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Anthropomorphic grammar? Some linguistic patterns in the wildlife documentary series *Life*

Abstract: Human language inevitably depicts the world from a human point of view. This article briefly reviews key positions on the use of anthropomorphic and anthropocentric language taken by scientists and discourse analysts. It then presents the data used in this investigation – a corpus of transcripts of the television series *Life*. The methods of analysis are explained, as is the focus adopted, which is less on the more obvious, lexical choices made by the presenter, David Attenborough, and more on the grammatical patterns which we suggest play a significant role in the depiction of the wide range of species represented in the programs. Three grammatical features – pronouns, the connective *so*, and the *to* infinitive form – were explored in context, and the results demonstrate how, separately and together, they play a significant role in the representation in these texts of animals' perspectives, connoting in subtle ways both intention and evaluation. We suggest a need for greater dialogue between broadcasters, discourse analysts, and ethologists.

Keywords: anthropomorphism; TV documentaries; corpus analysis; wildlife; pronouns; infinitives.

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1 Introduction

It is a truism that human language depicts the world from a human point of view. Extensive, longstanding, and growing concerns about the capacities of non-human animals, and about our relationships with them, give rise to considerations of how best to communicate about them, on the part both of those who study them professionally and those who re-present information about them to a non-specialist public. In this article, we review discussions about anthropomorphism

and anthropocentrism among scientists and discourse analysts, before turning to the data used in this investigation – a corpus of transcripts of the television series *Life*. We then explain the methods of analysis used, which focus less on the more obvious, lexical choices made by the presenter, David Attenborough, and more on the grammatical patterns which we suggest play a significant role in the depiction of the wide range of species represented in the programs.

2 Attitudes to anthropomorphic language in science writing

In the late nineteenth century, the notion of an absolute barrier between humans and other animals was threatened by the publication of Darwin's theory of evolution. While it was gradually recognized that the physical makeup and sensory organs of other species may not be so different from those of humans, there was also caution about assuming too much similarity. It was around this time that the term "anthropomorphism" came to be extended from "ascription to angels and God of human qualities" to include the projection of the latter on to animals (Wynne 2007: 126). Wynne quotes George Herbert Lewes (from the *Oxford English Dictionary* 2006), writing on the "vision of mollusks (which, he believed, had only rudimentary sensitivity to light)":

> "We speak with large latitude of anthropomorphism when we speak of the 'vision' of these animals. . . Molluscan vision is not human vision; nor in accurate language is it vision at all. . ." (1860, p. 359). He went on, ". . . we are incessantly at fault in our tendency to anthropomorphise, a tendency which causes us to interpret the actions of animals according to the analogies of human nature" (1860, p. 385).
> (Wynne 2007: 126)

In 1893, the comparative psychologist Charles Lloyd Morgan put forward his "basal canon," which advocated assuming no "higher" faculties in animals than were warranted to explain their behavior. The context is identified by Kimler (2000: 854) as "irresolvable tensions – evolutionary continuity *vs.* the separate quality of human abstract reasoning; objective observation *vs.* subjective experience; blind selection *vs.* intentionality." Morgan's canon laid a foundation for the convention in scientific writing of avoiding attributing to animals characteristics for which there was no clear evidence: "we are logically bound not to assume the existence of . . . higher faculties" without such evidence (cited in Sober 2005: 91).

In the early twentieth century, the role of empirical evidence became more prominent. Practitioners of the young discipline of psychology, who sought to

have it recognized as "a purely objective experimental branch of natural science" (Watson 1913: 158), proposed that both humans and animals should be investigated in equivalent ways, but that this should be without reference to the unobservable inner workings of mind or consciousness. Some aspects of terminology were stipulated: "I believe we can write a psychology, . . . [which would] . . . never use the terms consciousness, mental states, mind, content, introspectively verifiable, imagery, and the like" (1913: 166). This behaviorist approach discouraged the use of terms which implied knowledge of animals' (or people's) thoughts or emotions, seeing descriptions "concerning immediate experience" and "attempts at direct intercommunications" as the province not of science but of "the arts and . . . metaphysics" (Tolman 1935: 356).

By the middle of the last century, Tinbergen, credited with defining the field of ethology (Wynne 2007), was still drawing attention to the perils of subjective terminology, observing that though "one rarely meets with [subjectivism] in its crudest form ('the animal attacks because it feels angry'), . . . in its subtler forms it is still very much with us" (1963: 413), and he was concerned that concepts such as "play" and "learning" had not been – and perhaps could not be – "purg[ed] . . . completely from their subjectivist, anthropomorphic undertones." By 1967, the unacceptability of "any application of human-oriented language to the activities of other animals" was clearly being stated: "Anthropomorphic or teleological thinking has no place in a scientific study of animal behaviour" (Keeton 1967: 452, in Kennedy 1992: 1). Such proscriptions on the use of mentalistic descriptions of animals' actions are summarized by Boakes (1992: 22, cited in Griffin 2001: 29): "Attributing conscious thought to animals should be strenuously avoided in any serious attempt to understand their behaviour, since it is untestable, empty [and obstructionist]."

However, in more recent decades, there have been various reactions against proscriptions on anthropomorphic thinking and therefore on the use of anthropomorphic terminology. These developments can be seen as of two broad types. One view permits anthropomorphic terminology, but it is understood that this is just a convenience, a metaphor, not to be taken literally. The second is ontological, a more profound rejection of the rationale behind the proscription, from the position that "It is narrow minded to believe that we are the only species with minds or the only species that can think, make plans, and experience pain and pleasure" (Bekoff 2003: 55).

Within the first perspective, there are those who tolerate the use of anthropomorphic language and others who actively endorse it, at least to a limited extent. Arguments for the former position include the lack of available alternative ways to describe animals and their behavior, and the necessity of communicating in simple terms to lay audiences (including television viewers). Less pragmatic

reasons, according to Allen and Hauser (1991: 223), for making use of "mentalistic vocabulary or moderate anthropomorphism" include the potential of such resources to provide a "heuristic role in hypothesis generation (Dennett 1983, and Asquith 1984) and this view has been endorsed by some researchers of animal behavior (e.g., Burghardt 1985)."

