…' (Perrin & al., 2003:228)

The general tone employed in the support documentation to evoke scientists' participation in the project evidently installs *Winged Migration* in the traditional model of popularisation which 'establishes genuine scientific knowledge, the epistemic 'gold standard', as the exclusive preserve of scientists' (Hilgartner, 1990:520 - see Chapter One). An illustration would be this extract from the foreword to the support book written by one of the scientific councillors:

> 'Thanks to these wonderful, ineffably poetic pictures, *taken without recourse to any special effects or artifice*, we can catch them [the birds] in full flight […]
> *These pictures are the truth and nothing but the truth.* They are visual evidences obtained by methods no scientist would refute.

> […] the specially adapted techniques used to follow migrations by air, to literally fly with these wild birds, must never in any way modify their behavior. Jacques Perrin and his team, whose work I had the pleasure of following, succeeded in using the most sophisticated techniques while rigorously respecting the spontaneity of their wild cast.' (Perrin & al., 2003:12-14 – emphasis added)

This quote stands both as a proper endorsement and as a reminder of the notion central to the dominant model of popularisation that scientists are the only authorised spokespersons for the natural world (Hilgartner, 1990). According to this model, it appears that the capacity to enrol scientific practitioners to participate in the project helps to establish the film-maker as a trustable spokesman for nature, and his representation of the natural world as an appropriate one. This stands in contrast to the communication surrounding *Big Cat Week*, in which sciences and scientific practitioners were invisible. This difference could point towards one possible property of the NHU, that of an institution able to provide the same degree of cognitive authority as a scientific institution would.

However, the film was not supposed to appear publicly as a scientific documentary, 'a learning experience'. It was to remain 'like a dream' (Dawson, 2003), a 'tale of nature' (making-of documentary commentary). One can therefore wonder how the film-maker managed to keep in line these useful participants, the scientific practitioners, whilst preventing them from altering the character of the project. Similarly as what was discussed in Chapter Four, it appears that it is all about rendering the scientists' presence visible if needed, whilst keeping it concealed most of the time. In an interview (Dawson, 2003), the film-maker states that 'If you don't know about birds, it's [the film] an introduction and hopefully you will want to learn more'. Scientific practitioners' involvement is kept hidden in the performance but exposed in the support documentation to which those wanting to learn more will turn.

In order to achieve this goal, it seems that the film-maker made use of at least two tactics. In the first place, some participating scientists were invited to contribute to the support book. And their contributions suggests that this enabled them to address directly the public on issues that mattered to them, in

particular the necessity for nature conservation.[28] These texts, written to promote the film, appear to be like soap-boxes for the scientific practitioners, from where they can advocate the protection of birds and their habitat, as well as link conservation to scientific knowledge, presenting the whole as motivated principally by the future of humanity.[29] This suggests that despite the potential harm to their career, some field scientists seem to be willing to engage publicly in a more direct fashion in conservation than has traditionally been the case, thus 'confirming that the line between field science and conservationism becomes increasingly difficult to police' (Rees, personal communication). This interpretation can in turn be considered as a possible consequence on the evolution of field sciences of the participation of field scientists in natural history film-making.

The second tactic employed to keep scientific practitioners in line rested on the transformation of the shooting of the film into an actual knowledge-making activity. The field scientists enrolled in Perrin's project not only 'kept a watchful eye on the scientific rigor of this ambitious venture' (Perrin & al., 2003:230). They also actively participated in the fashioning of the film, either by sharing their knowledge, or by taking part in the actual shooting of some sequences.

> 'These specialists, for the most part field researchers, indicated to the film team the most interesting nesting and wintering locations in the world, often in rarely seen and very difficult-to-reach places [...]. Some of these eminent ornithologists did not hesitate to take part in location scouting and shooting expeditions. Francis Roux, for example, left his work for several weeks to supervise the extensive filming on the Arguin Banks off the coast of Mauritania.' (Perrin & al., 2003:230)

In the first place, participating in the shooting of the film was an opportunity for bird researchers to get closer to their object of study. Some of them were

---

[28] This is comparable to what was described in Chapter Four with relation to the NHU series *Life*.

[29] In Chapter Three, we already saw how claiming that one acts for 'the common good', in the public interest, is a conventional means of asserting trustworthiness.

even able to fly amongst a flock of birds onboard an ultralight. Biologist Henri Weimerskirch, who is credited as one of the scientific advisors for the film,

> 'said he had been working with birds for 20 years, studying the energetics of their flight. But, of course, he had never flown with them. "It was incredible to be with the animal itself," he said. "There," he said, "you can see exactly how it works"' (Gorman, 2003)[30]

Taking part in the preparation of the performance is presented as a sufficient incentive to draw scientific practitioners into the network and keep them there. Their participation is 'rewarded' with the access to a new dimension of a world which they thought of as a familiar one. The film-making process is presented as a means of enriching the participating scientists' sensory experience and from there, their knowledge.[31] The cinematic enterprise becomes legitimate as a way of producing knowledge.[32] And the making of the film is presented as instrumental to the advancement of knowledge[33], as well as to the increase of

---

[30] Anne Secord (2002), points out how the pleasure given by visual representations—botanical plates—in lay viewers was reproducing the pleasure taken from intellectual pursuit. And she suggests that this way of eliciting pleasure was a means for popularisers of botany of enrolling people who could in turn provide them with observational data. 'Early nineteenth-century promoters of knowledge began to recognize that their inclusionist aims might best be served by adapting to the popular forms of pleasure of the audiences they wished to reach' (Secord, 2002:32).

[31] Which, as seen in Chapter Three, can in fact be seen as the re-enactment of a claim widely associated with the practice of filming natural objects in the 1930s and 1940s.

[32] As mentioned in Chapter Three, this claim can already be identified at the very beginning of the history of films of animals, in the early decades of the 20thC. And as Chapter Four examines, this claim is central to the foundation of the BBC Natural History Unit, in 1957.

[33] A similar strategy is at the core of the documentary about the making of the BBC series *The Blue Planet* (2001). For each episode of the series, the documentary—*Making Waves* (MW)—emphasises the collaboration of scientists to the film-making process, as helpers. A distinction is drawn between the two modes of knowledge-production, scientific research and natural history film-making, but the fact that several of the scientific practitioners could take advantage from their participation in the shooting of the series to make progress in their own research is emphasised. This is for instance evident in the case of the scientist who participated in the shooting of the second episode of the series, called *The Deep*. In this episode, the BBC cameras are embarked onboard a submersible, called ALVIN and run by the Woods Hole Oceanographic Institution, to explore the abyss. At one point, images are shown of the carcass of a whale rotting on the ocean floor. Then the same carcass is shown eighteen months later. On board the submersible are the pilot, a BBC cameraman, and a scientist from the oceanographic institution, Craig Smith. The commentary goes as follows: 'Craig was keen to return to a particular location that he had visited on a previous expedition (MW, 42:42), 'Craig's main interest in returning was to collect pieces of bones to take them to the surface' (MW, 44:35), 'Craig was delighted to get so many specimens lifted to the surface' (MW,

the stock of public knowledge. Making this known to the public asserts the value of the film as a participatory device. This time the audience is invited to visually share in the experience of scientific practitioners at work, in particular see for themselves 'exactly how it works'.

The text presenting the project to a committee at the European Commission and written to get this institution to participate in the financing of the film,[34] makes clear that the making of the film should be considered as a participation in the knowledge-producing enterprise called science, and that for this reason the film-maker should be considered trustworthy:

> '[t]he specific outlook of these scientists and their knowledge of the bird [sic] different behaviours allow us to have a better cinematographic approach. On their side, this film is a unique opportunity to carry out comparative behavioural studies and to deepen their knowledge of birds by following the development of the "Bois-Roger" site.' (Anonymous, 1999)

The claim made here remains quite general. Later in the document a specific example is provided. It relates to the collection of eggs to be hatched at the Bois-Roger site, and it provides us with a very vivid image of the kind of transaction which took place:

> 'While it was comparatively easy to obtain eggs for the most usual species from official bird breeders, scientific partnerships had to be set up in order to obtain the eggs of protected and threatened species. This was the case for instance for the Eurasian cranes; therefore their eggs had to be sought in the most flourishing breeding areas, in Siberia. To obtain permission to take eggs from their nests, we financially sponsored an international scientific program for the protection of the

---

45:22). The participation of scientist Craig Smith in the filming of this episode of *The Blue Planet* is thus presented as providing him with the opportunity to do some research which can be interpreted as an incentive to keep him in the BBC's network.

[34] A document of this kind gives a ready insight as to how the designer of a project wishes to present it to people whom it is necessary to convince of the interest of the project. The fact that the collaboration with scientists should be brought forward as an indication of the seriousness of the project is telling as regards how the designer wants to "popularise" it. Indeed, grant applications, as texts addressed to a public with no previous knowledge of the matter being discussed, can be considered as instances of popularisation (Whitley, 1985).

most threatened Asian cranes. This program is directed by Alexander Sorokin, Professor at Moscow University. However, the Eurasian cranes that we are impregnating [sic – the French for "imprinting" is "imprégnation"] at the present time will take part, when the film is finished, in a program for the reintroduction of Eurasian cranes in Lorraine. This program is directed by Alain Salvi, Professor at the University of Metz.' (Anonymous, 1999)

This story of the circulation of eggs from a Siberian site managed by Russian scientists to Jacques Perrin's estate in Normandy and then the re-circulation of the birds born from these eggs, this time from the site in Normandy to a site in Lorraine managed by French scientists, places the Bois-Roger site in the position of what Bruno Latour (1987), calls a 'centre of calculation', a place situated at the beginning and at the end of networks, from where people can 'act at a distance', where things are accumulated and the world 'mobilised' in order to produce 'immutable and combinable mobiles' (p. 227).[35]

However, on their travel between two sites managed by scientists, the crane eggs, and the birds born from them, spent some time in a non-scientific site and were used by non-scientists. How do these birds nevertheless retain their value as objects from the observation of which it is possible to obtain knowledge? An answer is suggested by the case described by biologist Henri Weimerskirch.[36]

---

[35] Similarly, the collection process is presented in the support book as a kind of techno-scientific achievement, in which technological obstacles combined with social ones had to be overcome in order for the eggs to reach the Bois-Roger site:
'And only once these priceless and fragile eggs had gotten [sic] through the administrative and human obstacle courses placed in their path did they finally reach Bois-Roger. Specially designed "in-flight incubators" were used to transport the eggs at the correct temperature by air, and over land and sea [...]' (Perrin & al., 2003:234).
The person presented as having been in charge of the Bois-Roger centre and its logistics is quoted saying: 'I personally went to several countries, to Iceland, for instance, for the whooper-swan eggs and to Senegal for the pelican eggs' (Perrin & al., 2003:234). The Bois-Roger centre is thus presented as sharing some characteristics with more traditional centres of calculations such as museums of natural history, or zoological gardens, which had a cohort of travelling collectors who were sent to remote locations to collect valuable specimens (Laissus, 1981; Carey, 1997). And a parallel can be drawn with the cameramen sent across the globe with detailed instructions, as was discussed previously in the chapter.

[36] Presented in the book *Winged Migration* (Perrin & al., 2003) as the CNRS Research Director of the Centre for Biological Research, Chizé. The outcomes of this study have been

It involves, this time, pelicans whose eggs were obtained from a Senegalese national park, brought back to Normandy where they hatched. The young birds were then flown back to Senegal first to be trained to fly next to an ultralight, then to be filmed in their "natural context".[37]

> 'The shooting of *Winged Migration* had unexpected scientific spin-offs, one of which was that my team became the first to study the energy expenditure of pelicans during flight. … from an ultralight one could observe in detail [birds] flying in formation and measure their respiratory rhythm and wing-beat rate. …' (Weimerskirch, *in* Perrin & al., 2003:252-254)

This last example allows us to realise the extent to which a strategy implemented to keep the scientific practitioners under control in the network, at the same time guarantees that the birds retain their "cognitive value" despite being raised by non-scientists and trained to act properly in the film, thus further asserting the status of natural history film-making as a practice of knowledge-production. The pelicans, reared, habituated, and trained for the purpose of making the film are presented as having been used to obtain knowledge, to make "scientific" discoveries. It implies to the audience that they have not been spoiled by the training since they are still considered valuable for scientific work. It also confirms that, in the end, the birds were useful, for what is considered cognitively worth investigating when it comes to them is their capacity of flying, a behaviour not suppressed by tameness.[38]

---

published in the journal *Nature* (Weimerkirch & al., 2001). It should be noted that in the case of three of the five co-authors, the address for correspondence is that of the production company, Galatée Films, c/o the film producer Jacques Perrin. This article, whilst not being directly available to a large public, tends to reinforce the position of Perrin at the centre of the network he created.

[37] After the shooting of the African sequences the pelicans were brought back to Normandy, and kept in an ornithological reserve.

[38] In that sense, *Winged Migration* appears as being informed by a 'old-fashioned' approach to the relationship between animals and film technology, one which can be traced as far back as Etienne-Jules Marey's experiments when designing the first motion-picture camera (as mentioned in Chapter One. See Dagognet, 1992). Animals in this approach are considered mostly as self-moving objects, and interesting only as such. This is quite far from the conception of animals as individual sentient beings seen for instance in *Big Cat Week*.

Reassessing the role of institutions in natural history film-making

The various strategies implemented to fashion the personal identity of the film-maker as a trustworthy spokesperson for nature, in the case of *Winged Migration*, when compared to the conclusions drawn from the examination of the historical development of natural history film-making, lead to reassess the status attributed to institutions. The absence of an institutional framework to support natural history film-makers' claims to cognitive authority does not appear to modify the type of evidence they provide to convince the audience of their trustworthiness. Whether natural history film-makers belong to an institution or not, these evidences draw in both cases on the same register of intimacy and the associated reciprocal process of enculturation, where both humans and animals are 'redone' through the 'responsive relationship' in which they are engaged (Haraway, 2007:25) in objects of knowledge and 'knowledgeable actors' (Rees, 2007b:887). Similarly, in both cases various codes of gentility are recycled in the natural history film-makers' identity fashioning process, thus suggesting that in order to be able to appear as a trustworthy spokesperson for the natural world it is preferable to belong to the social elites (Shapin, 1994). Finally, be it through an institution or not, natural history film-makers appear to consistently maintain an ambiguous relationship to practitioners in the life sciences. On the one hand, they exhibit their participation or/and embed the theoretical knowledge of the natural world produced by these scientific practitioners in the stories they tell, which implicitly invests their work with the authority of 'the cultural symbol 'Science'' (Hilgartner, 1990:520), whilst on the other hand confining them to the role of helpers, or local experts, only able to provide the raw material that will be transformed in knowledge by the film-making process.

