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Signs of Anthropomorphism: The Case of Natural History Television Documentaries

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This article employs Peirce's triadic concept of the sign, and Deleuze's theory of the image-movement to propose a social semiotic account of the ways in which visual signs in British and US natural history anthropomorphicise 'nature'. Peirce's semiotic is employed to critique both realist and relativist accounts of anthropomorphism. Although there may be a causally indexical relation between photographic signs and object, the fact that all signs are constituted by a three-way relationship between sign, object, and interpretant means that natural history documentaries, like the scientific texts that purportedly inform them, are ineluctably anthropomorphic. Deleuze's account of the image-movement is employed to explain why, far from being a dispassionate capturing of 'any-instants-whatsoevers', natural history image-movements organise movement in ways that are mediated by the semiotics of the natural history genre. As such, image-movements also constitute a form of anthropomorphism.

> Nature as it really exists is our line of business. (Willock 1978, p. 41)

Introduction

The question of anthropomorphism is an important one for natural history documentary filmmakers. As Colin Willock, the former head of Anglia Television's natural history unit and one of the pioneers of the genre, once put it: '… I had laid it down as one of the tenets of *Survival* that we would always avoid sentimentality and that we would never allow ourselves to be accused of anthropomorphism' (Willock 1978: 33). Similar concerns can be found in David Attenborough's books about his television series. After saying, in *The Private Life of Plants*, that 'plants can see' (1995: 7), he adds that he does not wish to imply that plants have the consciousness of humans, or that plants are able to determine their own evolutionary process. Like Willock, Attenborough is keen to avoid claims that his work imposes human forms and values on the natural world. This is the positivist understanding of anthropomorphism that has been used by many scientists to critique natural history documentaries. Anthropomorphism, in this sense, is the sign of an unscientific disposition towards non-human nature.

Anthropomorphism has also been critiqued, albeit from a very different perspec-

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tive, by a number of scholars in cultural and media studies. There is, for example, the seminal work of Raymond Williams. Although Williams does not theorise the concept of anthropomorphism itself, his analysis of the concept of nature provides a useful, if indirect, critique of the uses of anthropomorphism. Williams explains that the concept of nature has an extraordinarily complex history, and a variety of meanings. Nature is, among other things, '(i) the essential quality and character *of* something; (ii) the inherent force which directs either the world or human beings or both; (iii) the material world itself, taken as including or not including human beings' (Williams 1983: 219). Everyday use of the concept frequently conflates the various meanings, and always reflects the social order, identity and location from which the speaker makes statements about 'nature'.

In work that is more specific to the problem of anthropomorphism, Evernden (1992) distinguishes between various forms or levels of the phenomenon. He suggests that, along with 'physical' and 'emotional' anthropomorphism, there is 'cultural' anthropomorphism: 'Instead of attributing a human form, emotion, or sensation to something, we [can attribute] a human *explanation* to the nonhuman world. We see two mammals bumping each other other or making loud noises, but what we report is often not a simple description, but a conclusion: the animals are exhibiting "aggression", or perhaps "competition" ' (Evernden 1992: 53). This last form of anthropomorphism has been recognised, among others, by Haraway (1987).

Finally, and of most direct relevance to this essay, Crowther (1995) has revealed how the narrative forms of natural history documentaries tend to anthropomorphicise nature in ways that reproduce patriarchal discourses. Biological references to animal 'kingdoms', sociobiological accounts of male prowess in procuring 'harems', and the documentary narratives of male quests and adventures in 'nature' all attest to the extent to which the production and construction of natural history documentaries are systematically structured by the meanings and values associated with patriarchy.

Although my own research builds on the work of these authors, I am concerned with addressing problems in both the positivist and in the more recent critical accounts of anthropomorphism. Where the positivist accounts are concerned, I argue that the question is not whether natural history documentaries anthropomorphicise nature: anthropomorphism, I will argue, is as unavoidable as representation itself. Where the work of many scholars in cultural and media studies is concerned, I argue that their research has yet to theorise what can be described as the social semiotic basis of all forms of anthropomorphism: underlying and articulating what Evernden describes as separate forms of anthropomorphism—the physical, emotional and cultural—are anthropomorphic *signs*. Signs are of course produced by humans and must thus be regarded in this very general sense as human, and therefore humanising, forms. But even as they reproduce some aspect of nature, signs *shape* nature according to specific cultural values. Each cultural group represents the natural world in ways that produce, and reproduce—or at times contest—particular webs of signs. If nature is not understood as an immutable essence but as a concept whose meaning has changed over time, and if this concept, like all of the concepts that are used to represent the natural world, is a sign, i.e. a

'human' but above all a *cultural* form, then humans cannot but be anthropomorphic when speaking about nature. Although I will argue that it is necessary to qualify the potentially relativist nature of statements like this, we can say provisionally that the word 'elephant' is not an elephant, a picture of a tiger is not a tiger, and a moving-image of a bald eagle is not the eagle itself, bald or otherwise. *Ceci n'est pas un hippopotame*.