Allen and Hauser (1991: 222–223) report that terms such as *strategy*, *deceit*, *cheating*, and *rape* are sometimes used "with explicit disavowals of the necessity to invoke any mental states underlying the behaviors described by these terms," so that the "metaphorical use of terms such as 'deceit' is an accepted part of behavioral ecology which must be understood on its own terms." On the other hand, they point out that "[o]ther researchers in both behavioral ecology and experimental psychology have intended their use of mentalistic vocabulary much less metaphorically. This is particularly true of those whose research has focused on cognition in nonhuman primates." The growth of cognitive ethology has led to an explicit engagement with "the subjective emotions, desires, beliefs, and behavioral choices [of animals] intended to achieve certain results or avoid others" (Griffin 2001: 23). Cognitive ethologists – and others – now defend descriptions of animals that use terms associated with humans, although the debate about how acceptable this is continues; for a recent review, see Asquith (2011).

To summarize: It has been established that human-like language for the description of animals is to some extent unavoidable; some commentators believe that a tendency toward anthropomorphism "is probably programmed into us genetically as well as being inoculated culturally" (Kennedy 1992: 167). Once explicitly proscribed and deemed unscientific, human-like terms for animals' actions are now more widely accepted – though to different extents and for different reasons – among those who research and report on animals and their behavior. We turn now to the more centrally linguistic literature.

3 Discourse analysis and anthropomorphic language

Space does not permit an extensive discussion of the relationships between physical reality, sensory perception, and linguistic representation. Systemicists have noted that both "the world of our experience" and the way that the lexicogrammar construes our experience are "highly indeterminate" (Halliday 2004: 173), and, more specifically, analysts such as Davidse (1992: 132) explore in detail the gradient categories, including of degrees of animacy and agency, that encode such "shifting meanings." Meanwhile, the way in which language "emerges organically from the interaction of varied inherent and experiential factors" (Langacker 1991: 1), giving rise to prototypical categories, has occupied cognitive

linguists, who also speculate about the degree to which human perception and animal perception overlap (e.g., Wierzbicka 1996, 2004). Langacker (1991: 307) proposes that "whether an entity is human, animate, physical, or abstract is a matter of its intrinsic character," and that we are predisposed to empathize more with those entities with which we share "likeness and common concerns."

At the same time, a growing body of linguistic work has begun to consider explicitly the representation of animals in various genres, often from a perspective that is critical of their treatment at the hands of humans. Rather than being concerned with anthropomorphism, then, this research is largely about anthropocentrism. Areas of investigation include: how animals killed for meat are represented discursively (Stibbe 2001, 2003; Dunayer 2003); how "nature" (in the form of both animals and inanimate phenomena) is represented as "an exploitable commodity" and "a territorial possession" (Goatly 2002: 25); Goatly (2006) and Keulartz and Van der Weele (2008) have explored the role of metaphor in discourse about animals, and Kemmerer (2006) coins the term "anymal" as a way of filling the lexical gap she perceives in the language for animals other than humans.

Although some researchers consider grammatical patterns (see below), the main focus of this kind of study is usually lexical – considering the nouns, verbs, and adjectives which label different species and their actions and behavior. In this, the discourse analysts' perspective tends to continue that of the animal scientists. As Asquith (2011) notes:

> Much of what has been written with regard to anthropomorphism by primatologists and ethologists is about vocabulary: whether, how or why particular terms or more generally intentional vocabulary are permissible when referring to animals. (Asquith 2011: 239)

Within linguistics, an obvious exception is the contrastive work which identifies both lexical and grammatical differences across languages, including in the way humans, animals, and other entities are construed, where number systems, case markers, and so on, as well as items of vocabulary, display variation. (See, for example, Lucy [1992] on Yucatec Maya; Yamamoto [1999, 2006] on Japanese.) Our focus here, however, is on English, and specifically the language of the wildlife documentary.

4 The wildlife documentary genre

Among the many kinds of discourse where nonhuman animals are prominent, wildlife documentaries are "a prism through which we can examine investments

in dominant ideologies of humanity and animality" (Chris 2006: xiv), so that they are potentially influential on how animals are perceived, discussed, and thought about (Dingwall and Aldridge [2006: 147], though see Bousé [2000: xiv] for a more cautionary take on the influential aspects of wildlife documentaries), and are for most people their chief (or in some cases, only) source of "contact" with foreign and exotic animals (Jacobs and Stibbe 2006: 1). As Chris (2006) points out, they both define and refine the concept of animality, and are thus particularly fruitful for exploring patterns in discourse where animals are the main topic. Implicated in the potential anthropomorphism of all such documentaries are not only the words used, but also the images, film techniques (such as time-lapse photography, composition of shots and camera angles, digital manipulation of images), and accompanying music (e.g., Bousé 2003; Elliot 2001; Horak 2006; King 1996). While it is acknowledged that these are all integral to these texts as a whole, the focus in this analysis is specifically on choices within the language itself, so these other aspects, while we recognize that they may influence audience perceptions, can only be touched on here.

Within this genre, the contribution of the internationally celebrated natural history presenter, David Attenborough, is hard to overestimate. The programs with which he has been associated are frequently cited as some of the most respected and representative of the wildlife documentary genre (Chris 2006: xii), and the present study uses those in the BBC television series *Life*. This prize-winning series was first broadcast on the BBC in 2009, and subsequently by media companies across the world.