The only notable difference between *Winged Migration* and the BBC series *Big Cat Week* is that in the former case scientists are visible participants in the legitimisation process of the film-maker as a trustable spokesperson for nature, whereas *Big Cat Week's* presenters, acknowledged participants in the culture of natural history and members of the Natural History Unit, do not need to even refer to scientific practitioners and their work. This could suggest that the BBC

NHU, through the mechanisms highlighted in this thesis[39], stands as a body able to constitute trustworthiness and expertise of the natural world without showing the support of scientific practitioners.

Prolonging this line of reasoning, the display, by the maker of *Winged Migration*, of characteristics signalling him as a member of the social elites, can be related to the conclusions suggested in Chapter Three and Chapter Four. The case of Cherry Kearton suggested that natural history film-making developed in the early decades of the 20thC as a practice encapsulating the belief that the most appropriate and desirable mode of relating to nature was based on its aesthetic appreciation coupled with personal and public improvement through the production of knowledge. Chapter Four allowed to show that at the time of its foundation, the BBC NHU's target audience were the middle classes and the first public figure foregrounded by the NHU in order to establish natural history television as a credible venue for the production of knowledge of the natural world was Peter Scott, who conspicuously exhibited status symbols unambiguously signifying his belonging to the social elites. The similitude observed between these three instances of natural history film-making would suggest a strong correlation of the practice with naturalising the idea that the authority to speak for nature is the preserve of members of social elites.

Sheila Jasanoff remarked (2003:393-394):

> 'who counts as an expert (and what counts as expertise) in UK environmental or public health controversies may not necessarily be who (or what) would count for the same purpose in Germany or India or the USA. Different bodies of expert knowledge come into being, with their associated markers of excellence and credibility, through disparate contingencies of politics and knowledge production in national decision-making settings.'

---

[39] Chief amongst which is the moral authority granted to the BBC, its demonstrated control of a technology of public witnessing, the ritualistic dimension of the appearance in the successive productions of the NHU of telenaturalists, tending to establish them as natural figures of authority.

Britain's observed specificity in terms of the institutionalisation of natural history expertise as expressed through natural history film-making[40] certainly says something about the perceived necessity in this particular country to exert a control on the public discourse about the natural world. Given the observed social stratification prevailing in Britain (Roberts, 2001), and the demonstrated role of class as a determinant of individuals' mode of relating to nature (Ritvo, 1987; MacKenzie, 1988; Franklin, 1999), it could be speculated that the institutionalisation of natural history film-making in a dedicated subdivision of the main national television outlet in Britain, was a means of ensuring dominance in the public sphere for the middle class values and beliefs with regard to the most appropriated way of relating to the natural world. In this light, natural history films could be analysed as an element participating in naturalising the beliefs that the natural world is best engaged on an aesthetic and sensory basis in order to produce knowledge of it in the public interest. At the end of this investigation, natural history film-making in Britain appears as a culture of knowledge-production centred on the mastery of the film-making process, structured around a powerful natural history institution able to constitute expertise (Jasanoff, 2003), the BBC Natural History Unit, and the main evidence available to natural history film-makers for standing as trustworthy spokespersons for nature is the demonstration of their intimacy with the natural world, and their capacity to act as bridge-builders between humans and animals.

Conclusion

This chapter centred on an examination of the film *Winged Migration* allowed to examine how a natural history film-maker can achieve the authority to speak for nature without appearing on screen. It was suggested that this happened in the first place through the film itself and the sensory—mostly visual—

---

[40] In other European countries, the practice has either remained the deed of isolated individuals (in France for instance), or within institutions which have found inspiration in the BBC NHU (for instance NRK's (the Norwegian broadcasting corporation) natural history unit in Norway (see the interview of its founder, Hans Christian Alsvik, Wildscreen, 2008i).

experience it made possible, highlighting as central to the process the theme of intimacy. The second means of achieving authority was identified as the various strategies of identity fashioning contained in the support material. Foremost amongst these was the presentation of the film-maker as an efficient bridge-builder between humans and animals. We saw that the presentation of the training of birds by humans as one of reciprocal enculturation, as a 'dance of relating' (Haraway, 2007), prevented the fact that tame animals had been used in a film supposed to convey knowledge of wild ones to derail the film-maker's claim to credibility. The examination of the support documentation also indicated that other actors enrolled in the project, scientific practitioners, were similarly prevented from transforming the claim 'beyond recognition' (Latour, 1987:108). This was achieved principally by presenting the making of the film as a knowledge-production endeavour, from which scientific practitioners could benefit because it brought them a sensory knowledge and an aesthetic pleasure which they could not have been able to obtain through the sole practice of science.

Chapter Seven

Conclusion. Natural history film-making, an intimacy-based authority to speak for nature

> 'Westerners were the ones who turned nature into a big deal, an immense political diorama, a formidable moral gigantomachy, and who constantly brought nature into the definition of their social order'.
>
> (Bruno Latour, 2004:43)

The investigation proposed in this thesis of how authority to speak for nature is achieved in natural history film-making was divided into three parts. The first one presented the theoretical and methodological tools necessary to engage in this investigation, making the case that natural history films should be considered as artefacts generated by a culture of knowledge-production, natural history film-making. In the second section, we saw first how this culture could be seen as ensuing in direct line from the Victorian culture of amateur natural history, associating its values and beliefs with a new set of material practices, and second how it succeeded in maintaining its social identity with relation to practitioners in the life sciences. Finally, the third section proposed two case studies aimed at furthering our understanding of some of the issues highlighted in the second section—the type of evidence provided by natural history film-makers of the legitimacy of their standing as spokespersons for nature, and the way they negotiate their autonomy with relation to practitioners in the life sciences.

Natural history film-making is now an almost centenary practice. Cherry Kearton, one of its first adepts, started filming big game in Africa in 1910. In so doing, he contributed to fashion a new public figure, the natural history film-maker. The development, in the post-war period, of the technology of public distant witnessing called television, proved a bonanza for natural history film-making, allowing it to reinforce its status of a knowledge-production

practice. Ever since, natural history films have occupied an important position in the landscape of public rational entertainment, increasingly contributing to fashion the image Westerners form of nature and of how this entity relates to their societies.

Natural history film-making as a public understanding of science

Adopting the constructivist approach advocated by SSK allowed us to draw the attention to the fact that socially significant enterprises of knowledge-production could be other than the scientific ones, that knowledge produced by cultures of knowledge-production other than science and technology could be 'taken for granted or institutionalised, or invested with authority by groups of people' (Bloor, 1991:5). The symmetry postulate, central to the SSK approach, enabled us to recognise that although produced outside the scientific sphere, natural history films are public objects of knowledge relevant to the questioning of the public understanding of science, for natural history film-makers can be envisaged as a community of individuals engaged in negotiations with scientific practitioners and with society at large over the question of who is entitled to speak for nature. A review of the literature on the history of natural history showed that this authority has not always belonged to the same group of people nor been associated with the same practices. At the time when the natural historical enterprise was the dominant way of investigating the natural world, spokespersons for nature were skilled observers, concerned about describing, naming, and classifying. When professional life sciences superseded natural history, authority to speak for nature turned into the preserve of a self-proclaimed scientific elite using experimentation to explain the natural world. Finally, the review of the literature on natural history films suggested that, far from being instances of popularisation of the knowledge produced by practitioners in the life sciences, they are artefacts originating in a culture of knowledge-production centred on the practice of observation, which contributes to fashioning specific social identities.

The animals as ethnographic others in natural history films

The second chapter made the case that, given the variety of aspects that had to be addressed in order to properly assess the position of natural history film-making within the broader 'social totality' (Turner, 1991), the most suitable methodological approach would be an ethnographical one. The visual ethnographical methodology in particular, through the equal attention it recommends to pay to both the contents and the context of visual artefacts (Banks, 2001; Rose, 2007), enables a focus on the intricate web of social relations and meanings in which the making, distribution and consumption of visual artefacts are suspended (Geertz, 1973). In addition, the ethnographical approach would allow us to emphasise that natural history film-making can be seen as an instance of treating animals as ethnographic others. Indeed, the theme of love, stewardship of animals sheds light on "the colonial situation" (Stocking, 1991) in which natural history film-makers position themselves, often appearing to address the animals as ethnographical subjects (Griffith, 2002). Not only does the place where natural history film-making is practised overlap with that where many Western ethnological studies are conducted, but the same dream of reconstituting an image of the lost Garden seems to be a driving force for both ethnographers and natural history film-makers (Stocking, 1991a; Mitman, 1999). More specifically, the 'methodological objectivity and non-interventionist "participation"' (Turner, 1991:303) which many natural history film-makers claim to adopt, exemplified in the case of *Big Cat Week*, but already detectable in Kearton's desire to show animals behaving naturally 'unsuspicious' of the presence of the cameraman, and even in the emphasis placed on behaviour which is at the root of natural history film-making, sounds like an unadulterated echo of anthropological studies, or at least stands as strongly reminiscent of these. In this light, natural history films' focus on the fauna of tropical countries, presenting the animals as the native/natural inhabitants of these areas, as opposed to the local population of these often former colonies, is an invitation to reflect on the fact that animals do not revolt and therefore allow for 'the simultaneous promotion of European interests and "native welfare"' (Stocking, 1991a:64). The exploitation of the land being

presented, for instance in the case of natural reserves exploited by Western companies such as the Maasai Mara, as primarily motivated by a desire to act for the "greater good" of the animals. Animals will not denounce the potential contradiction of the conduct. They are the genuine others Westerners need as inhabitants of these places. Local populations are not alien enough, which prevents from exploiting their lands whilst maintaining a seemingly morally virtuous outlook (Haraway, 1989; Kuklick, 1991; Feit, 1991). Hence the necessity to push them outside the screen and instead turn the animals, these silent others, into the true natives of the land, to whom feelings of gratitude can be freely attributed, thus self-absolving us for our predatory behaviour towards nature.

Natural history film-making, co-existing with science

The first empirical chapter of this thesis, Chapter Three, was devoted to examining the origins of natural history film-making so as to provide elements of a sociological explanation of the emergence and good fortune of the genre. Cherry Kearton was identified as the most significant figure of the early times of this practice, and it is on a study of his career, as a naturalist and as a showman, that we opened our investigation. Remarking that opposition to hunting—a common denominator of the approach to nature favoured by both the upper and lower classes— had been a central theme throughout Kearton's career, it was thus suggested that the development of natural history film-making could be understood as an attempt by the rising middle classes, to which Kearton belonged, to fashion specific modalities of relating to the natural world and to give a dominant position to the set of values and beliefs governing them. In this context, given the high esteem in which the members of the middle classes held rational leisure, emphasising the notion that natural history film-making was a knowledge-production practice which could add to the common stock of knowledge appeared essential. The film-maker guaranteed the reliability of the knowledge produced by his films through various strategies. Some were based on the recycling of values taken from the Victorian culture of amateur natural history, such as belief in self-improvement, positive perception of rational leisure, valuing of physical and

emotional self-restraint, or the idea that an intimate contact with nature, symbolised, in Kearton's case, by his exhibition of his friendship with animals, would bring genuine knowledge of it. Others were identified as instances of usurpation of status symbols (Young, 2003), a manoeuvre which would be repeatedly recognised throughout the history of natural history film-making. Beginning with David Attenborough, who followed in Kearton's footsteps and gained his status of a trusted natural history film-maker by usurping some of the status symbols of the London Zoological Society and its members, in particular the ability to capture wild animals, maintain them alive, and exhibit them so as to favour the establishment of an intimate relationship between the public and them.

The fourth chapter focused on the evolution of natural history film-making in the context of the development of television in Britain from the 1950s to the late 1970s. The main development in this period, in terms of the history of natural history film-making, was the creation of the BBC Natural History Unit (NHU) in Bristol. We saw that this institution emerged from an association of broadcasters with a network of naturalists (Davies, 2000a). Our examination of the mode of presentation, so as to make it appear credible, of the culture of natural history film-making on the relatively new medium that television was in the 1950s, first allowed us to remark that the recycling of the codes of the genteel conversation had been instrumental in the effort to present the television studio as a place where knowledge of the natural world could be produced. Such recycling benefited from the foregrounding of Peter Scott's gentlemanly figure, as well as from the fact that it occurred alongside the fashioning of television as a technology of visual public witnessing, authorising the spectators, through vision alone, to participate, as if physically present, in remote events, and to gain from this participation at a distance firsthand knowledge of the natural objects and phenomena presented on the television screen. Given the emphasis it places on the sense of sight as a way of acquiring knowledge of natural objects, television proved ideally suited to match the culture of natural history. The knowledge-production dimension of the culture of natural history film-making was thus enhanced by its relocation on the new medium. However, the authority of the NHU as a knowledge-

producer, ensuing from its capacity to display images of animals behaving naturally in their native habitat, got cognitively challenged by the development of a scientific discourse on the topic, which gained increased public visibility in the late 1950s-early 1960s. As a consequence, and in order to preserve this credibility as a producer of natural historical knowledge, and avoid becoming a mere populariser of ethological knowledge, the NHU found itself in a position where it had to negotiate 'the quandary of the fact builder' (Latour, 1987:103). The NHU had to enrol ethologists in its claims to knowledge, in a classic attempt to convince the audience of its cognitive reliability by exhibiting the endorsing participation of scientific practitioners. But given the heavy symbolical weight of the cognitive authority vested in science, the NHU had to keep these scientific participants in line, so as to prevent them from transforming 'beyond recognition' (Latour, 1987:108) its claim that natural history film-making was a culture of knowledge-production in its own right. From the late 1960s on, natural history film-makers therefore engaged in a form of 'boundary work' (Gieryn, 1983), centred on their mastery of film-making, and aimed at confining scientific practitioners to its periphery, to the role of local experts providing the NHU with the raw material needed to produce 'working objects of knowledge' (Daston and Galison, 2007). During the 1970s, expanding on this notion, the NHU increasingly came to claim that whereas the knowledge produced by field researchers was local, specialised and limited, the knowledge produced by natural history film-making was general and all encompassing. This process could be seen reaching a sort of climax in the communication surrounding Attenborough's series *Life on Earth* (1979). The making of the series involved the whole institution, and the public discourse about it appeared to encapsulate the notion that the credibility of natural history film-making was guaranteed both by the film-maker himself and by the institution in which the films are produced and which controls their distribution.