To speak of human and cultural signs of nature is not to suggest that all meanings of nature are shared. Just as Hodge & Kress (1988) and, before them, Voloshinov (1973) argue that there is no single dictionary of signs used by all speakers of a culture, it can be argued that there is no single dictionary—or encyclopaedia—of nature used to refer to that pseudo-totality, 'nature', which is nonetheless treated as totality in everyday life. Despite some shared assumptions on some levels, an ethologist's nature is different from a modern druid's nature, and these two are in turn different, in at least some respects, from a natural history producer's nature.

It is the last of these three natures that I wish to investigate. But this is potentially a vast subject of research: it is possible to distinguish analytically between the institutionalised production, the internal construction, and the everyday reception (Thompson 1990) of natural history documentaries on television, each of which has yet to be researched in detail, and each of which must be linked to genre and broader social histories. Although I will have something to say about each of these analytically distinct aspects, I will concentrate on the second aspect; that is, on the textual construction of the genre. Even within this domain, I will only describe the articulation of the visual signs that constitute moving images in natural history documentaries. I do not mean to suggest by this delimitation that the documentaries are somehow comprehensible without the voice-over narration and sound effects, or even that the visual signs are the most important. Clearly, the reading of natural history documentaries relies as much on the acoustic and visual signs as it does on the multi-modal whole. But thus far, comparatively little has been said about visual anthropomorphism. Many researchers, and indeed many producers, have assumed that it is the words or the combination of words and images in documentary *narratives*, that are anthropomorphic. I would thus like to show why and how even the 'purely' visual, that last haven of 'unspoilt' Nature, is itself anthropomorphic in culture.

Anthropomorphism and the Triadic Model of Sign

I will begin with an account of the anthropomorphic nature of photographic images. My approach will employ the semiotic theory of Charles Sanders Peirce (1931–1958). Much of the semiotic research about the nature of photographic images in general, and photographic images in film in particular, is based directly or indirectly on the semiotics of Ferdinand de Saussure, and of his European 'disciples', Hjelmslev and Barthes. The dominance of the Saussurean (or 'post-Saussurean') paradigm, at least in the field of Media Studies, is underlined by the fact that some of the field's textbooks attempt to reduce the two traditions to a series of equivalences: Peirce's object is the equivalent of Saussure's signified, and so forth. But

such reductions conceal the many subtle differences between the two sets of theories. For reasons of space, I cannot provide a comprehensive review of these differences, or indeed of the different philosophical approaches that underpin each tradition. In this essay, I merely wish to begin to compare and contrast each scholar's fundamental model of sign; my research seeks to explore some of the problems that Saussurean semiotics, and more specifically his dyadic sign model, pose for the researcher interested in investigating multi-modal representations of nature.

Whereas Saussure develops a dyadic concept of the sign (the sign as the conjunction of signified and signifier), Peirce develops a triadic account: he suggests that signs are constituted by the conjunction of the sign itself or representamen, the sign's object, and its interpretant. The representamen is an abstract quality or form of the sign, which presents its object as that object in some regard or respect; it is, by definition, 'partial'. The object, in turn, is understood not only as an empirically verifiable object, but also as a quality, relation or fact, something thought to have existed or expected to exist. What constitutes the object of a sign is the fact that it is represented by the sign. The interpretant is not to be mistaken with the individual interpreter of the representamen; it is, more generally, any other sign or system of signs that a given sign must be translated into in order to be meaningful. Signs are signs only inasmuch as they entail this three-way relationship (Peirce 1931–1958; Liszka 1996).

In the context of natural history documentaries, there are three methodological advantages to be gained using Peirce's approach: first, and remarkably given the assumptions made by many researchers who conflate signified with referent, Peirce's concept of sign does have an object. There is, strictly speaking, no representative condition in the Saussurean model of the sign, other than that between the mental concept (signified) and the material trace of this concept (signifier). I would argue that this is a problematic model of sign in any context of representation. But in the context of representations of nature, this omission renders unthinkable the possibility of a nature that is yet to be named, which does not exist beyond a given semiotic system.[1] To be sure, Peirce's pansemiotic conception of the universe can itself be read as having this same problem, albeit for very different reasons: Peirce suggests that the universe is constituted in its entirety by the triadic relations that constitute signs. I interpret this as a form of anthropocentrism that must itself be critiqued: signs are, 'by their very nature', human constructs, and even if the universe as universe is a cultural construct, it is of course not true that what we call the universe is no more than a human construct. It is this 'surplus', which is not just a 'surplus of meaning', that I believe can and must be articulated with a triadic theory of the sign.

The second advantage of Peirce's model is that, even as it recognises an object of representation, it also recognises that the meaning of that object is always contingent on other signs. Of course, it can be argued that Saussure's approach does the same inasmuch as it recognises that the meaning of any particular sign is dependent on its relations (of binary opposition) with other signs. But as in the case of the missing object, this process is considered in terms of relations that are, strictly speaking,

external to the sign. Peirce's conception 'internalises' this pragmatic dimension by suggesting that a sign is only a sign insofar as it has, among other relations, a relation between itself as representamen and other signs, or systems of signs. In the context of a discussion of anthropomorphism, Peirce's account is the more powerful because it explains in a fundamental way why all representation of the non-human must be essentially anthropomorphic: it is not just that signs of the non-human, and among them natural history documentary signs, are anthropomorphic thanks to their 'partial', cultural, or indeed 'humanising' nature (as in attributing human forms to non-human entities). They are also anthropomorphic because their *meaning* must be construed by means of other, equally 'partial' signs. Contrary to what might be suggested by positivist traditions, no sign, or web of signs, can escape this process.