Attenborough's style of commentary has received some criticism for its anthropomorphizing, a charge of which he is well aware (Attenborough 1982; Elliot 2001: 289; King 1996; Léon 2005), but, like all wildlife television presenters (see Siegel 2005), he has to manage competing demands; on the one hand, he is required to create and maintain audience interest, and on the other, he has to be aware of misrepresenting species by over-drawing the parallels with human beings. In a critical review of a book about the language of animal studies, Boakes (2001: 397) highlights a contrast between the language of popularizing presenters in wildlife television programs and that used for reporting research in academic journals. The former, he says, "use language that is entirely unrestrained in its attribution of human-like mental states to the nonhuman stars," whereas academic research is described (and there is, he maintains, "no puzzle here") in "an entirely different language, one that attempts to eliminate anthropomorphic terms." However, as we have seen, the issue is not quite as simple as this. Not only is there not a consensus about how undesirable anthropomorphic language really is, any commentator is also constrained by various features of language itself. Kennedy (1992: 158) argues for terminology that is "free of teleological, anthropo-

morphic overtones" – and in this he is at odds with some cognitive ethologists. Even from this position, though, he recognizes that attempts to abide by such a goal are "usually clumsy and prolix because they are inevitably strained compared with our everyday speech." Furthermore, he argues, these inherent constraints lead to less "innocent" outcomes than is the case with many other metaphors and analogies, because "anthropomorphic analogies for animal behaviour . . . readily generate misunderstanding" (1992: 159). Kennedy is concerned here with what he calls "unconscious" or "unwitting" anthropomorphism, a result of "our in-built tendency to think of animal behaviour subjectively as we think of our own" (1992: 35), which can mean that "[i]t is often hard to tell whether an author's anthropomorphic language is of the mock or the genuine variety, or unthinkingly ambiguous" (1992: 90).

5 Between lexis and grammar

We argue elsewhere (Sealey and Oakley 2013) that the *Life* programs differentiate among various kinds of creatures in the degree to which they are depicted as acting from desire and intention. Where this implication is carried by the choice of vocabulary, viewers are likely to notice the quite obvious, and probably intentionally humorous, examples of anthropomorphism. The musical and visual channels may emphasize this. For instance, in one sequence, from the episode *Creatures of the Deep*, a male cuttlefish mates with a (smaller) female, after which a second male cuttlefish comes into view, and we are told that, being small, "he" is not likely to be able to mate without being attacked by other males. But the film shows the small male changing color, thus now resembling a female, and edging closer to the larger male. Next, the image becomes a close-up of one of the larger male's eyes (which appears to be scrutinizing something – a second "female"?), followed by a downward angle shot of the "disguised" smaller male swimming around in front of the larger male, to the accompaniment of a light, jovial tune. The commentary here includes a series of vocabulary choices which connote a human perspective and cultural values, especially about sexual fidelity:

> *masters of deception; sneaky; disguise; he thinks his luck is in; another female to add to his conquests; sly, cross-dressing; holding his nerve; the sneak; she isn't choosy; surreptitiously mates with him right under the larger male's tentacles; masterful males; little sneaks; she'll have all the bases covered.*

The visual, musical, and lexical channels mutually reinforce this knowingly anthropomorphic sequence. However, presenters are more constrained by, and

viewers less likely to be aware of, the nature of those linguistic resources which fall nearer to the grammatical end of the lexical-grammatical system.

In each case, we start from a grammatical feature, but from a perspective which recognizes that the phenomenon we are interested in, namely the implied attribution of human-like capacities and behavior to nonhuman creatures, arises from interactions between lexis and grammar (e.g., Halliday 2004; Hunston and Francis 2000). Our approach thus illustrates something that has been demonstrated extensively by corpus analysis, which is that "the boundary between content and function words is fuzzy" (Stubbs 2004: 118). All the items we have selected for closer investigation are frequent words, and these, says Stubbs (2004: 118), "are frequent because they occur in frequent phrases. In these phrases, frequent words are often delexicalized, because meaning is dispersed across the whole phrase." For these reasons, our attention falls on that area "around the middle" of the grammar–lexis continuum, described by Halliday (2004: 45) as "rather large and fuzzy closed systems or . . . somewhat determinate and limited open sets."

Somewhere at the intersection between the lexical process of naming (in this case, creatures) and the grammatical resources that link lexical items into propositions is the pronoun system. Like some previous researchers, we noted the recurrence of switches between gendered and neuter pronouns in some of the episodes, and this was chosen as one focus for further analysis. Studies of the frequency and discoursal effects of pronoun choice include that by Gupta (2006: 107), who sees the selection of *who* rather than *which* as a marker of "a high level of sentience in a nonhuman animal," finding in her corpus analysis that *who* is typically used with "primates, and animals commonly used as companion animals," while "animals commonly used as food are more likely to be followed by *which*" (2006: 114). An analysis of the British National Corpus (Gilquin and Jacobs 2006) revealed various patterns in which the relative pronoun *who* may be used for a nonhuman animal, concluding that its use does not necessarily imply a positive representation. Use of the gendered pronouns usually confers greater individuality on to living creatures than the neuter *it*, and commentators have observed how such language choices in wildlife documentaries may invoke ideological aspects of human gender roles and sexuality (Chris 2006; Crowther 1999; Crowther and Leith 1995). Less extensively discussed in this context is generic *you*, although Myers and Lampropoulou (2012) report a wide range of uses for this apparently straightforward item in the genre of research interviews. Within the telling of narratives, according to Kitagawa and Lehrer (1990: 739), shifts to impersonal *you* tend to have a semantic–pragmatic function, occurring in the kind of "life drama episode that is potentially applicable to anyone at all" (1990: 750), "somewhat like 'Everyman' in a medieval morality play" (1990: 752). In this study,

as well as looking at gender pronouns and the *who/which* choices, we explore the use of *you* as a means of establishing empathy between commentator, audience, and the animals represented.

Close contact with the data also drew our attention to the way in which connections between sequences of behavior are often implied, though not stated explicitly, by the use of the connective *so*. Clauses with *so* "may be either resultative or purposive" (Toolan 1990: 242), and it is not always possible to determine which is intended. Similarly, "purposive clauses are often infinitival" (1990: 242; see also Schulte 2007: 512; Egan 2008), and it can be even more difficult to interpret events as either "consciously intended or arbitrary" (Toolan 1990: 242). We explored how purpose and intention are construed in our corpus by *so (that)* constructions, and by *to* infinitives.

Our study, then, explores in greater detail these features of the data. We aim to illuminate how they serve to "animate" the creatures depicted, and how they help the presenter to deal with the unresolved (and probably unresolvable) question of the extent to which the creatures' actions are prompted by thoughts, feelings, or intentions. In the next section, we describe the data in a little more detail, and then present the analytical methods we used to identify and explore these linguistic patterns.