Natural history film-makers as spokespersons for nature

The fifth chapter of this thesis concentrated on the BBC series *Big Cat Week.* Addressing the series as a performance of knowledge enabled us to show that,

in conformity with what had been identified in the study of Cherry Kearton's career, the main evidence the film-makers provided to support their claims to expertise was the demonstration of their intimacy with the place depicted in the series and the animals featured in the stories. We also found that, as Chapter Four suggested, although scientific practitioners' contribution in the form of the knowledge they produced is not acknowledged, the stories told in natural history films such as *Big Cat Week* make abundant use of the concepts and categories central to the practice of behavioural ecology, that is of notions ingrained in the Western way of apprehending the natural world and relating to it, foremost amongst which the idea that nature and culture must remain separated from each other and that actions motivated by the love of animals unquestionably result in a betterment of the common lot. This led to investigate the engagement of the film-makers claiming expertise and to conclude that the approach to exotic animals and to their habitat representative of the culture of natural history exemplified in *Big Cat Week* could be analysed as an instance of enrolling the public in support of a movement of appropriation of a piece of land by a network whose interest was that it remained out of reach of the local population. From this conclusion followed an interrogation on the status of the NHU, which could be seen as being involved in the association of the practice of natural history in remote territories with an enterprise of appropriation of areas, just like nineteenth-century natural history institutions, such as natural history museums or botanical gardens, were central cogs in 'the grand appropriative enterprise' (Ritvo, 1987:210) of Western imperialism, both providing it with an epistemic justification and publicly naturalising it. As much as for example nineteenth-century zoos, which have been identified as allowing the people *de facto* excluded from the exotic areas reserved for the enjoyment of an elite to get the impression of participating in and having a share in the imperial project (Ritvo, 1987), natural history films could be seen as participatory devices. They would be defined as "ersatz", partial reproductions of the natural world, given as faithful recreations of its essence, and their social function would be to give the public at large the impression that they do participate, not only figuratively but genuinely, in the enjoyment/consumption of nature, whilst being kept at a distance from it by

these simulacra, thus leaving areas of preserved nature to the exclusive enjoyment of the happy few.

The second case study, in the sixth chapter of this thesis, stood in contrast to the preceding one, by focusing on a film almost devoid of commentary, where no visible learned person mediates the audience's relationship to the natural world, a film made and distributed outside the institutional framework of the NHU. *Winged Migration* allowed us to confirm the pivotal function of the notion of intimacy in supporting natural history film-makers' claims to authority to speak for nature. In this film, this function is exercised by the film-maker's demonstration of his ability to reach birds on their 'ground' and to enable the audience to feel intimate with the animals. We saw that this was achieved through the cinematic tools of sight and sound. Filming the birds up close whilst in flight gives the audience the impression to be looking at the birds from within the flying flock, as if perched on the back of one of them. Giving priority to the sounds produced by the birds over human made music enables to create a feeling of mutual understanding, of a collective based on knowledge. The examination of the strategies of disclosure surrounding the making of the performance similarly highlighted the centrality of the notion that an intimate relationship had to be built with birds for the film-maker to be able to build his performance. And the construction of such intimate relationship requested that the birds be presented as being part and object of a knowledge-production process.

These case studies enabled us to consider two contrasting aspects of the relationship between natural history film-makers and practitioners in the life sciences and the theoretical knowledge they produce. In both cases this knowledge appeared to pervade the stories told in the films, which is an indication of the indissoluble relationship between it and society (Bloor, 1991), of the fact that science is the culture by which Western societies organise their relationship to the natural world (Latour, 1999). However, in *Big Cat Week* this was not acknowledged, whereas in *Winged Migration* the use of this knowledge was made explicit. In both cases, however, exposing this theoretical knowledge developed by scientific practitioners was not presented as the end to which the film was aiming. On the contrary, this knowledge appeared as a set

of building blocks which could be used by the film-maker to produce all-encompassing objects of knowledge, films. The fashioning of the image of the film-maker as an individual figure contrasts sharply with the presentation of the scientific practitioners as an undifferentiated crowd of specialists where each provides bits of knowledge. The case studies thus shed light on the film-making process as an enterprise of knowledge-production feeding on the work of individual scientists but transcending the results of this work through its recreations of nature and its ability to appear as all-encompassing. In terms of the public understanding of science, we saw that natural history film-making would be best understood not as an instance allowing, or not, an 'appropriate' understanding of science, but as a modality of public understanding of science, where one 'public' is the film-makers, who are bearers of one specific culture, the culture of natural history and have to negotiate their relationship to science, since their practice opens for questioning the meaning of such criterion as 'valid knowledge' (Wynne, 1995). Instead of conceptualising natural history film-makers as *spokespersons for science* (Davies, 2000a), these observations led to regard them as *spokespersons for nature*.

Defining the telenaturalist

Natural history film-making as a culture of knowledge-production thus appears to be in line with the scopic regime established by the visual revolution of the 19thC postulating that a natural distance can be set between the observer and the observed without impairing the ability for the former to get and produce knowledge of the latter (Crary, 1990; Noordegraaf, 2003). This natural distance appears to be the principal determinant of the telenaturalist's practice. As we saw, the term designates a figure of expertise, a spokesperson for nature, who participates in the culture of knowledge-production of natural history film-making. The telenaturalist is, in the first place, an individual practising natural history on the (television) screen, for the benefit of the audience. The natural distance can translate in three instances and in every cases is illustrated by the exhibition of a balance between intimacy and distantiation.

The telenaturalist appears as someone visible on screen and exhibiting a strong intimacy with the place and the animals shown. He or she exhibits this

intimacy through his or her ability to name and recognise individuals, and through a display of signs of affective engagement with them. This intimacy is however counterbalanced, or perhaps reinforced, by his or her ability to show emotional self-restraint and to refrain from "breaking the boundary" between what must remain the human world and the natural world. This is in a sense reminiscent of the remark made by Evelyn Fox Keller (1985), when describing the attitude of geneticist Barbara McClintock towards her research objects as encapsulating 'affection, empathy, and "the highest form of love: love that allows for intimacy without the annihilation of difference"' (quoted in Jaggar, 1989:162). The cognitive authority of the telenaturalist stems from this very balance between affective involvement and emotional self-restraint, this ability to maintain the difference, thus defining an irreducible interval between humans and animals in which a commentary can be inserted (Schechner, 1985) and bringing legitimacy to claims unrelated to the animals and bearing on humans affairs. The word "telenaturalist", as it is used in this thesis, can be endowed with three different understandings, drawing on the meanings of the prefix "tele". These three understandings are not exclusive from one another but on the contrary allow to grasp the nuances of the word and to apprehend what has become of natural history in the context of natural history film-making.

In the context of natural history film-making, the most obvious acceptation of "tele" refers to the context where the character is encountered, television. In this sense, the telenaturalist is an individual practising natural history first and foremost on the television screen, as a subject for television, displaying his or her intimacy with the place and animals in front of the cameras. The field is a place where sequences are filmed, which once assembled and then projected on the screen represent the practice of natural history. This is illustrated for instance by the presenters in *Big Cat Week*. In such acceptation, the telenaturalist stands as a mediator between the audience and the natural world.

Second the prefix "tele" is the Greek root for 'from a distance'. It points towards the notion that the telenaturalist is someone practising natural history at a distance from the natural objects and their context. In this acceptation, Peter Scott and his host in the *Look* studio, producing natural historical

knowledge through their civil conversation centred on the footage the guest had brought with him or her are both telenaturalists. Similarly, the film-maker in a case like *Winged Migration* is a telenaturalist, producing natural historical knowledge from a distance through his remote action on travelling cameramen and assembling the sequences they brought him from afar. The notion of intimacy helps the audience believe in the expertise of the film-maker, hence in his or her legitimacy as a spokesperson for nature. For the film-makers demonstrate their expertise through their ability to elicit a feeling of intimacy with the natural world in the viewers through their films. The acceptation of the word "telenaturalist" as designating an individual practising natural history from a distance could also invite us to include members of the audience, made intimate with the natural world by the film and enjoined to practice natural history from a distance through their contemplating the representation of natural objects spread before them on the screen. Natural history films, through the ability they offer viewers to roam freely the natural world without leaving the secure enclosure of their home, transform us, the audience, into sedentary naturalists, able to see laid side by side related organisms which a great distance, in time or space, separate. And this practice of natural history on the television screen stands as a reminder of the kind of practice of knowledge-production proposed to natural history museum visitors who could extract knowledge from natural objects enclosed in glass boxes, just by gazing at them and thus remaining at a distance from them. The same comparison could be drawn from the experience of visiting a zoo where the distance is maintained whilst intimacy with the natural world encouraged.

Finally, the third sense of the prefix "tele", which informs us on a supplementary meaning of the word "telenaturalist", relates to the notion of completeness, the end of a process. In this sense, the word "telenaturalist" would evoke the idea that through natural history film-making, the practice of natural history invented in the early modern period, pushed to the margins of acceptable scientific practice in the 19thC and transformed into a popular culture of knowledge-production, has reached a state of completion, and surely an unintended one, the film-making technology proving ideally suited to match the '[mixture] of experiences and beliefs' (Bloor, 1991:15) associated with the

culture of natural history. In the first place, 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 elicits. The film medium cannot escape its association with the notion that it is a visual art, driven by aesthetics. Second, the film-making technology, as a technology of visualisation, or of production of visual representations, appears to have played a role which can be compared to that attributed to complex technological apparatuses around the mastery of which a group of specialists can be aggregated (Golinski, 1998). As we saw, in the context of the demonstrations of cognitive credibility associated with the practice of natural history film-making, one major aspect insisted upon is the property of specific material skills, centred on the mastery of the film-making process. Cherry Kearton offered a ready and early illustration, emphasising his technical expertise as evidence of his trustability, as opposed to less skilled cinematographers, unable to produce reliable representations of the natural world. But later, and in the same vein, film-makers at the NHU took argument of their skills at making films which allegedly represented the natural world in a more adequate and complete manner than field scientists using a camera could, to support their claims to being legitimate spokespersons for nature. In a similar fashion, the film-making process was made to play a pivotal role in *Winged Migration* as a means of acquiring knowledge of the birds and allowing the film-maker as much as the audience to reach the birds on their 'ground' so as to acquire knowledge of them. In addition, the film-maker's mastery of the film-making process was instrumental in allowing him to enrol scientific practitioners, keeping them in his network through the discoveries their participation in the fabrication of the film allowed them to make. And we saw that an institution could even be formed around the mastery of this technological means of producing visual representations of nature, even though it was recognised that such institutionalisation of natural history film-making was first and foremost a rhetorical strategy to lend further cultural power to the practice (Gieryn, 1988).

Our examination showed a recurrence of the association of natural history film-making with strategies deployed by film-makers in order to appear to be

endowed with the authority to speak for nature. The persistence of the association of one material practice aiming at producing public representations of nature with epistemic claims, suggests that in Western societies, it is preferable to appear as cognitively trustable if one is to hold a public discourse about the natural world. Animals and nature in general would be worthy of interest mostly insofar as knowledge of them can be produced, the natural world existing as an object of knowledge. Natural history films would contribute to convey the notion that knowledge-production is the most desirable way of relating to animals and the natural world in general. These recreations of nature given as embodiments of theoretical knowledge demonstrating how the world really is, and standing as testimonials for the skilful expertise of their authors, thus turn out to be encapsulating debates, claims, and beliefs about how the world should be, and should be engaged with (Latour, 1987; 2004). Natural history films contain the idea that genuine knowledge of nature starts with a close encounter, an intimate relationship to the natural world. The main conclusion for this thesis is that with natural history film-making we are facing a genuine culture of knowledge-production, which needs to be considered for itself and not gauged against the life sciences.

Looking ahead

The study proposed in this thesis, concerned with one specific aspect of the culture of natural history film-making, how natural history film-makers achieve the authority to speak for nature, how they manage to appear as experts in public, is inevitably incomplete. In this last section I would like to discuss what could be pointed at as the two principal limitations of this work. First, the fact that it does not confront the claims made about natural history film-makers' self-presentation with the manner in which it is actually received by the public. In other words, the thesis as it stands does not allow us to know whether the films and their makers are perceived by their audiences as genuine working objects of knowledge, and as trustable sources of knowledge of the natural world. Second, although the last empirical chapter is centred on a French film, direct comparison between the British case and other traditions of natural history film-making, or other national contexts, has been avoided. These can be

seen as quite serious lacunas. However, this project was undertaken with the hope of opening a new perspective from which to look at natural history film-making. Namely to demonstrate that natural history film-making could be fruitfully seen as an enterprise of knowledge production rather than one of the "vulgarization" of the knowledge developed by practitioners in the life sciences. Adopting such an attitude towards natural history film-making allowed me, it is hoped, to open new avenues for research.

As was noted in Chapter Two, other sites than the manner in which natural history film-makers go public, studied here, could be investigated in order to bring further details to the picture of the social life of natural history films. Similarly other questions could be posed to the films. The preceding chapters were devoted to examining the strategies implemented by natural history film-makers in order to support their claim to be reliable sources of knowledge of the natural world. Future research could try and investigate how these claims are actually received by those to which they are destined, the audiences for the films. Such a project could perhaps take the form of an investigation in oral history, asking people to narrate their memories of the first appearances of, for instance, David Attenborough, and how their perception of the presenter evolved over time. Such a project might lead to a better understanding of what could be called the social construction of Attenborough, thus allowing us to understand the social mechanism underlying the construction of a national figure of authority and the role played by Attenborough's advertised intimacy with nature in the process. In the same vein, the manner in which today's natural history films are received by audiences could be investigated through the organisation of focus groups and possibly the exploitation of the data generated by the BBC audience research division. Such research would perhaps allow one to get a picture of the role natural history films play in allowing their audiences to position themselves in the natural world. Not unrelated would be a study of the manner in which natural history films and the claims to knowledge-production laid by their makers are received by another social group claiming to produce reliable knowledge of the natural world, practitioners in the life sciences, and more specifically field researchers. The present work indeed suggests that natural history film-making can be seen

engaging themselves in a sort of 'boundary work' aimed at resisting the cognitive hegemony of sciences but at the same time making large use of the knowledge produced by sciences in order to structure the stories they tell us. Obtaining the point of view of the producers of such knowledge on the films could be a valuable addition to our knowledge of the manner in which field scientists position themselves within society, and further enliven the picture we have of the social role of natural history films.