The third advantage is that, unlike Saussure, Peirce develops an extraordinary typology of signs that allow the researcher to escape, at least in some respects, the logocentrism of the Saussurean concept of the sign, and of the semiologies of photography and film of many of his followers. This typology is extremely subtle, and offers many taxonomic avenues. I am, for the moment, particularly interested in the typology built around the representational condition of the sign; that is, the aspect of the typology that explains how different types of signs relate to their object.

From the perspective of the representational condition of the sign, Peirce distinguishes between iconic, symbolic, and indexical signs. I have read accounts that suggest television and film combine iconic and symbolic signs inasmuch as they combine images, and the written or spoken word. But this constitutes a superficial application of Peirce's typology. Any given natural history documentary image is itself at once iconic, symbolic, and indexical. A documentary image of a lion is iconic insofar as it is a likeness of a lion: the sign or representamen's qualities are similar, in at least some respects, to the lion's (the object of representation). But the image is arguably also indexical insofar as there is, or has been at some point, a relation of contiguity between the image and the lion. This relation of contiguity, in Peirce's terms, is both causal—insofar as, at least on the photo-chemical level, the image is caused by the particular reflection of light that produces the image on the film stock (or in the Cathode Ray Tube (CRT) or chip)[2]—and designative, insofar as the camera acts metaphorically, and usually 'invisibly', as a finger pointing at the lion: see this lion. But the photographic image is also *symbolic*, insofar as there is always a habitual, encoded meaning in the images of lions promoted by the genre relations sustained by natural history documentaries. The claim that two-dimensional images of lions are iconic and indexical rests, at least in part, on the capacity to apprehend a relation of contiguity between image and object. On the other hand, in the orientalising (Said 1978) tradition of natural history documentaries, at least for most Western audiences, lion is likely to mean 'Africa', 'Wild', and indeed 'Nature itself'. The signs of natural history documentaries are multi-modal even on the level of the photographic signs themselves.

The realist fallacy consists of assuming that photographic signs are purely causal indexes. This is what one may be led to believe by the comments of some natural history documentary producers, who both bolster and undermine their own

realist claims by suggesting that their documentaries have been vetted by scientists for accuracy. But ironically, this same position is espoused by those scientists who believe that most broadcast documentaries are, but ought not to be, anthropomorphic: the documentaries ought not to be anthropomorphic because anthropomorphism undermines the (realist) principle of facticity.

The critique of realism, as applied to the macro-genre of documentaries, has become something of a common-sense perspective in Media and Cultural Studies. It can be suggested that this critique has been taken so far as to become relativistic. Although this claim is frequently made from the vantage point of a realist discourse, it can be argued with Peirce's theory that the relativist fallacy consists of assuming that photographic signs are purely symbolic signs. Even if we can agree with Eco that natural history images (or rather, their producers) can lie, it would be an error to suggest that, in all but the most manipulative of the digital, 'post-photographic' images—and perhaps even these—the images *only* lie.

Natural History Documentaries as 'Image-Movement'

Thus far, I have concentrated on the photographic semiotic of natural history documentaries. If I were now to suggest that this semiotic works with sound and motion to produce the documentaries as we know them, I would be repeating a mistake found in the film theories that fail to theorise motion. To my knowledge, only Gilles Deleuze has theorised this aspect of cinematic representation in a way that eludes simplistic accounts about the relation between image and movement, image and time. He has done so not so much to develop a new film theory—although that is arguably one of the by-products of his work—but to philosophise modern transformations in the representation of time. If Deleuze is interested in film, it is because film is a metaphor for modern conceptions of time and space.

Fascinating as this aspect of Deleuze's work is, I wish to invert this order of priority to use some of Deleuze's insights to analyse the nature of anthropomorphism in British and US natural history television documentaries. I am particularly interested in employing Deleuze's articulation of what he describes as the levels of frame, shot, and montage. Once again, I do not mean to suggest by this that these levels are somehow self-sufficient, or that they should be decontextualised from over-arching relations of discourse, genre, and social ideology. My justification is that these levels have received comparatively little critical attention by other theorists of the subject, at least from the perspective of the relationship between each of the mentioned levels, movement, and anthropomorphism. I should also explain that I assume, despite some differences on some levels—differences that I will recognise in due course—that I believe Deleuze's film semiotic adequately theorises the semiotic articulation of texts that are distributed and seen as television programmes. To be sure, virtually all British and US natural history documentaries are shot in 16 mm, or, more recently, Super 16 mm film.