6 Data and method

As mentioned above, the data comprises transcriptions of the spoken commentary to all ten of the 50-minute long episodes of the series *Life*, a total of just under 30,000 words. After the first, introductory episode, "Challenges of Life" (henceforth abbreviated to (*Ch*)), each of the others focuses on a different theme: "Reptiles and Amphibians" (*Re*), "Mammals" (*Ma*), "Fish" (*Fi*), "Birds" (*Bi*), "Insects" (*In*), "Hunters and Hunted" (*Hu*), "Creatures of the Deep" (*Cr*), "Plants" (*Pl*), and "Primates" (*Pr*). Although two of these (*Ch*) and (*Hu*) survey creatures of different kinds, the organization of the other episodes means that there is at least a loose correspondence between the episode and the kinds of species foregrounded in it. Once transcribed, the texts were converted to text-only format and collated into a digital corpus. The program WordSmith Tools (Scott 2008) was used for calculating the frequencies of individual items, for concordance analysis.

The pronouns investigated were: *he, him, himself, she, her* (as pronoun, not determiner), *herself, you, your, yourself, who,* and *which*. As the plural forms of both gendered and neuter pronouns, *they* and *them* were not included. With its high frequency with a wide range of referents beyond living things, *it* poses particular problems for analysis. A combination of the "local grammar" tool TextTool

(Mason 2012) and a sampling procedure facilitated the identification of some patterns in the use of *it* in this corpus. While basic quantifications generated some interesting results, we also found it necessary to look closely at the co-text of the target items. That is, we wanted to know not only which creatures warrant pronominal *s/he* rather than *it*, but also what kinds of things "she," "he," and "it" are reported as doing. Our analysis thus moves outward from the pronouns where it begins and includes the verbs of which these items are the subjects.

Since concordance programs alone are not readily able to discriminate between the many uses of either connective *so* or infinitive *to*, to analyze these we used the tagger QTag (Mason 2011) and TextTool (Mason 2012). These helped to isolate occurrences in the corpus of these items in the constructions of interest, removing, for example, *to* as preposition and *so* as intensifier, and highlighting the patterns "so [NP] + [VB] [+. . .]," such as "so he [mudskipper] digs himself a tunnel down into the mud", (*Fi*). Again, these instances were further explored to identify the patterns in which they occur.

The final stage of analysis was to review the various patterns – pronominal reference and implied intention (with *so* and *to*) – to see how they may cumulatively be involved in suggesting that the creatures so depicted are acting from desire and intention.

7 Results

7.1 Pronouns

Overall, quantitative results for the gendered pronouns are summarized below, although it should be noted that these to some extent reflect the distribution of types of species represented across the ten episodes. Nevertheless, there is a clear pattern which suggests a fairly predictable "cline" from the most animate mammals (including primates) to the least animate species, depicted in "Plants" (see Figure 1).

With so many instances of *he* (111) and *she* (215), some had to be filtered out. In order to explore, initially, the kinds of things that creatures personified with gendered pronouns are depicted as doing, we focused on clauses with positive polarity and no modality. So we excluded from this data subset instances of the following kinds: passives, where the pronominal subject is not the agent of the verb; negative constructions, since these report what the creature does *not* do (e.g., "Even if he [hippo] wants to he *can't* stay much longer", (*Ch*); "she [beetle] *doesn't* seem to be in the mood", (*In*)); modal and conditional constructions, including *needs to* and *has to*, since these often denote what the creature may –
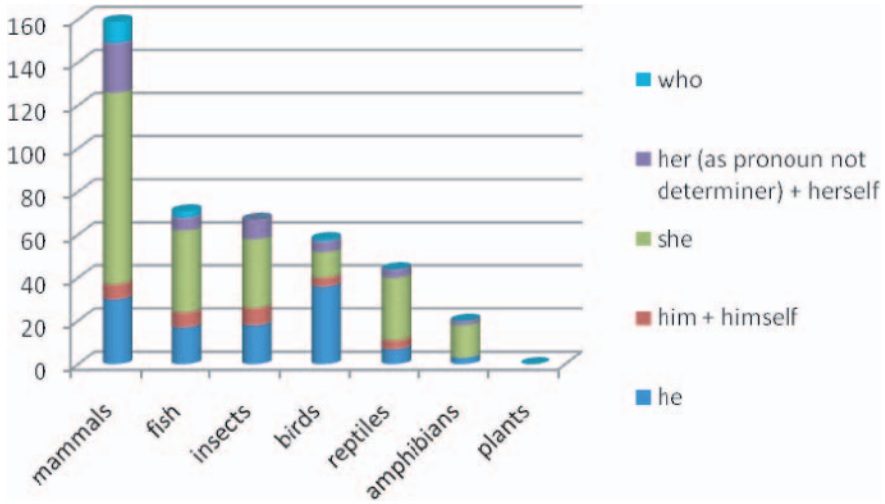
Fig. 1: Raw figures for pronouns by broad category of creature

but also may not – do (e.g., "Over the next two weeks, she [frog] *can* climb almost half a mile tending her young", (*Ch*); "With luck, she [cuttlefish] *will* now have a mix of offspring", (*Cr*); "if she [tiger] moves now", (*Hu*)). This excluded set contains material well worth further analysis, but we focus on the remaining data.

We classified these remaining clauses, where *he, she,* and *who* are the subjects, with reference to the actions denoted by the verbs. The creatures featured in these programs are typically, and presumably uncontentiously, depicted as doing the kinds of things which any observer of animal behavior would expect them to do: moving, eating, killing prey, and so on, and so we did not focus on these clauses further. Examples are: "He hunts ants", (*In*); "She lays an unfertilized egg", (*Ch*); "with her calf, she slowly moves towards it", (*Ch*). Likewise, relational clauses with link verbs denote neither animacy nor intention (e.g., "After her long and lonely vigil she [octopus] *is* dead", (*Fi*); "It seems he [lammergeier]'s too late", (*Bi*)). This filtering process left a remainder of 5 clauses with *who*, 17 with *he*, and 28 with *she*, in which there is more evidence of the kind of process which Halliday (2004: 260) identifies as "mental," where the active participant is a "senser" engaged in a process of "perception," "cognition," "desideration," or "emotion."