In addition to being an invitation to devote more attention to the reception of natural history films, to the site of consumption of these films, the study presented in this thesis can be seen as encouraging more work to be done in another direction. As was discussed in Chapter One, the study presented here focuses most particularly on the British aspect of natural history film-making. What could be seen as a limitation of the present study could also be seen as laying ground for fruitful comparison studies with other traditions of natural history film-making. Such comparison could perhaps be approached from two directions. One would be more concerned with the films' contents, the other with the context in which they are made (although as we have seen, separating the two is somewhat artificial). As for the first one, another prominent producer of natural history films is Japan. The director of programming of television channel Animal Planet explained during a symposium in 2007 that the reason why he would not schedule a Japanese production on his network was that the *editing* of the films was not appropriate for a Western audience, being too slow it resulted in a representation of nature which was too unfamiliar to Western spectators.[1] A comparison between the British tradition and the Japanese one of natural history film-making could allow us to draw some conclusion as to the role of natural history films in both reflecting and fashioning the vision of nature of the societies in which they are produced and consumed. A second cross-cultural comparison of traditions of natural history film-making could aim at testing and expanding one of the propositions made in this dissertation,

---

[1] Gregg Mitman, personal communication, July 2007.

the notion that a relationship can be recognised between the culture of hunting and the culture of natural history film-making.

A cursory examination of the traditions of natural history film-making in various Western countries suggests that those in which such a tradition is the most vivid are Britain, Germany, Sweden, Norway, mostly countries from Northern Europe. On the other hand, countries were it is less developed and almost absent appear to be those from the South of Europe. In this rough classification France would be located somewhere in between as a country with a not very strong tradition of natural history film-making but nonetheless some examples of natural history film-makers. Now if one were to consider the culture of hunting as it varies between European countries, it would appear that a cultural divide can be located between the North and the South of Europe. Such hypothesis is developed most notably in the work of Bertrand Hell.

Although he demonstrates that 'a common underlying symbolic code [...] structures hunting practices in Europe' (Hell, 1996:209) as practices primarily intended 'to deal with the Wild' (*Op. cit.*:216) as opposed to the social, Hell nevertheless points towards two distinct conceptions of hunting co-existing in Europe, with different techniques, 'ethics and modalities' (*Ibid.*), and which can be recognised in clearly defined geo-cultural areas. The first one, which he calls 'hunting as harvesting' (*Op. cit.*:206), prevails in North Western Europe, the area of repartition of Germanic languages, for instance countries like Germany or England, but also the Scandinavian peninsula. This conception of hunting is

> 'embodied in the silent approach of the deer [...] [and] revolves around a fundamental preoccupation [for] conservation and protection, [it is] hunting as a quest for the animal which provides the most prestigious trophy'(*Op. cit.*:206)

In contrast with this culture of hunting, 'individualistic and elitist' (*Op. cit.*:207), in Southern Europe, and most notably the major part of France, prevails a communal conception of hunting 'associated with the notion of a free right of gathering' (*Ibid.*). In these regions which all have in common a legal system 'modelled on the Roman tradition' (*Op. cit.*:208),

> '[k]illing wild animals answers mainly to the real or imaginary necessity of protecting cultivated lands, thus becoming an aspect of the farmer's utilitarian logic.' (p.207)

The practice of natural history film-making is as we have seen, primarily the ability to stalk animals, and since its early years it is associated with a preoccupation for the conservation of wild fauna and flora (see Chapter Three). This practice seems therefore to be much closer to the conception of 'hunting as harvesting' prevailing in Germanic countries than it seems to be to the conception of 'hunting as gathering'. Moreover, the geo-cultural division of Europe according to the conception of hunting, seems to reproduces to some extent the repartition of the practice of natural history film-making in this continent. Namely, the countries where we find a recognisable tradition of natural history film-making are those where an elitist conception of hunting prevails. Whereas in countries where hunting is conceived as a means of protecting cultivated lands, there is no discernible tradition of natural history film-making. A cross cultural comparison could be used to further explore the social origin of natural history film-making and understand better why the practice flourished more in some cultural areas than in other and what this says on the relationship of specific cultures to nature.

REFERENCES

Adams, J., 1992, 'Behavioural Ecology: An Evolutionary Approach (Review)', *The Journal of Animal Ecology*, Vol. 61, No. 1.: 235-236

Allen, D., 1994, *The Naturalist in Britain*, Princeton: Princeton University Press (first edition, 1976, London : A. Lane)

Allen, D., 1996, 'Tastes and Crazes', *in* Jardine, N. & al. (eds.), *Cultures of Natural History*, Cambridge: Cambridge University Press:394-407

Allen, G., 1975, *Life Science in the twentieth century*, Cambridge, New York: Cambridge University Press

Anonymous, 1909, 'Birds and beasts, ltd.', *The Daily Mirror*, 6 October 1909:5

Anonymous, 1910, 'The cinematograph in British East Africa', *The Daily Mirror*, 15 October 1910:8-9

Anonymous, 1911a, 'Films from the Jungle: Mr. Cherry Kearton returns to England with wonderful cinematograph pictures of animals.', *The Daily Mirror,* 20 December 1911:1

Anonymous, 1911b, 'The King's Big Game expedition', *The Daily Mirror*, 20 December 1911:3

Anonymous, 1912, 'Animal Photography', *The Times*, Issue 39790, 9 January 1912:9

Anonymous, 1913a, '"Nature's Zoo." Mr. Cherry Kearton's Achievement', *The Times*, Issue 40183, 11 April 1913:9

Anonymous, 1913b, 'Photography Of Wild Animals. Mr. Rainey's African Hunt', *The Times*, Issue 40305, 1 September 1913:3

Anonymous, 1924a, 'New Nature Scenes From Africa', *The Times*, Issue 43715, 28 July 1924:10

Anonymous, 1926, 'Pictures Of The Jungle. Mr. Kearton's New Film'. *The Times*, Issue 44259, 30 April 1926: 12

Anonymous, 1929, 'The cinematograph industry', *in* 'Film Number'. *The Times,* supplement to Issue No: 45 155, 19th March 1929:vi

Anonymous, 1953a, 'Historic Event in Television', *The Times*, 03 June 1953:17 ; issue 52638; col A

Anonymous, 1953b, 'Broadcast by the Queen', *The Times*, 03 June 1953:12 ; issue 52638; col D

Anonymous, 1965, 'Mr. David Attenborough is new B.B.C.-2 head', *The Times*, 5 March 1965:6

Anonymous, 1999, 'The Winged Migration', European commission, accessed online at <ec.europa.eu/environment/funding/projects/1999/3a.htm>

Anonymous, 2001, 'Propos du réalisateur', *in* BACFilms, 2001, *Dossier Distributeur* [a file provided by the French distribution company to the cinemas screening the movie].

Anonymous, 2008, *The Telegraph,* Saturday 5 January 2008

Appadurai, A., 1986, 'Introduction: commodities and the politics of value', *in* Appadurai, A., (Ed.), 1986, *The social life of things*, Cambridge, Cambridge university press: 3-63

Appleyard, B., 1984, 'Attenborough goes back to nature', *The Times*, 19 January 1984:10

Arluke, A., 1994, 'Managing emotions in an animal shelter', *in* Manning A. & Serpell, J. (Eds.), 1994, *Animals and Human society*, London, New York: Routledge:145-165

Arluke, A., 1999, 'Uneasiness among laboratory technicians', *Occupational Medicine*, Vol. 14, No.2: 305-316

Attenborough, D., 1955a, 'British Expedition Captures a Caiman', *The Times*, 11 May 1955:11

Attenborough, D., 1955b, 'Zoologists capture monster fresh-water fish', *The Times*, 28 May 1955:7

Attenborough, D., 1955c, 'Blowpipes and medecine men', *The Times*, 22 June 1955: 11

Attenborough, D., 1955d, 'Hoatzin and Manatee captured', *The Times*, 16 July 1955:7

Attenborough, D., 1958, *Zoo Quest to British Guiana*, London: The reprint society (originally published 1956, London: Lutterworth Press)

Attenborough, D., 1959, *Zoo Quest for a Dragon*, London: The companion Book Club (originally published 1957, Lutterwoth Press)

Attenborough, D., 1960, 'Hidemanship', *in* Hawkins, D. (Ed.), 1960, *The second BBC Naturalist*, London: Adprint:24-28

Attenborough, D., 2003, *Life on Air*, London: BBC Book

Attenborough, D., 2006, 'People say it will be all right. It won't', *The Independent*, 24 May 2006:1-2

Bagchi, S., & Mishra, C., 2006, 'Living with large carnivores: predation on livestock by the snow leopard (Uncia uncia)', *Journal of Zoology* Vol.268:217–224

Baker, S., 2001, *Picturing the Beast*, Chicago: University of Illinois Press (first edition 1993)

Banks, M., 2001, *Visual Methods in social Research*, London: Sage Publications

Benjamin, W., 1936, 'The Storyteller', *in* Benjamin, W., 1999, *Illuminations*, London: Pimlico: 83-107

Bennet, T. & al. (Eds.), 1981, *Popular Television and Film*, London: BFI, the Open University Press

Bensaude-Vincent, B. & Drouin, J-M, 1996, 'Nature for the people', *in* Jardine, N. & al. (Eds.), *Cultures of Natural History*, Cambridge: Cambridge University Press:408-425

Bensaude-Vincent, B., 2001, 'A Genealogy of the Increasing Gap Between Science and the Public', *Public Understanding of Science,* Vol.10:99–113

Biagioli, M., 1992, 'Scientific Revolution, Social Bricolage, and Etiquette', *in* Porter and Teich, (Eds.), *The Scientific Revolution in National Context*, Cambridge: Cambridge University Press: 11-54

Biagioli, M., 1993, *Galileo, Courtier: The Practice of Science in the Culture of Absolutism*, Chicago: University of Chicago Press

Black, J., 2002, *The reality effect*, New York, London: Routledge

Blackhall, S., & Sawer, P., 2002, 'Why Saba's a natural queen of the jungle', *The Evening Standard*, January 3, 2002

Bleichmar, D., 2003, 'Viewing as possessing: the visual culture of natural history and the locality of colonial science', Proceedings of the *Visual Knowledges Conference*, The University of Edinburgh, <http://webdb.ucs.ed.ac.uk/malts/other/VKC/dsp-all-papers.cfm >

Bleichmar, D., 2006, 'Painting as exploration: visualising nature', *Colonial Latin American Review*, Vol.15, No.1:81-104

Bloor, D., 1991, *Knowledge and social Imagery*, Chicago, London: The University of Chicago Press (first edition 1976)

Bloor, D., 1999, 'anti-Latour', *Studies in the History and Philosophy of Science*, Vol.30 (1):81-112

Blundell, N., 2001, 'Bush Babies', *The Daily Telegraph*, December 29, 2001:62

Blundell, N., 2002, 'Dramas on our doorstep', *The Daily Telegraph*, November 23, 2002:15

Blundell, N., 2002, 'The woman chosen to succeed David', *The Express*, January 5, 2002

Boon, T., 2008, *Films of Facts*, London, New York: Wallflower press

Bourdieu, P., 1975, 'The specificity of the scientific field and the social conditions of the progress of reason', *Social Science Information*, Vol.14, No.6:19-47

Bourdieu, P., 1991, 'The Peculiar History of Scientific Reason', *Sociological Forum*, Vol. 6, No. 1.: 3-26

Bourdieu, P., 2001, *Science de la science et réflexivité*, Paris: Éditions Raisons d'Agir

Bourne, J. M., 1986, *Patronage and Society in Nineteenth-Century England*, Baltimore, Md.: Edward Arnold

Bousé, D., 2000, *Wildlife Films*, Philadelphia: University of Pennsylvania Press

Bowler, P.,2003, *Evolution, the History of Idea*, Berkeley, Los Angeles, London: University of California Press

Bravo, M., 2005, 'Reinventing Natural History', *Antipode*, Vol.37, No.2: 369-373

Briggs, A., 1985, *The BBC, the first fifty years*, Oxford: Oxford University Press

Briggs, A., 1995, *Competition*: *The history of broadcasting in the United Kingdom, vol. 5*, Oxford: Oxford University Press

Brooks, X., 2003, 'Winged Migration', *The Guardian*, 5 September 2003

Browne, J., 1996, 'Biogeography and Empire', *in* Jardine, N. & al. (Eds.), *Cultures of Natural History*, Cambridge: Cambridge University Press:305-321

Buckley, L., 1973, 'Eastward with Attenborough', *The Times*, Friday 12 October 1973:15

Buller, H., 2004, 'Where the wild things are: the evolving iconography of rural fauna', *Journal of Rural Studies*, Vol.20:131-141

Bunce, M., 1994. *The Countryside Ideal*. London: Routledge

Burkhardt, R.W., 1999, 'Ethology, Natural History, the Life Sciences, and the Problem of Place', *Journal of the History of Biology*, Vol.32:489-508

Burkhardt, R.W., 2005, *Patterns of Behavior: Konrad Lorenz, Niko Tinbergen, and the Founding of Ethology*, Chicago and London: The University of Chicago Press

Burt, J., 2002, *Animals in films*, London: Reaktion Books

Burt, J., 2003, 'Film Review Section', *Society and Animals*, Vol. 11, No.4:419-423

Burt, J., 2006, 'Solly Zuckerman: the making of a primatological career in Britain, 1925–1945', *Studies in History and Philosophy of Biological and Biomedical Sciences,* Vol.37: 295-310

Buscombe, E., 1991, 'All Bark and No Bite', *in* Corner, J., (Ed.), 1991, *Popular Television in Britain*, London: BFI: 197-207

Caesar, E., 2007, 'Bill Oddie - The twitcher', *The Independent*, 9 June 2007:45

Callon, M., 1986, 'Some elements of a sociology of translation: domestication of the scallops and the fishermen of St Brieuc Bay' *in* J. Law, *Power, action and belief: a new sociology of knowledge?* London, Routledge:196-223.