According to Deleuze, the fundamental film semiotic is constituted by the levels of the frame, shot, and montage. The first of these levels, the frame, is the result of 'the determination of a closed system, or a relatively closed system which includes

everything that is present in the image' (1986: 12). Framing constitutes a set of elements—in the case of natural history documentaries, the set and various subsets constituted by 'nature' as defined by the natural history genre—that are included in the rectangular frame of the film or television screen. Deleuze understands this system not as a linguistic system, but as an 'information system' where 'the elements are data [*données*] which are sometimes very numerous, sometimes of limited number' (1986: 12; original emphasis). It is a *relatively* closed system insofar as it works simultaneously by including some elements and suggesting the co-presence of others by means of the out-of-field. The out-of-field 'refers to what is neither seen nor understood, but is nevertheless perfectly present' in any given framing (1986: 16). This enables a certain 'circulation' between the level of the frame, and the levels of shot and montage: it is not just that that the montage builds on the frame and the shot, but that the montage is, according to Deleuze, 'prefigured' in the levels of frame and shot. A single shot can be a montage.

The act of framing—of including or excluding certain elements—is always related to an *angle* of framing. The frame is an 'optical system' that refers to a point of view whose logic, Deleuze explains, always seems driven by a pragmatic rule: 'to avoid falling into an empty aestheticism they must be explained, they must be revealed as normal and regular—either from the point of view a more comprehensive set which includes the first, or from the point of view of an initially unseen, not given, element of the first set' (1986: 15). As I suggested earlier, after recognising the partially indexical nature of the constituted frame, the constitution of this system as 'system' is a cultural act: a wildlife photographer selects some aspect of nature that he/she films. The lions, gazelles, or the whales are always framed from a particular perspective by someone; the framing process is always related not just, as Deleuze puts it, to an angle of framing, but to *someone's* angle of framing, where the decision as to what angle to choose is the result of a dialectic between the social, i.e. the institutional, and the personal, where the personal is itself understood as an individual's discursively positioned realisation of the social web of signification. We can in this sense note that Peirce and even Deleuze appear too ready to bracket, at least on some levels of analysis, what Bettetini (1984) and other workers have called the empirical subject of enunciation. If Saussure's sign 'mentalizes' representation and renders it objectless, Peirce's semiotic at times seems to render the sign 'subjectless'. After recognising the dangers of theories of intentionality, the need remains to link cinematic and television signs, if not to individual producers, then certainly to a pragmatics of representation that considers the politics of enunciation.

In natural history documentaries, the angle of framing is constructed in terms of modern perspectival representation. Despite recent changes brought about with digital photography, this mode is so widespread as to seem 'natural'. But as many historians of art have noted, this representational style, like all others, has a history. Baxandall (1972) shows, for example, how a fifteenth-century woodcut by Bartolo da Sassoferrato, *De Fluminibus*, is virtually incomprehensible to a modern gaze insofar as it takes for granted that the reader will decode the picture from multiple angles of perspective. Part of the woodcut, which depicts a river scene, must be read

from an angle that is slightly above the represented riverbank, while another, joined by the same river and showing what looks like a diagrammatic island along the same river, assumes that the viewer is gazing directly downwards. As Baxandall explains, 'the first convention is more immediately related to what we see, where the second is more abstract and conceptualised' but 'both involve a skill and a willingness to interpret marks on paper as representations simplifying an aspect of reality within accepted rules' (1972: 32).

It might be assumed that, in natural history documentaries, modern perspectivalism means that viewers no longer require interpretative skills. But this is not the case. As Kress & Van Leeuwen (1996) explain when analysing what they call the grammar of modern visual design, perspective in modern perspectival representations has been unified in a manner that *subjectifies* vision to one single point of perception. This is paradoxical because the effect on the viewer is, if anything, one that is likely to *objectify* the relation between the viewer and the viewed: the sedimented cultural authority of the style, and of institutions that employ this perspective is such that it suggests not a 'subjective', but rather a 'total' vision; one that shows not a nature, a rectangular nature, represented by a Western, perhaps a colonial or neocolonial perspective, located in one spot in the vast Serengetti plain, but simply Nature, i.e. Nature-As-It-Is-In-Itself, or, to return to the epigram, Willock's nature. Here, the fact that this Nature-As-It-Is-In-Itself is, unlike Willock's nature, not normally found grazing or galloping, distraught, in the Serengetti in two-dimensional, 4×3 aspect ratio, does not seem to matter.

Co-existing with what I describe as the classical mode of representation in natural history documentaries, which relies entirely on this perspectival style, there is in some wildlife documentary series a more 'reflexive' style (Nichols 1991) with scenes with multiple perspectives in any given edited television frame. An example of this style is found in the BBC's *Watch Out* series, which represents not the big game of Africa or Asia, but the 'everyday life' nature of the British Isles. Somewhat unusually for the BBC's wildlife productions, the series is produced by a female producer. Although this argument cannot be taken so far as to essentialise gender differences, it does not seem to be a coincidence that the programmes are structured along the lines of a decentred and de-subjectified subject, and that they deal with topics—'local' natures—that have been relatively marginal to most natural history documentaries on television.