The patterns which emerge from these 50 clauses are summarized here. Results for *who* are included with those for *he* and *she*. These 50 clauses contain single instances of the following verbs: *CARE, DARE, DECIDE, ENCOURAGE, EXPLOIT, FIND, FOCUS, FOOL, GIVE, GUARD, INSPECT, INTRUDE, LET, MAKE, OBLIGE, OFFER,*

OUTWIT, PASS ON, RISK, SACRIFICE, SEARCH, SET, STRUGGLE, TEND, THINK, TIME, VET, WANT, WIN, and *WORK*. Some of these verbs invite comment. *GIVE*, for example, in its "core" sense, may seem not to belong in this subset, as creatures may readily be reported as "giving" such things as food to their young, with no anthropomorphic implications. In context, however, the abstract concept denoted by the object in this clause "the best chance she can" surely does encourage us to see the octopus as capable of evaluating options and taking decisions. Similarly *SET* can have a material sense (if a creature "sets" its catch on the ground, say), but this instance was "Here she [whale] sets her ambush, waiting for the seal to stray", where, again, the planning is implied as much by the object ("her ambush", including a gendered possessive) as by the verb.

The creatures which feature as the subjects of these clauses are diverse: baboon, bower bird, capuchin monkey, chameleon, cheetah, chimpanzee, clownfish, cuttlefish, damselfly, frog, garter snake, grebe, horned lizard, hummingbird, hyena, lammergeier, macaque, meerkat, mudskipper, octopus, penguin, polar bear, sea krait (snake), seal, sengi, stalk-eyed fly, whale. Some "sensory" verbs occur more than once in this subset of the data: *KNOW, LEARN, LOOK, SENSE,* and *WATCH* all occur twice; while *TAKE* occurs three times, in the following contexts: "she takes great care of" (octopus), "she's taking a risk" (polar bear), and "she takes risks" (hyena). The most frequent verb in this subset is *HAVE*, in its delexicalized sense, where the creature is not the subject of an explicitly human-like process, because the connotations of mental and emotional involvement come from the sequence of which *HAVE* is the "empty" verb. These eight examples are reproduced in full in Table 1.

Table 1: Mental process clauses with *HAVE* where *he, she,* or *who* is the subject

Creature	Clause/sentence	Episode
whale	Yet she has a plan	(*Hu*)
damselfly	But now, she has the problem of laying her fertilised eggs	(*In*)
sea krait (snake)	But now she has a problem	(*Re*)
sea krait (snake)	she has an extraordinary solution	(*Re*)
stalk-eyed fly	He now has the right to mate with all the females nearby	(*Ch*)
cuttlefish	he has another plan and it's sneaky	(*Cr*)
cuttlefish	in the end he has no choice but to fight	(*Cr*)
cuttlefish	he's got a problem	(*Cr*)

It was found that, where *which* refers to creatures in this data, it is in their generic capacity ("those animals which have young"; "the mammal which dominates this landscape"), or where the creature in question is being depicted as prey from

the perspective of a predator ("they hunt deer, which they ambush"; "the victim, a fly, which finds the color and nectar irresistible"). Thus, *which* has the expected function, compared with *who*, of distancing the audience from the creature to which it refers (though cf. Gupta [2006: 119], who notes that, when humans talk about hunting, "personalizing an animal does not preclude hunting [it] and is not necessary for its defence"). *It*, as explained above, can have a very wide range of referents. However, it seems reasonable to assume an even distribution across all the episodes of "false hits" (in constructions such as "it's the dry season"; *it* referring to entities such as inanimate objects in the environment, "he drops it"). Any differences in the raw frequencies found in each episode should then be accounted for by the choice of gendered or neuter pronouns to refer to living things. And indeed it was found that *it* occurred most often in the program on plants, and nearly as often in "Reptiles and Amphibians," with "Birds," "Primates," and "Mammals" having the fewest instances (see Figure 2).
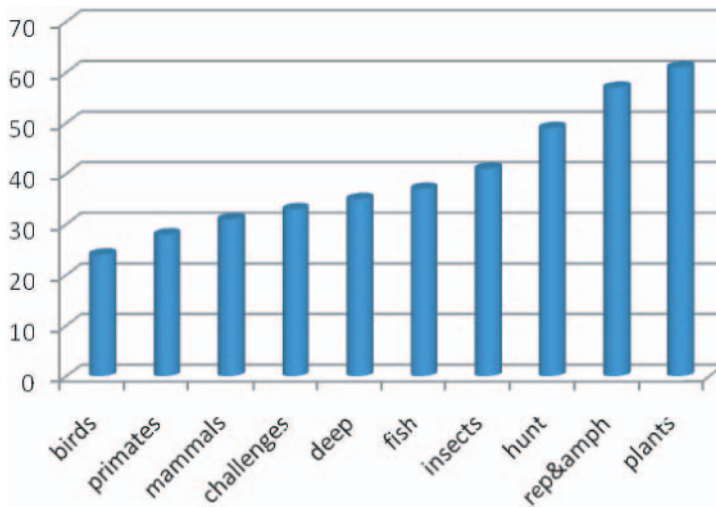

Fig. 2: Raw figures for *IT* by episode

Like *which*, *it* is also chosen for generic reference, as in "Our planet may be home to 30 million different kinds of animals and plants, each individual locked in *its* own lifelong fight for survival". Where the sex of a creature cannot be determined, *it* may be unavoidable, and this is more often the case with insects, fish, and reptiles than with birds and mammals. Examples include:

(1) *It* [chameleon] creeps towards *its* victim until just in range (*Ch*)

(2) *Its* [jelly fish] weapons are harpoon-like cells that cover *its* tentacles (*Cr*)

(3) As *it* feeds, the shrimp gets protection and a free ride. (*Cr*)

The verbs of which *it* is the subject are more restricted than those found with *he* and *she*, and tend to denote moving, eating, attacking others, or defending oneself. There is one instance of "it decides", in a passage where the main perspective is that of a mammal, a squirrel, whose behavior when threatened "intimidates the snake":

(4) It [the snake] decides to retreat. The mother decides that this part of the neighborhood is too dangerous and moves her young to new quarters. With luck, this may be a safer place to raise a family. (*Hu*)

One interpretation here is that it is the squirrel who perceives the predatory snake as "deciding" to retreat, as the mini-narrative encourages the audience to empathize with the squirrel's situation.