Campbell, D. J., 'Land as Ours, Land as Mine: Economic, Political and Ecological Marginalization in Kajiado District' *in* Spear, T. & Waller, R., (Eds.) 1993, *Being Maasai*, Oxford: James Currey:258-272

Canguilhem, G. 1989, 'La constitution de la physiologie comme science', *in* Canguilhem, G., *Etudes d'Histoire et de Philosophie des Sciences*, Paris: Vrin:226-273

Caras, R., 1995, 'Zoos and the public: a view from the ASPCA', *in* Norton, B. G. & al. (Eds.), 1995, *Ethics on the ark: zoos, animal welfare, and wildlife conservation*, Washington, London: Smithsonian Institution Press:297-299

Carey, D., 1997, 'Compiling nature's history', *Annals of science*, Vol.54, No.3:269-292

Caro, T. M., 1998, *Behavioral Ecology and Conservation Biology*, Oxford, New York: Oxford University Press

Cartmill, M., 1993, *A view to a Death in the Morning*, Cambridge, MS; London: Harvard University Press

Cartwright, L. 1992, '"Experiments of destruction": Cinematic inscriptions of Physiology', *Representations*, special issue "seeing science", No.40:129-152

Chanan, M., 1996, *The dream that kicks*, London, New York: Routledge (2nd Edition)

Cheveigné, S. de and Véron, E., 1996, 'Science on TV: Forms and reception of science programmes on French television', *Public Understanding of Science*, Vol.5:231-253

Christophers, B., 2007, 'Visions of nature, spaces of empire: Framing natural history programming within geometries of power', *Geoforum*, Vol.37:973-985

Clayton, J., 2002, 'Out of Africa, the new queen of nature TV - Interview', *The Sunday Times*, 6 January 2002:7

Clemens, E. S., 1986, 'Of Asteroids and Dinosaurs: The Role of the Press in the Shaping of Scientific Debate', *Social Studies of Science*, Vol.16, No.3: 421-456

Cloître, M. & Shinn, T., 1985, 'Expository Practice', *in* Shinn, T. and Whitley, R. (eds), 1985, *Expository Science: forms and functions of popularisation*, Dordrecht: Reidel:31-60

Cluton-Brock, J., 1994, 'The unnatural world: behavioural aspects of humans and animals in the process of domestication', *in* Manning A. & Serpell, J. (Eds.), 1994, *Animals and Human society*, London, New York: Routledge:23-35

Coleman, W., 1977, *Biology in the Nineteenth Century, Problems of Form, Function, and Transformation*, Cambridge, New York: Cambridge University Press

Collins & Pinch, 1993, *The Golem*, Cambridge University Press

Collins, H. M & Evans, R., 2002, 'The Third Wave of Science Studies: Studies of Expertise and Experience', *Social Studies of Science*, Vol.32, No.2:235-296

Collins, H. M., 1985, *Changing Order: Replication and Induction in Scientific Practice*, London: Sage Publications

Collins, H. M., 1987, 'Certainty and the Public Understanding of Science: Science on Television', *Social Studies of Science*, Vol.17, No.4: 689-713

Constantin, F., 1994, 'Avant-propos : L'homme et la nature : "une gestion à réinventer"?', *Politique Africaine*, No.53:3-10

Constantine, S., 1986, 'Bringing the Empire Alive', *in* MacKenzie, J., M., (Ed.), 1986, *Imperialism and popular culture*, Manchester: Manchester University Press:192-231

Conway, W., 1995, 'Zoo conservation and ethical paradoxes', *in* Norton, B. G. & al. (Eds.), 1995, *Ethics on the ark: zoos, animal welfare, and wildlife conservation*, Washington, London: Smithsonian Institution Press:1-9

Cooter, R. & Pumfrey, S., 1994, 'Separate spheres and public places: Reflections on the history of science popularisation and science in popular culture', *History of Science*, Vol. 32:237-267

Corner, J., 1991a, 'General Introduction', *in* Corner, J., (Ed.), 1991, *Popular Television in Britain*, London: BFI:1-21

Cottle, S., 2004, 'Producing Nature(s): On the Changing Production Ecology of Natural History TV', *Media, Culture and Society*, Vol.26:81-101

Coward, R., 2005, 'Back to nature', *The Guardian*, Monday May 9, 2005

Crary, J., 1988, 'Techniques of the Observer', *October*, Vol.45:3-35

Crary, J., 1990, *Techniques of the Observer. On Vision and Modernity in the Nineteenth Century*, Cambridge, Massachusetts; London: MIT Press (1992)

Cronon, W. (Ed.), 1996, *Uncommon Ground*, New York, London: W. W. Norton & Company

Crosland, M., 2001, 'Popular science and the arts : challenges to cultural authority in France under the Second Empire', *BJHS*,Vol.34:301-322

Crowther, B., 1997, 'Viewing what comes naturally: a feminist approach to television natural history', *Women Studies' International Forum*, Vol.20:289-300

Curtis, R., 1994, 'Narrative Form and Normative Force: Baconian Story-Telling in Popular Science', *Social Studies of Science*, Vol.24, No.3:419-461

Dagognet, F., 1992, *Etienne-Jules Marey – a Passion for the Trace*, New York: Zone Books

Dagognet, F., 2000, *Considérations sur l'idée de Nature*, Paris: Vrin

Daston, L. & Galison, P., 1992, 'The Image of Objectivity', Representations, No.40:81-128

Daston, L. & Galison, P., 2007, *Objectivity*, New York: Zone Books

Daston, L. & Mitman G., 2006, 'Introduction. The how and why of Thinking with Animals', *in* Daston, L. & Mitman G. (eds.), 2006, *Thinking with Animals: New Perspectives on Anthropomorphism,* New York: Columbia University Press:1-14.

Daston, L. & Park, K., 2001, *Wonders and the order of nature – 1150-1750*, New York: Zone Books

Daston, L., 1988, 'The factual sensibility', *Isis*, Vol.79:455

Daston, L., 1995, 'The Moral Economy of Science', *Osiris*, 2nd Series. Vol. 10, Constructing Knowledge in the History of Science:2-24.

Daston, L., 2006, 'Intelligences: Angelic, Animal, Human', *in* Daston, L. & Mitman G. (eds.), 2006, *Thinking with Animals: New Perspectives on Anthropomorphism,* New York: Columbia University Press:37-58

Davies, G., 1998, *Networks of Nature: Stories of Natural History Film-Making from the BBC*, unpublished PhD Dissertation, University College London

Davies, G., 1999, 'Exploiting the archive: and the animals came in two by two, 16mm, CD-ROM and BetaSp', *Area*, Vol.31, No.1:49-58

Davies, G., 2000a, 'Science, Observation and Entertainment: competing visions of postwar British Natural History Television, 1946-1967', *Ecumene*, Vol.7 (4):432-459

Davies, G., 2000b, 'Narrating the Natural History Unit: institutional orderings and spatial strategies', *Geoforum*, Vol.31, p.539-551

Davies, G., 2003, 'Researching the network of natural history television', *in* Blunt, A. & al. (Eds.) *Cultural Geography in Practice*, London: Arnold:202-217

Dawkins R., 1976, *The Selfish Gene*, Oxford: Oxford University Press

Dawson, T., 2003, www.bbc.co.uk/films/2003/08/19/jacques_perrin_winged_migration_interview.shtml

Denis, A., 1966, *On Safari*, London: Fontana Books (first published in 1963)

Desbenoit, L., 1999, 'Le monde à tire-d'aile', *Télérama*, No. 2585:28

Desbenoit, L., 2001, 'Jacques Perrin, producteur et réalisateur du "Peuple migrateur". L'oiseau rare', *Telerama*, No.2709:54

Dettelbach, M., 1996, 'Humboldtian Science' *in* Jardine, N. & al. (Eds.), *Cultures of Natural History*, Cambridge: Cambridge University Press:287-304

Dingwall, R. & Aldridge, M.; 2006, 'Television wildlife programming as a source of popular scientific information: a case study of evolution', *Public Understanding of Science*, Vol.15:131-152

Dunk, 2006, 'My walk on the Wild Side', *The Daily Express*, April 4, 2006

Durant, J. R., Evans, G. A. & Thomas, G. P., 1989, 'The public understanding of science', *Nature* 340:11-14

Durant, J. R., Evans, G. A. & Thomas, G. P., 1992, 'Public understanding of science in Britain: the role of medicine in the popular representation of science', *Public Understanding of Science*, Vol.1:161-182

Ehrenfeld, D., 1991, 'The management of diversity', *in*, Borman, F., & Kellert, S. (Eds.), 1991, *Ecology, Economics, Ethics: The Broken Circle*, New Haven: Yale University Press:26-39

Elam, M., 2005, 'When Scientists meet Film-Makers, Inventing a Swedish Approach to Public Engagement with Biotechnology', *Acta Sociologica*, Vol.48, No.3:237-261

Ellis, J., 1992, *Visible Fictions*, London, New York: Routledge

Fairhead, J., & Leach, M., 1994, 'Représentations culturelles africaines et gestion de l'environnement', *Politique Africaine*, No.53:11-24

Falk, Q., 2003, 'Reviews: Movies: Winged Migration', *The Sunday Mirror*, 7 September 2003

Farber, P., L., 1997, *Discovering Birds*, Baltimore and London: The Johns Hopkins University Press (first published in 1982)

Feit, H., A., 1991, 'The construction of Algonquian hunting territories: Private property as moral lesson, policy advocacy, and ethnographic

error', *in* Stocking, G. (Ed.) *Colonial Situations*, Madison: The University of Wisconsin Press (1991):109-134

Fiaca, 2001, 'Night Vision – Interview', *The Sun – The TV Mag*, October 20, 2001: 27

Findlen, P., 1994, *Possessing Nature*, Berkeley, Los Angeles, London: University of California Press

Findlen, P., 1996, 'Courting Nature', *in* Jardine, N. & al. (Eds.), *Cultures of Natural History*, Cambridge: Cambridge University Press:57-74

Fisher, J., 1959, 'Foreword', *in* Sielmann, H., 1959, *My year with the woodpeckers*, London: Barrie and Rockliff:9-11

Foggo, D., 2008, 'BBC 'set up' Attenborough clash with deadly cobra', *Sunday Times*, 6 January 2008

Foucault, M., 1966, *Les mots et les choses*, Paris: Gallimard

Franklin, A., 1999, *Animals and Modern Cultures*, London, Thousand Oak, New Delhi: Sage Publications

Friedberg, A., 1993, *Window Shopping*, University of California Press

Friedland, R. and Alford, R., 1991, 'Bringing Society Back In', *in* Powell, W.W., & DiMaggio, P., J., (Eds.), 1991, *The new institutionalism in organizational analysis*, London, Chicago: The University of Chicago Press: 232-263

Frodon, J.-M., 2001, 'Vol au-dessus d'un nid de jolis clichés', *Le Monde*, 11 December

Frois, E., 2007, 'Les films animaliers ont le vent en poupe', *Le Figaro*, 11 December 2007, available online at <http://www.lefigaro.fr/cinema/2007/12/11/03002-20071211ARTFIG00580-les-films-animaliers-ont-le-vent-en-poupe-.php> [last accessed 28 July 2009]

Fuller, S., 2007, 'Science Democratised = Expertise Decommissioned', *Spontaneous Generation*, Vol.1, No. 1:25-35

Galaty, J. G., 1993, 'The Eye that wants a Person, Where Can It Not see?: Inclusion, Exclusion, and boundary shifters in Maasai Identity', *in* Spear, T. & Waller, R., (Eds.) 1993, *Being Maasai*, Oxford: James Currey:174-194

Gaycken, O., 2002, ''A drama unites them in a fight to the death': some remarks on the flourishing of a cinema of vernacularisation in France, 1904-1914', *Historical Journal of Film, Radio and Television,* 22:353-374

Geertz, C., 1973, *The Interpretation of cultures*, New York: Basic Books

Geist, V., 1995, 'Noah's ark II: rescuing species and ecosystems', *in* Norton, B. G. & al. (Eds.), 1995, *Ethics on the ark: zoos, animal welfare, and wildlife conservation*, Washington, London: Smithsonian Institution Press: 93-101

Giddens, A., 1991, *Modernity and Self-Identity*, Cambridge: Polity

Gieryn, T. F., 1983, 'Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists', *American Sociological Review*, Vol.48, No.6:781-795

Gieryn, T. F., 1995, 'Boundaries of Science', *in* Jasanoff, S. & al. (Eds.), 1995, *Handbook of science and technology studies*, London, Thousand oaks, New Delhi: Sage Publications:393-443

Goffman, E., 1959, *The presentation of the self in everyday life,* New York: Doubleday/Anchor

Goldman, S. L., 1989, 'Images of Technology in Popular Films: Discussion and Filmography', *Science, Technology, & Human Values*, Vol.14, No.3.:275-301

Golinski, J, 1998, *Making Natural Knowledge*, Cambridge: Cambridge University Press

Goodell, R., 1977, *The visible scientists*, Boston: Little, Brown

Göpfert, W., 1996, 'Scheduled science: TV coverage of science, technology, medicine and social science and programming policies in Britain and Germany', *Public Understanding of Science*, Vol.5:361-374.

Görke, A. & Ruhrmann, G., 2003, 'Public communication between facts and fictions: on the construction of genetic risk', *Public Understanding of Science,* Vol.12:229-241

Gorman, J., 2003, 'Inviting Humans to Sprout Wings and Soar', *The New York Times*, 15 April 2003

Green, J., 1985, 'Media sensationalisation and science', *in* Shinn, T. and Whitley, R. (Eds.), 1985, *Expository Science: forms and functions of popularisation*, Dordrecht: Reidel:139-161

Gregory, J.& Miller, S., 1998, *Science in public*, New York, London: Plenum Trade

Gregory, J., 2003, 'Understanding "science and the public"', *Journal of commercial biotechnology*, Vol.10:131-139

Griffith, A., 2002, *Wondrous Differences*, New York: Columbia University Press

Grove, R. H., 1995, *Green Imperialism*, Cambridge: Cambridge University Press

Grzimek, B., 1960, *Serengeti Shall Not Die*, London: Hamish-Hamilton

Gunning, T., 2004, 'The cinema of Cinema of Attractions. Early Film, Its Spectator, and the Avant-Garde', *in* Knopf, R., (Ed.), 2004, *Theater and film: A comparative Anthology*, Yale University Press:37-45

Habermas, J., 1992 [1962], *The structural transformation of the public sphere*, Cambridge: Polity Press

Hancocks, D., 2001, *A different Nature*, London: University of California Press

Haraway, D., 1988, 'Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective', *Feminist Studies*, Vol. 14, No. 3.: 575-599

Haraway, D., 1989, *Primate Visions*, New York, London: Routledge

Haraway, D., 1997, *Modest_Witness@Second-Millenium.Female Man©_Meets_OncoMouse™: Feminism and Technoscience*, London, New York: Routledge

Haraway, D., 2003, *The Companion Species Manifesto*, Chicago: Prickly Paradigm Press

Haraway, D., 2007, *When Species meet*, Minneapolis, London: University of Minnesota Press

Hatfield, M., 1971, 'Banking on colour television', *The Times*, 5 March 1971:12

Hawkins, D., (Ed.), 1957, *The BBC naturalist*, London: Rathbone Books

Hawkins, D., (Ed.), 1960, *The second BBC Naturalist*, London: Adprint

Heath, S., 1981, 'The Cinematic Apparatus', *in* Heath, S., 1981, *Questions of Cinema*, Bloomington: Indiana University Press:221-235

Hebdige, D., 1988, *Hiding in the Light*, London: Routledge

Hediger, H., 1964, *Wild animals in captivity*, New York: Dover Publications

Hediger, V., 2003, 'On the Horizon of Extinction. Digital Imagery, Temporality and Observation in Recent Wildlife Films', unpublished paper, personal communication

Hell, B., 1996, 'Enraged hunters', *in* Descola, P. and Pálsson, G., (Eds.), *Nature and Society*, London: Routledge: 205-217

Heminway, J., 1983, *No man's land. The last of white Africa*, New York: E. P. Dutton

Hendee, J. C., & al., 1990, *Wilderness Management*, North American Press

Hevly, B., 1996, 'The Heroic Science of Glacier Motion', *Osiris*, 2nd Series, Vol. 11, Science in the Field: 66-86.