I would now like to return to the question of movement; that is, to Deleuze's second level of cinematic representation: the shot. According to Deleuze, shot equals framing plus movement: 'Cutting [editing] is the determination of the shot, and the shot, the determination of the movement which is established in the closed system [the frame], between elements or parts of the set' (1986: 18). It is possible to argue provisionally that the partiality of the photographic image as frame has its analogon in a film camera that creates movement by juxtaposing what Deleuze and, before him, Henri Bergson refer to as a succession of 'any instants whatsoever'. This succession is radically different in both its realisation and its projection from older forms of representing movement. The older forms can be seen in paintings prior to the development of photographic apparatuses, in the images of magic lanterns, and

even in some of the visual toys of the early nineteenth century. Whereas these older forms relied on representations that juxtaposed a succession of idealised 'poses' of movement, the new form of representation juxtaposes a succession of 'any instants whatsoevers', taken frame by frame by the camera.

The new style is not without its paradoxes: a problem in cinematic representation is that, even as the camera dispassionately records the object of representation in a succession of any instants whatsoevers, the filmmaker attempts to organise this process in a manner that renders it meaningful; that is, meaningful according to the conventions of whatever genre is being employed. Here, too, it is important to consider aspects of the history of the representational style. Edward Muybridge is one of the historical precursors not just of the process already mentioned (the recording of a succession of any instants whatsoever), but also of the cinematic or quasi-cinematic representation of non-human animals. Muybridge's famous sequences of photographs of horses trotting, produced in the Southwest US in the 1870s, were taken by a line of cameras that were triggered when the horses pulled strings placed in their path. Muybridge wanted to provide photographic evidence that there were moments in which all of the horse's feet were off the ground. He did this in an effort to prove, among other things, that existing illustrations of horses were mistaken. His project was one that, in Deleuze's terms, might be described as the replacement of an older paradigm of the representation of movement—what I described earlier as movement as the idealised pose of movement—with a paradigm for which movement becomes the succession of any instants whatsoevers.

Insofar as Muybridge's work used a photographic apparatus to reveal hidden aspects of nature, it is possible to establish a continuity, for all the discontinuities, between this process and that promoted by Francis Bacon and other scientists in the emerging classical science paradigm during the sixteenth and seventeenth centuries. Carolyn Merchant (1980) has revealed the extent to which Bacon employed a web of metaphors that sustained patriarchal ideology: the object of modern science, as conceived by male scientists, was to extract the 'secrets' of a 'female' nature. As Bacon once put it, nature should be 'bound into service' and be made a 'slave' of what he called the mechanical arts. Centuries later, Muybridge's photographic work, like contemporary natural history documentaries, can be thought of as an analogous disciplinary technique, albeit one that uses the recording of successions of any instants whatsoevers to control nature by *symbolic* means. In contemporary documentaries, this process occurs not so much for the benefit of 'mankind' (as suggested by Bacon), or indeed for the protection of endangered species (as suggested by many wildlife producers), but for the purposes of the accumulation of capital by documentary filmmaking companies. In both historical periods, and as described in detail by Merchant (1980) and Crowther (1995), the process is framed in terms of patriarchal discourse.

Charles Musser (1990) explains that, after taking the sequences of photographs, Muybridge travelled widely, showing the sequences and giving lectures on their subjects and techniques. It is tempting to regard the lectures as a precedent, or at least as an historical analogon, of the voice-over narration of contemporary natural history documentaries. But how did audiences respond to these lectures and their

images? Musser has found articles that describe popular responses in the *San Francisco Chronicle*:

> The stride of Abe Edgington, and of the still more celebrated trotter Occident, was depicted in a clear manner in ten photographs (…) the strange attitudes assumed by each animal excited much comment and surprise, so different were they from those pictures representing our famous trotters at their full stride. But that which still more aroused astonishment and mirth, was the action of the racer at full gallop, some of the delineations being seemingly utterly devoid of all naturalness, so complex and ungraceful were many of the positions … (9 July 1878: 3; quoted in Musser 1990: 49).

Responses like these suggest that the pleasure of these lectures was as much the result of the revelation of nature's 'secrets' as it was the denaturalisation of social understandings of motion. After recognising the differences in the media employed, this in turn suggests both a continuity and a discontinuity in relation to contemporary viewing experiences. From a critical perspective, contemporary natural history documentary audiences may derive part of their viewing pleasure from a process that also denaturalises the movements of wildlife. This denaturalisation is the result of the semiotic processes I have outlined thus far: selection, perspectival subjectivation, succession of any instants whatsoever, and so forth. However, unlike the reception process for those first audiences in San Francisco, contemporary audiences' experience of natural history documentaries has become so familiar as to effectively re-naturalise the process of representation. Today, one of the problems for many zoos is that both children and adults prefer to see animals not in cages, but as they really live in the wild, where how they 'really live in the wild' is largely determined by how they are represented in the wild in natural history documentaries. The social imaginary has, in this sense, been profoundly shaped by the genre. Where Muybridge's audiences laughed at the ungainly spectacle of a succession of 'unrealistic' photographic representations of horses, contemporary audiences are more likely to sigh at the idealised, 'graceful' beauty of geese flying in slow motion. Extraordinary shots like those produced by the *Survival* team in the award-winning *Flight of the Snow Geese*, in which imprinted goslings with human 'parents' fly after a truck with a camera, may have led contemporary audiences to regard the 'real time' motion of geese as being 'ungainly'. Evidence of this process would point to a cultural discontinuity: what was once regarded as unnatural becomes the natural, and *vice versa*; and an ideal that was not understood as an idealised representation was replaced by another ideal, which in turn became naturalised. To return to Raymond Williams' discussion of the concept of nature, the essence of 'nature' proves, in the end, not to be essential at all.