    Another oblique means of aligning human and animal perspectives is through the use of the second-person pronouns, which, according to Kitagawa and Lehrer (1990: 752), can have the effect of "letting the hearer into the speaker's world view, implying that the hearer also shares the same perspective." In this corpus, there are 32 occurrences of *you*, *yourself,* and *your* combined, of which just 7 denote "you, the viewer" or "you" as human "one." Examples of these include "This is the last place you might expect to find marine life"; "Everywhere you look, there are extraordinary examples". The remainder have the pragmatic effect of inviting the audience to identify with a creature, or species, and its context. It is in these constructions that another subtle linguistic means of bridging the gap between human observer (narrator and audience) and nonhuman observed is deployed. Again, the processes in which the creatures are engaged are often presented as matters of choice, obligation, or judgment, while avoiding any explicit claim to know how the creature perceives its world. Occurrences tend to cluster together within passages of text, to maintain grammatical cohesion. Examples include:

(5) The trouble is that exposing *yourself* inevitably makes *you* easily seen (lizard; (*Re*))

(6) If *you* rely on the tides to expose *your* food, *you* have to work to fairly tight schedules . . . (baboon; (*Pr*))

(7)   Timing is an essential skill if *you*'re to harvest all the food that becomes available at one time or another around a coast (baboon; (*Pr*))

(8)   *You* should never run from what *you* can't see. *You* might just run straight into danger (deer; (*Hu*))

(9)   The technique is to reach over *your* opponent's head and hook *your* jaws under his wing cover (beetle; (*In*))

(10) Looking after *your* eggs is an even greater challenge (snake; (*Re*))

(11) It's easier to steal than find fruit for *yourself* (red bug; (*In*))

(12) Having the widest eye span puts *you* at the top of the pecking order (fly; *(Ch)*)

In summary, we suggest that the grammatical category of pronouns has a part to play in the "humanizing" of creatures in these texts. This occurs where the choice of gendered pronoun encourages an individualized, active, and "socially" contextualized portrayal of a creature. The effect is intensified by the interaction of the pronouns with verbs denoting evaluations, choices, and plans. Where the gendered creature is the subject of a delexicalized verb, such as TAKE or HAVE, the human-like processes of managing risks, problems, choices, and plans can be invoked more indirectly, as they can be by the use of second-person pronouns (and the determiner *your*), which also encourage a cognitive and affective identification by the audience with the creature in focus.

7.2 The role of *so* and *to*

In the analyses reported above, negative constructions were excluded, but it could be argued that such choices have a part to play in constructing a linguistic "picture" of these creatures and their potential. When we hear what a creature "doesn't" do, then possibilities are invoked, even if these remain unrealized (see Sealey and Oakley 2013). For example:

(13) This 11-year-old female has an anvil but *can't find* a hammer (*Pr*)

(14) The mother *doesn't know* that her hungry young are now leaving their nest in search of a better provider (*In*)

Such statements seem to come from a stance somewhere between that of the human observer and the nonhuman observed creature. While not explicitly attributing intention or understanding to the creatures, neither do they rule these out.

A similar illocutionary force applies to the use of *so*. It functions to connect two items, often in one of the many mini-narratives found in these texts. Typically, there is a circumstance or event (I) followed by an action on the part of a creature (II); in such cases, *so* may suggest a purposive response while not explicitly crediting the creature with the capacity of decision making. There is a very subtle shading of meaning in these instances, where, at one extreme, (II) is an almost inevitable outcome of (I). For example:

(15) [Flowers are rare in this desert] (I), so [colonies of those bees are few and far between] (II). (*In*)

(16) [It rains almost every day] (I), so [this six-year-old has already had plenty of practice] (II). (*Pr*)

In these examples, (II) is consequent on (I) and *so* merely acts as a descriptive link. Other examples are more ambiguous, however, and active intention on the part of the creature, while not explicitly encoded, seems to be more clearly implied:

(17) They could never find it by themselves, so their mother collects it for them (*In*)

(18) This is her first and only brood and so she takes great care of them (*Ch*)

(19) This new one [young meerkat] is a beginner, so he [adult meerkat] starts with something easy, how to dig for insect larvae (*Ma*)

(20) Now the fish find that they are under attack, and so group together for safety (*Cr*)

Processes occur in a sequence; linked by *so*, the suggestion of intentions and choices may inflect the narrative, and this applies as well to infinitives. There is a wide range of constructions that include *to* + infinitive, and we do not deal here with [*BE going* + to + inf], used routinely to denote the future, nor with chained verbs, such as [*START* + to + inf], where the role of the infinitive in the sequence is primarily temporal.

In the following examples, the infinitive clause is somewhat loosely connected to the preceding one. Labels for the surface structure would be [CLAUSE + to + inf] and [to + inf {+ other elements} + CLAUSE]. Such structures can convey choice and

intention quite forcefully, while avoiding crossing over into more explicit anthropomorphism. They include:

(21) He [capuchin] taps them *to see* if they're ready. (*Ch*)

(22) the squid flash red and white not only *to confuse* their prey, but also *to signal* to each other when they are about to attack (*Cr*)

(23) *To complete* his disguise he changes color *to appear* even more like a female (*Cr*)

(24) This is the only time she [octopus] will reproduce and *to give* her young their best chance, she sacrifices her life. (*Cr*)

(25) Plants must have light *in order to grow* and will do anything *to get* as much as they need. (*Pl*)

And in a sentence such as the following, both [*BE* + to + inf] and [CLAUSE + to + inf] are combined, implying, though not stating explicitly, both an affective state and a purposive action:

(26) *Her last act of devotion* is to blow water over the eggs *to help* them hatch (*Ch*)

As can be seen, then, it is not only the more "advanced" species which can be represented as animate – and even intentional – through the deployment of this linguistic resource.