Hilgartner, S., 1990, 'The Dominant View of Popularisation: Conceptual Problems, Political Uses', *Social Studies of Science*, Vol.20, No.3:519-539

Hoage, R.J & al., 1996, 'Menageries and Zoos to 1900', in Hoage, R.J. & Deiss, W.A., (Eds.) 1996, *New Worlds, New Animals*, Baltimore and London: Johns Hopkins University Press:8-18

Hoage, R.J. & Deiss, W.A., (Eds.) 1996, *New Worlds, New Animals*, Baltimore and London: Johns Hopkins University Press

Hobson, D., 2003, *Soap Opera*, Cambridge: Polity

Hoggart, P., 2008, 'David Attenborough's ten rules for would-be presenters', *The Times*, 2 February 2008, available online at <http://entertainment.timesonline.co.uk/tol/arts_and_entertainment/ >

Hollerbach, A.L., 1996, 'Of Sangfroid and Sphinx Moths: Cruelty, Public Relations, and the Growth of Entomology in England, 1800-1840', *in* Kuklick and Kohler, 1996, (Eds.), *Science in the Field*, *Osiris*, 2nd Series, Vol.11:201-220

Howard, L., 1953, *Birds as individuals*, London: Readers Union – Collins

Hughes, T. P., 1983, *Networks of power: Electrification in Western society, 1880-1930*, Baltimore: John Hopkins University Press

Hughes, T. P., 1987, 'the evolution of large technological systems' *in* Bijker, W.E, Hughes, T.P., & Pinch, T., (Eds.), 1987, The social construction of technological systems, MIT press:51-82

Ingold, T., 1994, 'From trust to domination: an alternative history of human-animal relations', *in* Manning A. & Serpell, J. (Eds.), 1994, *Animals and Human society*, London, New York: Routledge:1-22

Irwin, A. & Wynne, B. (Eds.), 1996, *Misunderstanding Science? The public reconstruction of science and technology*, Cambridge: Cambridge University Press

Irwin, A., Dale, A., Smith, D., 1996, 'Science and Hell's kitchen: the local understanding of hazard issues', *in* Irwin, A. & Wynne, B. (Eds.), 1996, *Misunderstanding Science? The public reconstruction of science and technology*, Cambridge: Cambridge University Press:47-64

Jackman, B., & Scott, J., 1982, *The Marsh Lions*, London: Elm Tree Books

Jackman, B., & Scott, J., 1996, *The Big Cat Diary*, London: BBC Books

Jackman, B., 2001, Travel Mail: I'm Eyeball To Eyeball With The Lion Kings, *The Daily Mail*, December, 1, 2001:54

Jackson, S. & Rees, A., 2007, 'The Appalling Appeal of Nature: The Popular Influence of Evolutionary Psychology as a Problem for Sociology', *Sociology*, Vol. 41, No.5: 917-930

Jaggar, A. M., 1989, 'Love and Knowledge: Emotion in Feminist Epistemology', *in* Jaggar and Bordo (Eds.), 1989, *Gender/Body/Knowledge/Feminist reconstruction of being and knowing*, New Brunswick, London: Rutger University Press:145-171

Jamieson, D., 1995, 'Zoos revisited', *in* Norton, B. G. & al. (Eds.), 1995, *Ethics on the ark: zoos, animal welfare, and wildlife conservation*, Washington, London: Smithsonian Institution Press:52-66

Jardine, N. & al. (Eds.), 1996, *Cultures of Natural History*, Cambridge: Cambridge University Press

Jardine, N., & Spary, E., 1996, 'The natures of cultural history', *in* Jardine, N. & al. (Eds.), 1996, *Cultures of Natural History*, Cambridge: Cambridge University Press:3-13

Jasanoff, S. & al. (Eds.), 1995, *Handbook of science and technology studies*, London, Thousand oaks, New Delhi: Sage Publications

Jasanoff, S., 2003, 'Breaking the Waves in Science Studies', *Social Studies of Science*, Vol.33, No.3: 389-400

Jasanoff, S., 2005, *Designs on Nature*, Princeton, NJ: Princeton University Press

Jeffries, M., 2003, 'BBC natural history versus science paradigms', *Science as Culture,* Vol.12, No.4:527-545

Jing, X, 'Closer to Nature', *Beijing Review*, 7 January 2008, available online at < http://www.china.org.cn/english/culture/238391.htm> [last accessed 28 July 2009]

Johns, A., 1996, 'Natural History as print culture', *in* Jardine, N. & al. (Eds.), 1996, *Cultures of Natural History*, Cambridge: Cambridge University Press:106-124

Jones, R. A., 1997, 'The Boffin: a stereotype of scientists in post-war British films (1945–1970)', *Public Understanding of Science,* Vol.6 :31-48

Jones, R. A., 1998, 'The scientist as artist: A study of The Man in the White Suit and some related British film comedies of the post-war period (1945-1970)', *Public Understanding of Science*, Vol.7: 135-147

Jones, R. A., 2001, '"Why can't you scientists leave things alone?" Science questioned in British films of the post-war period (1945-1970)', *Public Understanding of Science*, Vol.10: 365-382

Jörg, D., 2003, 'The Good, the Bad and the Ugly—Dr. Moreau Goes to Hollywood', *Public Understanding of Science*, Vol.12: 297-305

Kaufmann, T. D., 2002, 'Questions of representation', *in* Smith: H. & Findlen, P., (Eds.), 2002, *Merchants & Marvels*, New York, London: Routledge: 412-422

Keal, G., 2001, 'King and Country', *The Daily Mirror,* October 13, 2001.

Keal, G., 2002, 'Getting Chummy with the chimps', *The Daily Mirror*. January 5, 2002

Kearton, C., 1923, *Photographing Wildlife Across the World*, London, J. W. Arrowsmith.

Kearton, C., 1928, *My Animal Friendships*, London: Longmans

Kearton, C., 1929a, 'Big Game hunting. Sport with the camera', *in* 'Film Number', *The Times,* supplement to Issue No: 45 155, 19th March 1929:x

Kearton, C., 1929b, *In the land of the Lion*, London: J.W. Arrowsmith

Kearton, C., 1932, *The Animals came to drink,* London: Longmans

Kearton, C., 1936, *Adventures with Animals and Men*, London: Longmans

Kearton, C., 1943, *In the land of the lion*, Bristol: Arrowsmith (first edition 1929)

Kearton, R., 1901, *Wild life at home, how to study and photograph it*, London: Cassel (first published 1898)

Kearton, R., 1908, *British Birds' Nests*, London: Cassel (first published 1895)

Kearton, R., 1911, *With Nature and a Camera*, London: Cassel (first published 1897)

Keller, E. F., 1985, *Reflections on gender and science*, New Haven, CT: Yale University Press

Keller, E. F., 1995, 'The origin, history, and politics of the subject called "Gender and Science"', in Jasanoff, S. (ed.), 1995, *Handbook of science and technology studies*, London: SAGE Publications:80-94

Kellert, S., & Wilson, E.O., (Eds.), *The Biophilia Hypothesis*, Washington: Island Press

Kermode, M., 2003, 'Winged Migration', *The Observer*, 7 September 2003

Kilborn, R., 2006, 'A walk on the wild side; the changing face of TV wildlife documentary', *Jump Cut,* No.48

Kirby, D. A., 2003a, 'Science Advisors, Representation, and Hollywood Films', *Molecular Interventions*, Vol.3: 54-60

Kirby, D. A., 2003b, 'Science Consultants, Fictional Films, and Scientific Practice', *Social Studies of Science*, Vol.33: 231-268

Kirby, D. A., 2003c, 'Scientists on the Set: science consultant and the communication of science in visual fiction', *Public Understanding of Science*, Vol.12: 261-278

Kline, R. R., 1997, 'Ideology and the New Deal 'fact film' Power and the Land', *Public Understanding of Science* Vol.6: 19-30

Kohler, R., 2002, *Landscapes & Labscapes*, Chicago, London: University of Chicago Press

Kohler, R., 2006, *All Creatures*, Princeton: Princeton University Press

Kohlstedt, S.K, 1996, 'Reflections on Zoo History, *in* Hoage, R.J. & Deiss, W.A., (Eds.) 1996, *New Worlds, New Animals*, Baltimore and London: Johns Hopkins University Press: 3-7

Kruuk, H., 2002, *Hunter and Hunted: relationship between carnivores and people*, Cambridge: Cambridge University Press

Kruuk, H., 2003, *Niko's Nature*, Oxford: Oxford University Press

Kuhn, T., 1962, *The Structure of the Scientific Revolutions*, Chicago: University of Chicago Press

Kuklick, H.& Kohler, R., 1996, 'Introduction', *Science in the Field*, *Osiris*, 2nd Series, Vol.11: 1-14

Kuklick, H., 1991, 'Contested monuments: The politics of archeology in Southern Africa', *in* Stocking, G. (Ed.) *Colonial Situations*, Madison: The University of Wisconsin Press (1991): 135-169

Laissus, Y., 1981, 'Les Voyageurs naturalistes du Jardin du roi et du Museum d'histoire naturelle…', *Revue d'Histoire des Sciences*, Vol. 34: 259-317

Lambert, H. & Rose, H., 1996, 'Disembodied knowledge? Making sense of medical science', *in* Irwin, A., Wynne, B. (Eds.), 1996, *Misunderstanding Science? The public reconstruction of science and technology*, Cambridge: Cambridge University Press: 191-212

Lamprey, R., & Reid, R., 2004, 'Expansion of human settlement in Kenya's Maasai Mara: what future for pastoralism and wildlife?' *Journal of Biogeography* Vol.31: 997–1032

Landecker, H., 2006, 'Microcinematography and the History of Science and Film', *Isis*, Vol. 97, No.1: 121-132

Latour, B., 1987, *Science in Action*, Cambridge, Massachusetts: Harvard University Press

Latour, B., 1993, *We have never been modern*, Cambridge, MS, London: Harvard University Press

Latour, B., 1999, *Pandora's Hope. Essays on the Reality of Science Studies*, Cambridge, MS, London: Harvard University Press

Latour, B., 2004, *Politics of Nature*, Cambridge, MS, London: Harvard University Press

Latour, B. and Woolgar, S., 1979/1986, *Laboratory Life: The construction of scientific facts*, Princeton: Princeton University Press

Leakey, R., 2002, *Wildlife Wars*, London: Pan Books (first edition 2001)

Lévy-Leblond, J.-M., 1992, 'About misunderstanding about misunderstanding', *Public Understanding of Science* Vol.1: 17-21

Lewenstein, B. V., 1992, 'Cold Fusion and Hot History', *Osiris*, 2nd Series, Vol.7, Science after '40: 135-163

Lewenstein, B. V., 1992, 'The meaning of 'public understanding of science' in the United States after World War II', *Public Understanding of Science*, Vol.1: 45-68

Lewenstein, B. V., 1995, 'Science and the Media', *in* Jasanoff, S. & al.(Eds.), 1995, *Handbook of science and technology studies*, London: SAGE Publications: 343-360

Lewenstein, B. V., 2001, 'Expertise in the Media', *Social Studies of Science,* Vol.31, No.3: 441-444

Lichfield, J., 2001, 'French cinematic master returns with celebration of birds in flight', *The Independent*, 10 December 2001

Lightman, B., 2000, 'The Visual Theology of Victorian Popularisers of Science: From Reverent Eye to Chemical Retina', *Isis*, Vol.91, No.4: 651-680

Lightman, B., 2007, *Victorian Popularizers of science*, Chicago: University of Chicago Press

Long, P., O., 2002, 'Objects of Art/Objects of Nature', *in* Smith: H. & Findlen, P., (Eds.), 2002, *Merchants & Marvels*, New York, London: Routledge: 63-82

Lorenz, K., 1979, *The year of the greylag goose*, London: Eyre Methuen

Lutts, R.H., 1990, *The Nature Fakers*, Charlottesville, London: University Press of Virginia

Lynch, M. & Cole, S., 2005, 'Science and Technology Studies on Trial: Dilemmas of Expertise', *Social Studies of Science*, Vol.35, No.2: 269-311

Lynge, A., 2007, 'Global Warming is not just a theory to us', *The Independent*, May 30, 2007: 2

MacKenzie D., & Wacjman, J., 1985, 'Introduction', *in* MacKenzie D., & Wacjman, J. (Eds.), 1985, *The social shaping of technology*, Open University Press: 1-25

MacKenzie, J. M., 1988, *The Empire of Nature*, Manchester: Manchester University Press

MacLeod, R. (Ed.), 2000, *Nature and Empire. Science and the Colonial Enterprise*, *Osiris*, 2nd series, Vol.15

Malamud, R., 1998, *Reading Zoos*, London: MacMillan Press

Mannoni, L., 2000, *The Great Art of Light and Shadow. Archaeology of the cinema*, (Crangle, R. Trans. & Ed.), Exeter: University of Exeter Press

Mannoni, L., 2004, 'The Art of Deception', *in*, Mannoni, Nekes, Warner (Eds.), *Eyes, Lies and Illusions*', London: Hayward Gallery

Maple, T., & al., 1995, 'Defining the Good Zoo: Animal Care, Maintenance, and Welfare', *in* Norton, B. G. & al. (Eds.), 1995, *Ethics on the ark: zoos, animal welfare, and wildlife conservation*, Washington, London: Smithsonian Institution Press: 219-234

Marks, K., 2007, 'Aborigines mark the day they became 'humans'', *The Independent*, 26 May 2007: 40

Matless, D., & al., 2005, 'Animal landscapes: otters and wildfowl in England 1945-1970', *Transactions of the institute of British Geographers*, Vol.30, No.2: 191-205

Matthew, C., 2004, 'I'm wild about this soap', *Daily Mail*, January 6, 2004

Matthews, L.H., 1955, 'Successful collaboration of Zoo and Television', *The Times*, 4 January 1955: 7

Mayr, E., 1980, 'Some thoughts on the history of the evolutionary synthesis', *in* Provine, W. & Mayr, E. (Eds.), *The evolutionary synthesis*, Cambridge, MA: Harvard University Press

McArthur, C., 1981, 'Setting the Scene: *Radio Times* and *TV Times*' *in* Bennet, T. & al. (Eds.), 1981, *Popular Television and Film*, London: BFI, the Open University Press:144-149 [originaly published in Buscombe, E. (Ed.), 1975, *Football and Television*, London: BFI]

McCarthy, M., 2006: 'How maestro naturalist finally went into battle'. *The Independent,* 24 May 2006: 2

McCook, S., 1996, '"It May Be Truth, but It Is Not Evidence": Paul du Chaillu and the Legitimation of Evidence in the Field Sciences', *Science in the Field, Osiris*, 2nd Series, Vol. 11: 177-197

McKechnie, R., 1996, 'Insiders and outsiders: identifying experts on home ground' *in* Irwin, A., Wynne, B. (Eds.), 1996, *Misunderstanding Science? The public reconstruction of science and technology*, Cambridge: Cambridge University Press: 191-212

Meadow, M. A., 2002, 'Merchants and Marvels', *in*, Smith, P. H., and FindlenP. *Merchants and Marvels*, New York, London: Routledge: 182-200

Medina-Doménech, R., and Menéndez-Navarro, A., 2005, 'Cinematic Representations of medical technologies in the Spanish official newsreel, 1943-1970', *Public Understanding of Science*, Vol.14: 393-408

Merton, R. K, 1937, 'The sociology of knowledge, *Isis*, Vol.27: 493-503

Merton, R. K., 1942/1973, 'The normative structure of science'. *in* Merton, R. K., 1973, *The Sociology of Science: Theoretical and empirical Investigations*, Chicago: University of Chicago Press: 267-278.