It is commonly assumed that film simply 'adds' motion to stills. But, according to Deleuze, the shot does not just 'set in motion' the elements within the frame by projecting a succession of any instants whatsoever. Traditional accounts of cinematic movement neglect a second dimension of movement, one that simultaneously relates the motion between elements to a 'whole', i.e. to an overall

message that is being communicated, but also, in one of Deleuze's metaphysical turns, to something like a cosmological whole: the whole of the universe, to what I interpret as that 'surplus' of 'nature' that is not just a surplus of meaning. The movement is a movement of parts (as when the cheetah runs past a bush or any other element of the wild 'set') but also a transformation of a situation: the cheetah is running, and the running constitutes not just a representation of a singular physical transformation (the cheetah is not stationary, it is now running), but also the transformation of a plurivocal cosmos: the cheetah runs after something that also undergoes transformation even as the earth rotates around the sun and the solar system spins in the Milkyway. 'Thus', Deleuze says, 'the movement has two facets, as inseparable as the inside and the outside, as the two sides of a coin: *it is the relationship between parts and it is the state [affection] of the whole*' (1986: 19).

But the whole that is being represented is not itself 'static'; as Tales of Miletus once noted, one never bathes in the same river. In this sense, the shot is a 'mobile section of a duration'; it is, as Deleuze puts it, an image-movement (1986: 22). The art of the filmmaker is to simultaneously capture and release this mobility, a mobility that is most obviously represented by tracking shots but that is actually found in any shot.

Why and how does this process constitute a form of anthropomorphism? With Deleuze, and indeed with Peirce, we can argue that this in fact does not constitute anthropomorphism insofar as the represented movement is treated as an index of the physical forces of the cosmos: the represented movement, insofar as it is itself 'in' movement, suggests a causal relation between the forces of 'nature'. But to treat the representation of movement as no more than this is, from a Peircian perspective, to fall into the trap of thinking dyadically; a triadic conception suggests that the movements can and should also be regarded as cultural movements; that is, as cultural forms. Here, the most obvious argument is that the movement of a bat swooping in to capture the 'unsuspecting' frog in the Panamanian rainforest is, on one level, the movement 'itself' but, on another, the succession of any instants whatsoevers that are reconstituted as movement by the cinematic process. Whether or not the bat is, as filmmakers like to say, studio based, is immaterial to the argument: documentary signs are anthropomorphic even when the wildlife have not signed a contract with the filmmaker: bats in studios, like bats 'in the wild', but unlike the hare and the tortoise in Pre-Socratic conundrums, move neither in sections nor by reconstituted instants.

There is, however, a more subtle form of anthropomorphism, and one that must be explained in relation to Deleuze's second level of movement, and then to the pragmatics of a natural history documentary. The movement involves not just 'reconstituted' movements among the internal parts of the frame, but a relation to a 'whole'. I suggested earlier that, even if the camera proceeds by filming any instants whatsoevers, wildlife photographers and editors privilege certain movements, choose certain angles of framing that inter-relate the represented instant to the 'whole' in particular ways, where the 'whole' refers as much to a Deleuzian universal, indeed to *time*, as to a *narrative* whole, and thereby to a *pragmatic* whole. Although this is true for any shot, an excellent example is a shot found in the

BBC's *Hippos Out of Water*. The shot to which I am referring was used in British trailers for the programme, and may have been responsible for the programme's reported 12 million viewers.[3] The shot showed a hippo lunging at an underwater camera, its jaws agape. The representation of movement was clearly indexical insofar as we assume that the hippo did exist, and did lunge at the photographer. However, this shot was organised, one could even say staged, as a spectacle for humans. With Peirce, it is possible to argue that, if it is true that the relation between representamen and object is anthropomorphic, the same is true of the relation between the movement of the object and the movements of the interpreters, as mediated by the moving representamen. In this sense, we can argue that it is not just that the image-movement is 'made by' humans; it *moves for* humans. The hippo moves, the water moves, the planet spins and, if the documentary was successful, the whole world sitting in front of a television set moved as the hippo lunged.

In more recent natural history documentaries, much has been made of the fact that wildlife photographers are able to capture—the metaphor is no coincidence—the wildlife's point of view for added realism and scientific insights. So it is, for example, that in one National Geographic documentary co-produced with the BBC, the filmmakers speared white sharks in order to attach 'crittercams' to their dorsal fins. The technology was also applied—literally—to other species: for example, 'eagle-cams' were placed on the backs of eagles. After noting the humanity of animal rights arguments (Tester 1991) against such procedures, it is important to analyse the representational politics of the claims of the allegedly non-human point of view shots. Even if there is an indexical and iconic relation between object and representamen, the point of view shot is no more the shark's or the eagle's point of view, in anything but a simple geographical sense, than it is the character's in the explicitly human drama: audiences learn to treat such shots as if they were the animal's point of view. This constitutes an example of how the meaning of the representamen is based as much on the nature of the representamen itself as on the interpretant, or intertextual associations brought to bear: the anthropomorphism works not just on the level of the individual shot, but on the level of the montage and genre.