Often, as here, the audience is "introduced" to an individual representative of its kind, one which becomes the protagonist in a narrative about survival – searching for food or water, avoiding predators or rivals, securing a mate, giving birth, rearing offspring. Within such sequences, the protagonist may be described using several of the linguistic strategies identified by our analysis. Even a relatively "primitive" creature, such as a Japanese red bug, can be depicted using several of the strategies we have identified, as shown in Figure 3.

8 Conclusion

As noted above, there is a growing body of work which draws attention to the way that language, not only lexically but also grammatically, both enables and constrains communication about animal behavior. Rich as it is in synonyms, the

They <u>could never</u> find it by themselves, <u>so</u> their mother collects it for them.

She probes every fruit <u>she</u> finds <u>to test</u> its ripeness, and *rejects* one after another.

This can take hours. *At last*, a *perfect* fruit. A *thief*!

It's *easier* <u>to steal</u> than <u>find</u> fruit for <u>yourself</u>.

For both bugs, the outcome of this *dispute* <u>will be</u> life-changing.

As the mother struggles to keep <u>her</u> *prize*, <u>her</u> young, back in the nest, are growing restless.

The *thief* has won.

The mother <u>doesn't</u> *know* that <u>her</u> hungry young are now leaving their nest *in search of* a better provider.

<u>She</u> returns <u>to find</u> that <u>her</u> nest is empty.

Fig. 3: Marked-up passage from *Insects* highlighting examples of the various features presented in our analysis; <u>single underline</u>: gendered/2nd-person pronouns or determiners; <u>double underline</u>: *so* connective; <u>broken underline</u>: *to* + inf.; <u>wavy underline</u>: modals, negatives, conditionals; *italics:* other lexical choices denoting a human-like perspective

English language offers the wildlife broadcaster a wide range of options as s/he uses commentary to mediate between the television viewer and denizens of "the natural world." It is well established that these choices cannot be neutral, and that they will inevitably carry cultural and even ideological connotations.

An anonymous reviewer of an earlier version of this article asks "Can discourse analysis tell us how animals *should* be represented?" We don't claim to answer such a far-reaching query here, proposing rather that discourse analysts, broadcasters, ethologists, and audiences need to debate such questions and negotiate the answers. However, discourse analysis, which has revealed presuppositions and assumptions about so many aspects of the social world, can at least expose the difficulties associated with representing perspectives on experience other than those with which we, as human beings, are endowed. The problem in describing creatures' behavior may be less anthropomorphism – as we are pulled toward encoding the behavior of fish, birds, insects, and even plants as though what they are doing is what we would do, to be described in largely the same terms – and more the limitations of anthropocentrism. "If a lion could speak, we could not understand him," says Wittgenstein (1958: 223), and we probably cannot hope to know what kinds of motivation, perception, and intention are associated with the observable behavior of the creatures featured in *Life*. Not only the lexical, but also the grammatical resources available to us inevitably construe

our experience in particular ways, and these derive from our own means of knowing and experiencing the world, which is from a human perspective.

Nevertheless, an engagement with the issues we raise here obliges us to focus on the "lens" of linguistic construal, thus drawing attention to the "empathy hierarchy" (Langacker 1991) from which we habitually perceive the world and our fellow creatures. Recognizing – and even exploring ways of overcoming – the limitations of our human perceptions is surely a goal worth pursuing. Yet, if there is a mismatch between what these creatures experience and how we describe it, perhaps this is because ultimately language itself cannot be disconnected from the species responsible for it – us.

Acknowledgments

References

Allen, Colin & Marc D. Hauser. 1991. Concept attribution in nonhuman animals: Theoretical and methodological problems in ascribing complex mental processes. *Philosophy of Science* 58(2). 221–240.

Asquith, Pamela J. 2011. Of bonds and boundaries: What is the modern role of anthropomorphism in primatological studies? *American Journal of Primatology* 73(3). 238–244.

Attenborough, David. 1982. Introduction. In Peter Bale (ed.), *Wild life through the camera*, London: Crown.

Bekoff, Marc. 2003. *Minding animals: Awareness, emotions, and heart*. Oxford: Oxford University Press.

Boakes, Robert. 2001. Images of animals: Anthropomorphism and animal mind (Review). *Journal of the History of the Behavioral Sciences* 37. 396–398.

Bousé, Derek. 2000. *Wildlife films*. Philadelphia: University of Pennsylvania Press.

Bousé, Derek. 2003. False intimacy: close-ups and viewer involvement in wildlife films. *Visual Studies* 18(2). 123–132.

Chris, Cynthia. 2006. *Watching wildlife*. Minneapolis: University of Minnesota Press.

Crowther, Barbara. 1999. The birds and the bees: Narratives of sexuality in television natural history programs. In Debbie Epstein & James T. Sears (eds.), *A dangerous knowing: Sexuality, pedagogy and popular culture*, 43–58. London: Continuum.

Crowther, Barbara & Dick Leith. 1995. Feminism, language and the rhetoric of television wildlife programmes. In Sara Mills (ed.), *Language and gender: Interdisciplinary perspectives*, 207–225. Harlow: Longman.

Davidse, Kristin. 1992. Transitivity/ergativity: The Janus-headed grammar of actions and events. In Martin Davies & Louise Ravelli (eds.), *Advances in systemic linguistics: Recent theory and practice,* 105–166. London: Pinter.

Dingwall, Robert & Meryl Aldridge. 2006. Television wildlife programming as a source of popular scientific information: A case study of evolution. *Public Understanding of Science* 15. 131–152.

Dunayer, Joan. 2003. English and speciesism. *English Today* 19(1). 61–62.

Egan, Thomas. 2008. *Non-finite complementation: A usage-based study of infinitive and -ing clauses in English*. Amsterdam & New York: Rodopi.