Miall, L., 1994, *Inside the BBC*, London: Weidenfeld & Nicolson

Miller, J. D., 1993, 'Theory and measurement in the public understanding of science: A rejoinder to Bauer and Schoon', *Public Understanding of Science*, Vol.2: 235-243.

Miller, J. D., 2004, 'Public understanding of, and attitudes toward, Scientific Research: what we know and what we need to know', *Public Understanding of Science*, Vol.13, No.3: 273-294

Mitchell, S. D., 2006, 'Anthropomorphism and Cross-species Modeling', *in* Daston, L. & Mitman, G. (Eds.), 2006, *Thinking with animals*. New York: Columbia University Press: 100-117

Mitchell, W. R., 2001, *Watch the Birdie*, Settle (North Yorkshire): Castleberg

Mitchell, W.R., 2007, 'A pioneer and an inspiration', *Yorkshire post*, 23 February 2007, available online at <http://www.yorkshirepost.co.uk/features/A-pioneer-and-an-inspiration.2074071.jp> [last accessed 8 July 2009]

Miththapala, S., et al., 1989, 'identification of individual leopards (*Panthera pardus kotyia*) using spot pattern variations', *Journal of Zoology*, 218: 527-536

Mitman, G., 1993, 'Cinematic Nature: Hollywood technology, Popular Culture, and the American Museum of Natural History', *Isis*, Vol.84. No.4: 637-661

Mitman, G., 1996, 'When Nature is the Zoo', *in* Kuklick, H.& R. Kohler, (Eds.), 1996, *Science in the Field*, *Osiris*, 2nd Series, Vol.11: 117-143

Mitman, G., 1999, *Reel Nature*, Cambridge, Massachussetts: Harvard University Press

Mitman, G., 2000, 'Life in the Field: The sensuous body as popular naturalist's guide', *in* Strum & Fedigan (Eds.), 2000, *Primate encounters*, Chicago, London: The University of Chicago Press: 421-435

Mitman, G., 2006, 'Pachyderm Personalities: the Media of Science. Politics, and Conservation', *in* Daston, L. & Mitman, G. (Eds.), 2006, *Thinking with animals*, New York: Columbia University Press:175-195

Mitman, G., 2007, 'The hope and promise of birds', *Environmental History*, Vol. 12, No.2: 343-345, accessed online at <www.historycooperative.org/journals/eh/12.2/marson.html#mitman>

Moledina, J., 2003, 'Flying without passport, an interview with Jacques Perrin', The Cinematic Verses, May 22, 2003, accessed online at <www.thecinematicverses.com/editorials/jacquesperrin-1.html>

Monaco, J., 2000, *How to read a film*, New York, Oxford: Oxford University Press

Morris, D., 1979, *Animals Days*, London: Jonathan Cape

Morus, I. R., 1996, 'Manufacturing Nature: Science, Technology and Victorian Consumer Culture', *The British Journal for the History of Science*, Vol. 29, No.4.:403-434.

Morus, I. R., 1998, *Frankenstein's Children: Electricity, Exhibition, and Experiment in Early Nineteenth-Century London*, Princeton: Princeton University Press

Morus, I. R., 2004, *Michael Faraday and the Electrical Century*, Cambridge: Icon Books

Morus, I. R., 2006, 'Seeing and Believing Science', *Isis*, Vol. 97, No.1:101-110

Mouland, 2004, 'Cheek to Cheetah', *The Daily Mail*, October 1, 2004

Mullan, B. & Marvin G., 1999, *Zoo Culture*, Chicago: University of Illinois Press (first edition, 1987)

Myers, G., 1990, 'Every Picture tells a story: illustrations in EO Wilson's *Sociobiology' in* Lynch, M. & Woolgar, S. (Eds.), 1990, *Representations in scientific practices*, Cambridge, Ms, London: The MIT Press:231-265

Nadis, F., 2005, *Wonder shows: performing science, magic, and religion in America*, New Brunswick, New Jersey, London: Rutgers University Press

Neidhardt, F., 1993, 'The public as a communication system', *Public Understanding of science*, Vol.2:339-350

Nelkin, D., 1995, *Selling Science*, New York: Freeman

Nicholson-Lord, 2006, *Planet Earth, the making of an epic series*, London: BBC Books

Nightingale, N., 2006, 'Exciting times for natural history programmes', *Wildfilm News*, March 2006, <http://www.wildfilmnews.org/>

Noordegraaf, J., 2003, 'The Emergence of the Museum in the 'Spectacular' Nineteenth Century' Proceedings of the *Visual Knowledges*

Conference, The University of Edinburgh, <http://webdb.ucs.ed.ac.uk/malts/other/VKC/dsp-all-papers.cfm >

Norton, B. G. & al. (Eds.), 1995, *Ethics on the ark: zoos, animal welfare, and wildlife conservation*, Washington, London: Smithsonian Institution Press

Nyhart, L.K., 1996, 'Natural History and the "new" biology', *in* Jardine, N. & al. (Eds.), *Cultures of Natural History*, Cambridge: Cambridge University Press:426-443

Oldham, J., 2002, 'My life among the chimpanzees, by Scottish family's latest wildlife expert', *The Scotsman*, January 4, 2002:5

Oreskes, N., 1996, 'Objectivity or Heroism? On the Invisibility of Women in Science', *Science in the Field*, *Osiris*, 2nd Series, Vol. 11: 87-113

Örnebring, H., 2007, 'Writing the history of television audiences. The Coronation in the Mass-Observation Archive', *in* Wheatley, H., (Ed.), 2007, *Re-viewing television history*, London, New York: I. B. Tauris:170-183

Osborne, M.A., 1996, 'Zoos in the Family: The Geoffroy Saint-Hilaire Clan and the Three Zoos of Paris', in Hoage, R.J. & Deiss, W.A., (Eds.) 1996, *New Worlds, New Animals*, Baltimore and London: Johns Hopkins University Press:33-42

Osborne, M.A., 2005, 'Science and the French Empire', *Isis*, Vol. 96, No.1: 80-87

Outram, D., 1996, 'New spaces in natural history', *in* Jardine, N. & al. (Eds.), *Cultures of Natural History*, Cambridge: Cambridge University Press: 249-265

Packer, C., & Pusey, A. E., 1983, 'Adaptations of female lions to infanticide by incoming males', *The American Naturalist,* Vol.121, No.5: 716-728

Parsons, C., 1971, *Making Wildlife Movies, an introduction*, Newton Abbot: David & Charles Ltd

Parsons, C., 1982, *True to Nature*, Cambridge: Patrick Stephens Ltd.

Peek, L., 2002, ''Wild child' to succeed Attenborough', *The Times*, January 4, 2002, Section: Home news, page 7

Péron, X., 1994, 'Flamands roses, éléphants blancs et idées noires : conservation en pays maasaï, *Politique Africaine*, No.53: 37-51

Perrin, J., & al., 2003, *Winged Migration*, San Francisco: Chronicle Books; Paris: Editions du Seuil

Pfaffenberger, B., 1992, 'Technological dramas', *Science, Technology, & Human Values*, Vol. 17, No. 3: 282-312.

Phillips, M., 2002, 'Bush babe - Interview', *The Sun*, January 4, 2002, Section: Features, Page: 32.

PHS, 1967, 'The Times Diary', *The Times*, 7 December 1967: 8

PHS, 1968a, 'The Times Diary', *The Times,* 2 November 1968: 8

PHS, 1968b, 'The Times Diary', *The Times*, 9 December, 1968: 8

Pinch, T., & Bijker, W.E., 1984, 'The Social Construction of Facts and Artefacts' *in* Bijker, W.E, Hughes, T.P., & Pinch, T., (Eds.), 1987. The social construction of technological systems, MIT press: 17-50

Popper, K. R., 2002, *The Logic of Scientific Discovery*, London: Routlegde

Porter, R., 1978, 'Gentlemen and Geology: The Emergence of a Scientific Career, 1660-1920', *Historical Journal*, Vol. 21, No. 4: 809-836

Porter, R., 1985, 'Man, Animals, and Nature', *The Historical Journal*, Vol.28, No.1: 225-229

Pound, R., 1956a, 'Critic on the Hearth', *The Listener*, 11th October 1956:586-587

Pound, R., 1956b, 'Critic on the Hearth', *The Listener*, 1st November 1956:724

Pratt, 2007, 'King of the Jungle', *The Northern Echo*, April 4, 2007:27

Raffles, H., 2002, 'Intimate knowledge', *International Social Science Journal*, Vol. 54, No.173:325-335

Raynor, H., 1967, 'Black and white world takes on a natural look', *The Times*, Colour Television Supplement, 16 November 1967:1

Rees, A., 2001, 'Anthropomorphism, Anthropocentrism, and anecdote: Primatologists on Primatology', *Science, Technology, and Human Values*, Vol.26, No.2:227-247

Rees, A., 2006a, 'A Place that Answers Questions: Primatological Field Sites and the Making of Authoritative Observations', *Studies in History and Philosophy of Biological and Biomedical Sciences,* Vol.37:311-333

Rees, A., 2006b, 'Ecology, Biology and Social Life: Explaining the origins of Primate Sociality', *History of science*, Vol.44:409-434

Rees, A., 2007a, 'If they're so smart, why can't they talk? Science and the study of primate minds in the home, the laboratory and the field, *Bulletin d'histoire et d'épistémologie des sciences de la vie*, Vol.14, No. 2:163-184

Rees, A., 2007b, 'Reflections on the Field: Primatology, Popular science, and the Politics of Personhood', *Social Studies of Science*, Vol. 37, No.6:881-907

Regal, B., 2008, 'Amateur versus professional: the search for Bigfoot', *Endeavour*, Vol.32, No.2:53-57

Reichenbach, H., 1996, 'The Tale of two Zoos: The Hamburg Zoological Garden and Carl Hagenbeck's Tierpark', in Hoage, R.J. & Deiss, W.A., (Eds.) 1996, *New Worlds, New Animals*, Baltimore and London: Johns Hopkins University Press:51-62

Restivo, S., 1995, 'The theory Landscape in Science Studies: sociological Traditions' *in* Jasanoff, S. & al. (Eds.), 1995, *Handbook of science and technology studies*, London, Thousand oaks, New Delhi: Sage Publications p.95-110

Richards, J., 1986, 'Boy's own Empire. Feature films and Imperialism in the 1930s', *in* MacKenzie, J.M., (Ed.), 1986, *Imperialism and Popular Culture*, Manchester: Manchester University Press

Richez, G., 1992, *Parcs Nationaux et Tourisme en Europe*, Paris: L'Harmattan

Ritvo, H., 1987, *The Animal Estate*, Cambridge, Massachusetts: Harvard University Press

Ritvo, H., 1996, 'The Order of Nature: Constructing the collections of the Victorian Zoos', *in* Hoage, R.J. & Deiss, W.A., (Eds.) 1996, *New Worlds, New Animals*, Baltimore and London: Johns Hopkins University Press:43-50

Roosevelt, T., 1998 [1897], 'The American Wilderness', *in* Callicott, J. B., and Nelson, M. P., (Eds.), 1998, *The Great wilderness Debate*, Athens, GA, London: The University of Georgia Press

Rose, C., 2003, 'How to teach biology using the movie science of cloning people, resurrecting the dead, and combining flies and humans', *Public Understanding of Science*, Vol.12: 289-296

Rose, G., 2007, *Visual Methodologies*, London: Sage publications

Rosenstone, R. A., 2003, 'Comments on Science in the Visual Media', *Public Understanding of Science*, Vol.12: 335-339

Rudwick, Martin J. S., 1976, 'The Emergence of a Visual Language for Geological Science 1760-1840', History of Science, Vol.14: 149-195

Schaffer, S., 1992, 'Self Evidence', *Critical Inquiry,* Vol. 18, No. 2: 327-362

Schaffer, S., 1994, 'Machine Philosophy: Demonstration Devices in Georgian Mechanics', *Osiris*, 2nd Series, Vol. 9, Instruments: 157-182

Schaffer, S., 1995, 'The Show That Never Ends: Perpetual Motion in the Early Eighteenth Century', *The British Journal for the History of Science*, Vol. 28, No. 2: 157- 189

Schaffer, S., 1997, 'Experimenters' Techniques, Dyers' Hands, and the Electric Planetarium', *Isis*, Vol. 88, No. 3: 456-483

Schaffer, S., 2006, 'Une science de l'éclat. Les bulles de savon et l'art de faire de la physique à l'époque Victorienne', *Terrain*, No. 46, Effets Spéciaux et Artifices: 15-32