This kind of framing, which can be described as a form of *generic* imperialism, has extended the conventions of television drama to the representation of nature. Doing so has broadened the domains of nature that could be included in the natural history genre: not all wildlife is suitable for wildlife documentaries. A good example of this paradox can be found in the BBC's *Private Life of Plants*. The title of this series, like so many of the titles in the genre, was explicitly anthropomorphic. The series employed time-lapse photography as much to suggest that all plants, in Attenborough's words, 'must travel' (1995: 11), as to anthropomorphicise plants in ways that would enable filmmakers to use them as generically valid objects of representation. Prior to such extensive and ingenious use of these techniques, documentaries about plant life were rare, or where linked to the representations of species whose more visible movement 'compensated' for the generically 'dull' nature of plants. The producers of *The Private Life of Plants* overcame this 'problem' by making plants more like animals. The key technique used to achieve this involved

not just time-lapse photography, but fantastically complex and frequently studio-based set-ups that combined time-lapse techniques with computers designed to synchronise the opening and closing of camera shutters with camera movements, with the turning on and off of lamps, and—if all went well—with plant growth (Flowers 1995). On one level, the series undoubtedly entailed a radical and wonderfully creative representational process, one that can be justified in terms of both causal and designative indexicality: see these plants grow. This representational process arguably enabled viewers to question the naturalised boundaries between the plant and animal kingdoms [*sic*]. But it is also possible to argue that the series worked very hard to deny difference, and to 'enslave' plants with the 'mechanical arts' even as it 'released' their movements. The semiotic motivation can be found in the politics of the boundary-making process of the natural history genre: the syntax and pragmatics of the genre is such that not all nature qualifies as 'watchable' nature.

As I will explain in due course, if plants are to be shown they must produce, in the jargon of producers, some 'hey Mays'. At this point, I wish to describe the third level in Deleuze's semiotic. Complex time-lapse sequences and point of view shots involve the level of montage. The montage is the determination of the 'whole' that I referred to earlier, the whole idea, as Deleuze puts it (1986: 29). But why can this whole not be represented simply with a single shot?

> Between the beginning and the end of a film something changes, something has changed. But this whole which changes, this time or duration, only seems to be capable of being apprehended indirectly, in relation to the movement-images which express it. Montage is the operation which bears on the movement-images to release the whole from them, that is, the image *of* time. It is a necessarily indirect image, since it is deduced from movement-images and their relationships. Montage does not come afterwards, for all that. Indeed, it is necessary that it should be presupposed … If we consider the three levels [frame, shot, montage] … there is a circulation between the three which enables each to contain or prefigure the others. (Deleuze 1986: 29).

I interpret this statement as a recognition of a triadic relation: it is not just time, it is a representation, in the triadic sense of this term, of time. I wish to begin to explain the semiotics of this 'indirectness' as it occurs in television montage. Even if the documentaries are usually shot in 16 mm film, they are edited for television and for television audiences. In the UK, natural history documentaries tend to be constituted by assemblies of montages that are either 30 or 50 minutes long. Unlike some other forms of documentary filmmaking, any given montage is organised as a very loosely knit 'segment'. I borrow this term from Ellis (1992), who defines it as 'a relatively self-contained scene which conveys an incident, a mood or a particular meaning' (148). In the case of natural history documentaries, this definition can be specified as follows: segments are simple narratives or fragments of narratives based on principles of species description, action involving one or more species, geographical location, or some permutation of these three principles. Each documentary is

constituted by an extremely loosely, and arbitrarily linked sequence of segments, so defined. The relative autonomy of each segment allows for extra-textual interruptions (e.g. commercial breaks). But it also resolves a pragmatic challenge on the level of production, even as it creates another on the level of the social reception of the documentaries.

From the point of view of the production process, the material provided by wildlife photographers is little more than an ensemble of shots and sound effects of disparate species, filmed at times in very different locations. A montage may be constituted by shots taken 'in the wild', in zoos or, frequently, both. Although the more experienced wildlife photographers undoubtedly shoot with particular montages in mind, it is usually the task of the producer and editor to represent the 'whole' with the shots. This happens by linking shots into segments, which function as miniature or 'local' narratives that are strung together tactically (De Certeau 1984) and, in relation to an overarching narrative, that provide the outer limits for a full-length episode: the wildlife of the Serengetti, the endangered white rhino, the private life of plants, and so forth. The advantage of this documentary form is that the photographic process need not be as planned as would otherwise be the case. This is as much a matter of economics as it is of the domination of nature: unless one is willing to force lemmings to leap off the cliff side as the Disney Studios did (Wilson 1992), non-studio-based bats, lemurs, or cobras frequently prove to be 'too wild' to be filmed 'properly'. With few exceptions, one of the most notable of which is the chimp-based soap opera, this dramatic problem is resolved by means of the strategy already described. Wildlife photographers are commissioned to 'do' a certain subject, which results in the filming of a series of relatively *discontinuous* shots produced in one or more localities, usually shot over a considerable interval of time. Editors and producers then assemble these shots by means of highly localised narrative *coups* (De Certeau 1984) that seem to make something, narratively speaking, out of nothing. Partially contradicting Deleuze, we can say that at least from the perspective of the production process, as distinct from the finished documentary, it is not necessarily the case that each shot contains or prefigures the rest of the montage: each shot must have the as yet undetermined 'potential' to prefigure the 'whole'. This is as much a matter of the semiotic device as it is the art, i.e. the social convention, of wildlife photography.