Elliot, Nils L. 2001. Signs of anthropomorphism: The case of natural history television documentaries. *Social Semiotics* 11(3). 289–305.

Gilquin, Gaëtanelle and Jacobs, George M. 2006. Elephants who marry mice are very unusual: the use of the relative pronoun who with nonhuman animals. *Society & Animals* 14(1). 79–105.

Goatly, Andrew. 2002. The representation of nature on the BBC World Service. *Text* 22(1). 1–27.

Goatly, Andrew. 2006. Humans, animals, and metaphors. *Society & Animals* 14(1). 15–37.

Griffin, Donald R. 2001. *Animal minds: Beyond cognition to consciousness*. Chicago: University of Chicago Press.

Gupta, Andrea F. 2006. Foxes, hounds, and horses: Who or which? *Society & Animals* 14(1). 107–128.

Halliday, Michael A. K. 2004. *An introduction to functional grammar*, 3rd edn. London: Arnold.

Horak, Jan-Christopher. 2006. Wildlife documentaries: From classical forms to reality TV. *Film History: An International Journal* 18(4). 459–475.

Hunston, Susan & Gill Francis. 2000. *Pattern grammar: A corpus-driven approach to the lexical grammar of English*. Amsterdam & Philadelphia: John Benjamins.

Jacobs, George M. and Stibbe, Arran. 2006. Guest editors' introduction: animals and language. *Society & Animals* 14(1). 1–7.

Keeton, William T. 1967. *Biological science*. New York: W.W. Norton.

Kemmerer, Lisa A. 2006. Verbal activism: "Anymal". *Society & Animals* 14(1). 9–14.

Kennedy, John S. 1992. *The new anthropomorphism*. Cambridge: Cambridge University Press.

Keulartz, Jozef & Cor van der Weele. 2008. Framing and reframing in invasion biology. *Configurations* 16(1). 93–115.

Kimler, William C. 2000. Reading Morgan's canon: Reduction and unification in the forging of a science of the mind. *American Zoologist* 40(6). 853–861.

King, Margaret J. 1996. The audience in the wilderness: The Disney nature films. *Journal of Popular Film and Television* 24(2). 60–68.

Kitagawa, Chisato & Adrienne Lehrer. 1990. Impersonal uses of personal pronouns. *Journal of Pragmatics* 14. 739–759.

Langacker, Ronald W. 1991. *Foundations of cognitive grammar*. *Vol. II Descriptive application*. Stanford, CA: Stanford University Press.

Léon, Bienvenido. 2005. Science communication techniques in television documentaries: A study of the work of David Attenborough. In Nigel Sanitt (ed.), *Motivating science: Science communication from a philosophical, educational and cultural perspective*, 13–28. Luton: Pantaneto Press.

Lucy, John. 1992. *Grammatical categories and cognition: A case study of the linguistic relativity hypothesis*. Cambridge: Cambridge University Press.

Mason, Oliver. 2011. QTag. Birmingham. http://phrasys.net/uob/om/software (accessed 15 February 2012).

Mason, Oliver. 2012. TextTool. Under development.

Myers, Greg & Sofia Lampropoulou. 2012. Impersonal *you* and stance-taking in social research interviews. *Journal of Pragmatics* 44(10). 1206–1218.

Schulte, Kim. 2007. What causes adverbial infinitives to spread? Evidence from romance. *Language Sciences* 29(4). 512–537.

Scott, Mike. 2008. *WordSmith tools*. Liverpool: Lexical Analysis Software.

Sealey, Alison and Oakley, Lee. 2013. Why did the Canada goose cross the sea? Accounting for the behaviour of wildlife in the documentary series *Life*. *International Journal of Applied Linguistics*. Online early access DOI: 10.1111/ijal.12007.

Siegel, Sarita. 2005. Reflections on anthropomorphism in *The Disenchanted Forest*. In Lorraine Daston & Gregg Mitman (eds.), *Thinking with animals: New perspectives on anthropomorphism*, 196–222. New York: Columbia University Press.

Sober, Elliott. 2005. Comparative psychology meets evolutionary biology. In Lorraine Daston & Gregg Mitman (eds.), *Thinking with animals: New perspectives on anthropomorphism*, 85–99. New York: Columbia University Press.

Stibbe, Arran. 2001. Language, power and the social construction of animals. *Society & Animals* 9. 145–161.

Stibbe, Arran. 2003. As charming as a pig: The discursive construction of the relationship between pigs and humans. *Society & Animals* 11(4). 375–392.

Stubbs, Michael. 2004. Language corpora. In Alan Davies & Catherine Elder (eds.), *The handbook of applied linguistics*, 106–132. Oxford: Blackwell.

Tinbergen, Niko. 1963. On aims and methods of ethology. *Zeitschrift für Tierpsychologie* 20. 410–433.

Tolman, Edward C. 1935. Psychology versus immediate experience. *Philosophy of Science* 2(3). 356–380.

Toolan, Michael. 1990. *The stylistics of fiction: A literary-linguistic approach*. London: Routledge.

Watson, John B. 1913. Psychology as the behaviorist views it. *Psychology and Behavior* 20(2). 158–177.

Wierzbicka, Anna. 1996. *Semantics: Primes and universals*. Oxford: Oxford University Press.

Wierzbicka, Anna. 2004. Conceptual primes in human languages and their analogues in animal communication and cognition. *Language Sciences* 26(5). 413–441.

Wittgenstein, Ludwig. 1958. *Philosophical investigations*. New York: Macmillan.

Wynne, Clive D. L. 2007. What are animals? Why anthropomorphism is still not a scientific approach to behavior. *Comparative Cognition and Behavior Reviews* 2. 125–135.

Yamamoto, Mutsumi. 1999. *Animacy and reference: A cognitive approach to corpus linguistics*. Amsterdam & Philadelphia: John Benjamins.

Yamamoto, Mutsumi. 2006. *Agency and impersonality: Their linguistic and cultural manifestations*. Amsterdam & Philadelphia: John Benjamins.

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