Schechner, R., 1985, *Between theater and anthropology*, Philadelphia: University of Pennsylvania Press

Schechner, R., 2003, *Performance Theory*, New York: Routledge

Scott, J., & Scott, A., 1999, *Big Cat Diary – Lions*, London: Collins

Scott, J., & Scott, A., 2003, *Big Cat Diary – Leopard*, London: Collins

Scott, J., & Scott, A., 2005, *Big Cat Diary – Cheetah*, London: Collins

Scott, J., 2000, 'The beautiful game', *The Daily Telegraph*, November 11, 2000

Scott, K. D., & White, A. M., 2003, 'Unnatural History? Deconstructing the Walking with Dinosaurs Phenomenon', *Media, Culture and Society*, Vol.25:315-332

Scott, P., 1966, *The Eye of the Wind*, London: Hodder and Stoughton

Secord, A., 1994a, 'Corresponding Interests: Artisans and Gentlemen in Nineteenth-Century Natural History', *The British Journal for the History of Science*, Vol. 27, No. 4: 383- 408

Secord, A., 1994b, 'Science in the Pub: Artisan Botanists in Early Nineteenth-century Lancashire', *History of Science*, Vol.32: 269-315

Secord, A., 2002, 'Botany on a Plate: Pleasure and the Power of Pictures in Promoting Early Nineteenth-Century Scientific Knowledge', *Isis*, Vol. 93: 28-57

Secord, J. A., 1996, 'The crisis of nature', *in* Jardine, N. & al. (eds.), *Cultures of Natural History*, Cambridge: Cambridge University Press: 447-459

Secord, J. A., 2000, *Victorian Sensation*, Chicago: University of Chicago Press

Secord, J. A., 2004 'Knowledge in Transit', *Isis*, Vol. 95: 654-672

Serpell, J. & Paul, E., 1994, 'Pets and the development of positive attitudes to animals', *in* Manning A. & Serpell, J. (Eds.), 1994, *Animals and Human society*, London, New York: Routledge: 127-144

Serpell, J., 2006, 'People in Disguise', *in* Daston, L. & Mitman, G. (Eds.), 2006, *Thinking with animals*, New York: Columbia University Press: 121-136

Shackleton, K., 1989, 'Great gifts and testing inheritance', *The Guardian*, 31 August 1989: 39

Shapin, S., 1988, 'The House of Experiment in Seventeenth-Century England', *Isis*, Vol. 79, No.3: 373-404

Shapin, S., 1994, *A Social History of Truth*, Chicago, London: The University of Chicago Press

Shapin, S., 1995, 'Here and Everywhere: Sociology of Scientific Knowledge', *Annual Review of Sociology*, Vol.21: 289-321

Shapin, S., and Barnes, B., 1976, 'Head and Hand: Rhetorical Resources in British Pedagogical Writing, 1770-1850', *Oxford Review of Education*, Vol. 2, No. 3, History and Education. Part One: 231-254

Shapin, S., and Schaffer, S., 1985, *Leviathan and the Air-Pump*, Princeton University Press

Shinn, T. & Whitley, R. (Eds.), 1985, *Expository Science: forms and functions of popularisation*, Dordrecht: Reidel

Siegel, S., 2006, 'Reflections on Anthropomorphism in *The Disenchanted Forest*', *in* Daston, L. & Mitman G. (Eds.), 2006, *Thinking with Animals: New Perspectives on Anthropomorphism,* New York: Columbia University Press:196-222

Sielmann, H., 1959, *My year with the woodpeckers*, London: Barrie and Rockliff

Silverstone, R., 1985, *Framing Science: the making of a BBC documentary*, London: BFI

Smart, K., 1982, 'Ambush At Masai Mara', *in* BBC, 1982, *Wildlife Through the Camera*, London: BBC books

Smith, A., 1986, 'Licences and liberty: public service broadcasting in Britain', *in*, McCabe, C., Stewart, O., (Eds.), 1986, *The BBC and Public Service Broadcasting*, Manchester: Manchester University Press: 1-21

Smith, B. H., 2005, *Scandalous Knowledge*, Durham, NC: Duke University Press

Smith, P. H. & Findlen, P., (Eds.), 2002, *Merchants & Marvels*, New York, London: Routledge

Smith, P. H. & Findlen, P., 2002, 'Commerce and the representation of Nature in Art and Science', *in* Smith: H. & Findlen, P., (Eds.), 2002, *Merchants & Marvels*, New York, London: Routledge:1-25

Smith, P. H., 2006, 'Art, Science, and Visual Culture in Early Modern Europe', *Isis*, Vol.97, No.1: 83-100

Spear, T. & Waller, R., (Eds.) 1993, *Being Maasai*, Oxford: James Currey

Star, S. L., & Griesemer, J. R., 1989, 'Institutional Ecology, 'Translations', and Boundary Objects', *Social Studies of Science*, Vol.19, No.3: 387-420

Star, S. L., 1992, 'Craft vs. Commodity, Mess vs. Transcendence: How the right Tool became the Wrong One in the Case of Taxidermy and Natural History', *in* Clarke, A. E. & Fujimura, J. H., (Eds.), 1992. *The Right tools for the job: at work in twentieth-century life sciences*, Princeton, NJ; Oxford: Princeton University Press:257-286

Staudenmeier, J. M., 1989, 'The politics of successful technologies', *in* Cutliffe, S. H. & al. (Eds.), 1989, *In Context: History and the History of technology*, Bethlehem, PA: Lehigh University Press:150-171

Stocking, G. W., (Ed.), 1991, *Colonial Situations*, Madison: The University of Wisconsin Press

Stocking, G.W., 1991a, 'Maclay, Kubary, Malinowski', *in* Stocking, G. (Ed.) *Colonial Situations*, Madison: The University of Wisconsin Press (1991): 9-74

Strauss, F., 2001, 'Le Peuple migrateur', *Telerama*, No.2709:64

Tapper, J., 2006, 'The nation's favourite Attenborough moment'. *Mail on Sunday*, 7 May 2006, available online at www.dailymail.co.uk/tvshowbiz/article-385372/The-nation-favourite-Attenborough-moment.html (accessed on 12 July 2008)

Taub, L., 2006, 'Preserving nature? Ecology, tourism and other themes in the national parks', *Studies in History and Philosophy of Biological & Biomedical Sciences*, Vol. 37:602-611

Tichelar, M., 2006, ''Putting Animals into Politics': The Labour Party and Hunting in the First Half of the Twentieth Century', *Rural History*, Vol.17, No.2:213-234

Tinbergen, N., 1985, 'Watching and wondering', *in* Dewsbury, D. A., 1985, *Leaders in the study of animal behaviour – Autobiographical perspectives*, London, Toronto: Associated University Press:431-463

Tomas, D., 1991, 'Tools of the Trade', *in* Stocking, G. (Ed.) *Colonial Situations*, Madison: The University of Wisconsin Press (1991): 75-108

Toumey, C. P., 1992, 'The Moral Character of Mad Scientists: A Cultural Critique of Science', *Science, Technology, & Human Values*, Vol.17, No.4: 411-437

Tudor, A., 1974, *Image and Influence*, London: George Allen & Unwin Ltd.

Tudor, A., 1981, 'The Panels' *in* Bennet, T. & al. (Eds.), 1981, *Popular Television and Film*, London: BFI, the Open University Press: 150-158 [originaly published in Buscombe, E. (Ed.), 1975, *Football and Television*, London: BFI]

Tudor, A., 1989, *Monsters and Mad Scientists: a cultural history of the horror movie*, London: Basil Blackwell

Turner, S., 2001, 'What is the Problem with Experts?, *Social Studies of Science* Vol.31, No.1:123-149

Turner, T., 1991, 'Representing, Resisting, Rethinking', *in* Stocking, G. (Ed.) *Colonial Situations*, Madison: The University of Wisconsin Press (1991): 285-313

Turner, T., 1992, 'Defiant Images: The Kayapo Appropriation of Video', *Anthropology Today*, Vol. 8, No. 6: 5-16

Urry, J., 1999, 'Automobility, Car Culture and Weightless Travel: A discussion paper', published by the Department of Sociology, Lancaster University, Lancaster, UK, at http://www.comp.lancs.ac.uk/sociology/papers/Urry-Automobility.pdf

Urry, J., 2002, 'Inhabiting the Car', published by the Department of Sociology, Lancaster University, Lancaster, at http://www.comp.lancs.ac.uk/sociology/papers/Urry-Inhabiting-the-Car.pdf

Veltre, T., 1996, 'Menageries, Metaphors and Meanings', in Hoage, R.J. & Deiss, W.A., (Ed.) 1996, *New Worlds, New Animals*, Baltimore and London: Johns Hopkins University Press: 19-29

Vercors, 1953, *Borderline* (Transl. Rita Barisse), New English Library (1976)

Waller, R., 1984, 'Interaction and Identity on the Periphery: The Trans-Mara Maasai' *International Journal of African Historical Studies*. Vol.17, No.2: 243-284

Waller, R., 1993, 'Acceptees and Aliens: Kikuyu Settlements in Maasailand' *in* Spear, T. & Waller, R., (Eds.) 1993, *Being Maasai*. Oxford: James Currey: 226-257

Wapshott, N., 1980, 'The perfect teacher, back with the animals`, *The Times*, 1 March 1980:14

Weimerskirch, H., & al., 2001, 'Energy saving in flight formation`, *Nature*, Vol. 413, (18 October 2001): 697-698

Weingart, P., Muhl, C. and Pansegrau, P., 2003, 'Of Power Maniacs and Unethical Geniuses: Science and Scientists in Fiction Film', *Public Understanding of Science*, Vol.12: 279–287

Whitaker, K., 1996, 'The culture of curiosity', in Jardine, N. & al. (Eds.). *Cultures of Natural History*, Cambridge: Cambridge University Press: 75-90

Whitley, R., 1985, 'Knowledge Producers and Knowledge Acquirers: popularisation as a relation between scientific fields and their publics', *in* Shinn, T. and Whitley, R. (Eds.), 1985, *Expository Science: forms and functions of popularisation*, Dordrecht: Reidel: 3-28

Whittakker, C., 2001, 'How the BBC pictured itself', *in* Roberts, G., & Taylor:M., (Eds.), 2001, *The Historian, television, and television history*. Luton: Luton University Press: 145-156

Wildscreen, 2008a, David Attenborough—Oral History Transcription. accessible on-line at www.wildfilmhistory.org/oh/3/David+Attenborough.html (last accessed 17 June 2008)

Wildscreen, 2008b, Desmond Hawkins—Oral History Transcription, accessible on-line at www.wildfilmhistory.org/oh/23/Desmond+Hawkins.html (last accessed 17 June 2008)

Wildscreen, 2008c, Richard Brock—Oral History Transcription, accessible on-line at www.wildfilmhistory.org/oh/29/Richard+Brock+.html (last accessed 10 July 2008)

Wildscreen, 2008d, Martin Saunders—Oral History Transcription, accessible on-line at www.wildfilmhistory.org/oh/14/Martin+Saunders.html (last accessed 10 July 2008)

Wildscreen, 2008e, Desmond Morris—Oral History Transcription, accessible on-line at www.wildfilmhistory.org/oh/19/Desmond+Morris.html (last accessed 10 July 2008)

Williams, G. C., 1966, *Adaptation and Natural Selection: A Critique of Some Current Evolutionary Thought,* Princeton (NJ): Princeton University Press

Williams, S.J., 2001, *Emotions and Social Theory, corporeal Reflections on the (Ir)Rational*, London: Sage Publications

Willock, C., 1978, *The World of Survival*, London: André Deutsch

Wilson, D. S., & Wilson, E. O., 2008, Rethinking the Theoretical Foundation of Sociobiology, *Quarterly Review of Biology*, (In press)

Wilson, E. O., 1980. *Sociobiology: the abridged Edition*. Cambridge (MA): Belknap Press of Harvard University Press.

Wilson, E. O., 1992, *The diversity of Life*, Penguin (2001)

Wilson, E. O., 2002, *The Future of Life*, Abacus

Winner, L., 1980, 'Do Artifacts Have Politics?' *in* Winner, L.. 1989, *The Whale and the Reactor, a search for limits in an age of high technology*, Chicago, London: The University of Chicago Press:19-39

Wise, M.N., 2006, 'Making Visible', *Isis*, Vol.97:75-82

Withworth, D., 2008, 'Sir David Attenborough is still a force of nature'. *The Times*, 23 January 2008. Available online at <http://entertainment.timesonline.co.uk/tol/arts_and_entertainment/tv_and_radio/article3232397.ece> [last accessed 02 May 2009]

Wonders, K., 2003, 'Habitat Dioramas and the Issue of Nativeness'. *Landscape Research*, Vol.28, No.1: 89-100

Wynne, B., 1995, 'Public Understanding of Science', in Jasanoff, S. (ed.), 1995, *Handbook of science and technology studies*, London: SAGE Publications: 361-388

Wynne, B., 1996, 'Misunderstood misunderstanding: Social identities and public uptake of science', *in* Irwin, A., Wynne, B. (Eds.). 1996, *Misunderstanding Science? The public reconstruction of science and technology*, Cambridge: Cambridge University Press: 19- 46

Yearley, S., 1985, 'Representing Geology: textual structures in the pedagogical presentation of science', *in* Shinn, T. and Whitley, R. (Eds.). 1985, *Expository Science: forms and functions of popularisation*, Dordrecht: Reidel:79-101

Yearley, S., 1994, 'Understanding science from the perspective of the sociology of scientific knowledge: an overview', *Public Understanding of Science*, Vol.3: 245-258

Yearley, S., 1996, 'Nature's advocates: putting science to work in environmental organisations', *in* Irwin, A., Wynne, B. (Eds.), 1996, *Misunderstanding Science? The public reconstruction of science and technology*, Cambridge: Cambridge University Press: 172-190

Yearley, S., 2000, 'Making systematic sense of public discontents with expert knowledge: two analytical approaches and a case study', *Public Understanding of Science*, Vol.9: 105-122

Yeo, R. R., 1993, *Defining Science: William Whewell, natural knowledge, and public debate in early Victorian Britain*, Cambridge. New York: Cambridge University Press

Young, L., 2003, *Middle Class Culture in the Nineteenth century*, Basingstoke, New York: Palgrave Macmillan

Zehr, S., 2000, 'Public representations of scientific uncertainty about global climate change', *Public Understanding of Science*, Vol.9: 85-103

Zuk, M., 2006, 'Family values in Black and White', *Nature*, Vol.439 (23 February 2006): 917