The tactical resolution of this production and montage 'problem' simultaneously creates and fulfils the need—a socially constructed 'need'—for more and more localised, some would say more fragmentary, forms of 'viewing' in households. To use the language of some producers, natural history editing ideally creates a string of 'hey May's'—segments in which the Bills or Johns or Tims of the all-important American market reportedly call the Mays or Jills or Molly's to the television set: hey May, come and see this. One is left wondering if this gendering of the calling is accurate and, if so, what this description says not just about gender and television in some North American households, but about gendering in the films, and in the day-to-day discourse of their producers.

So the segment form of montage provides local coherence for both the producers and the consumers of the images. Of course, coherence, whether local or pro-

gramme wide, is itself a matter of anthropomorphism: a human sitting in an editing suite or in a living room combines what was not literally combined, at the moment of filming (say, a rabbit nibbling at roots in the snow, and a puma gazing intently as in a scene used in the BBC's *Velvet Claw*). But from a less literal perspective, anthropomorphism also works by means of the process of narrativisation that results from such montage making. One way of interpreting the more metaphysically inclined Deleuze is to say that the whole that needs to be 'released'—it would be equally valid to say 'produced'—from the parts put in movement by the shot is the *narrative* whole: events are strung together in ways that suggest narrative causality. As Barthes once put it, *post hoc ergo propter hoc*. The *represented* rabbit and the 'represented' puma may have been, indeed almost certainly were, miles away from each other when they were filmed, but the pleasure of narration, the logic of narration, which is of course a human and culturally specific logic, and perhaps even a discursive logic in the Foucaultian sense of the term, is to suggest the contrary. Even if pumas do eat rabbits—we are told by one documentary that in parts of California some pumas are also quite keen on nature lovers—it is not the pumas, let alone the eaten rabbits, that tell the tale.

Conclusions: Redefining the Boundaries

I have argued that, underlying and linking what Evernden describes as physical, emotional and cultural anthropomorphism, is the process of *semiosis*, which is itself anthropomorphic with respect to 'nature'. The documentaries are produced by humans for humans, by cultural groups for cultural groups, even if the signs employed to do so may have an indexical dimension. The question is thus not whether the documentaries are anthropomorphic: they are *necessarily* anthropomorphic. But so is natural scientific explanation: science too, must represent nature.[4]

The question for some producers might thus be: What counts as *legitimate* anthropomorphism in natural history documentaries? It is tempting to reject outright such a manifestly normative question, and indeed my first inclination is to say, sagely, that there are different criteria for legitimacy in each context: natural history documentaries serve some purposes and audiences, scientific essays serve others. It is interesting in this sense that the cultural authority of science apparently leads both producers and scientists to forget this at times. But my second answer is meant to counter the danger of relativism that can creep in with this response. After recognising the differences in contexts, I am tempted to say that, if natural history documentary producers claim that their texts are 'scientific', they then are obliged to be both faithful to and creative with the scientific 'partituras'. But to say that would be to grant to scientific discourse the kind of infallibility that has been shown, again and again, to be a matter of ideology; that is, of relations of durable domination based on symbolic—but not exclusively symbolic—means (Thompson 1990). I would thus rather suggest that, where natural history documentary producers claim to be communicating in relation to science, they should use scientific discourse to critique uncritical forms of anthropomorphism. But they should also critique scientific

discourse when, for example, sociobiologists use the cultural authority of science to promote patriarchy, racism, and other forms of ideological relation.

Such a detailed response to such a local debate might seem rather like swirling a spoon in a tempest in a teacup. But perhaps an analysis of this context can provide insights for debates in other contexts whose participants fail to take into account the ineluctably anthropomorphic nature of their positions: debates, for example, between scientists and animal rights activists, animal rights activists and hunters, and more recently, between the public relations department of Monsanto (the multinational that has dominated the commercialisation of genetically engineered crops) and most of the rest of the world. In each of these contexts, arguments about the rights and wrongs of environmental policy ought not to proceed without a critical examination of the social ways in which each party anthropomorphicises its nature.

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Notes

[1] It is tempting to speculate about the extent to which the lack of an object in the Saussurean concept of sign contributes to relativism in related theories of representation.

[2] This is the relation that we are told is transformed in the 'post-photographic' era. See Mitchell (1992) for one account of the transformations involved.

[3] In the UK, the highest audiences are achieved by soap operas, with about 15–16 million viewers; natural history documentaries usually have audiences of between two and four million.

[4] See Locke (1990) and Myers (1990) for interesting accounts of representation in science communication.

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