



# **Portrayal of animal communication in wildlife documentary**

*Framställning av kommunikation i dokumentär om vilda djur*

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## **Portrayal of animal communication in wildlife documentary**

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## **1. ABSTRACT**

Many people turn to documentaries for knowledge about animals, but do documentaries give us a truthful portrayal of animals and their behavior? This study looks at how the communication behavior of the portrayed animals is depicted in three episodes of *The Life of Mammals*. These episodes were observed after which the contents were compared to scientific literature on the same topics. The results show that quite little communication is actually shown in the episodes about plant predators and meat eaters and relatively much of it is shown in the episode named *Social Climbers*, involving primates. The matching literature suggests that based on the narrative and the accompanying footage, the viewer is getting a realistic picture, with the exception of a few questionable cases.

## 2. SAMMANFATTNING

Många vänder sig till dokumentärer för att lära sig om djur, men ger dokumentärer en sanningsenlig bild av djuren och deras beteenden? Detta arbete tittar på hur djurs kommunikation framställs i tre avsnitt av dokumentärserien The Life of Mammals. Efter att avsnitten observerats jämfördes innehållet med vetenskaplig litteratur om samma ämne. Resultaten visar att tämligen lite kommunikation visas i avsnitten om växt- och köttätare och att relativt mycket visas i avsnittet om apor. Den matchande litteraturen pekar på att baserat på berättandet och de åtföljande bilderna får tittaren med några tvivelaktiga undantag en realistisk bild av djurens kommunikation.

### 3. INTRODUCTION

Many people gather knowledge about animals from wildlife documentaries, but do they give us a truthful portrayal of animals and their behavior? They need to generate money, and to do so, must be appealing to the public. If a documentary is to be watched during the free hours of a person, it cannot solely be educational, it must have some entertainment value. Even the biggest of animal lovers will probably give up after the 5th hour of watching a lion pride sleep. Unfortunately this means that a documentary, though well meaning, can easily turn misleading. They say "Seeing is believing", and that is why wildlife documentary makers should be careful with what they show.

People not understanding or knowing about natural behavior in wild animals can become a problem if these people have pets or farm animals that stem from these wild animals around them and they do not understand their behavior. Or if they wrongly think they do understand it.

As documentaries are a big source of information for "normal people" when it comes to pets and their ancestors, it is the chosen medium of focus in this paper. This is a big topic however and I have chosen to mostly look at communication, as that is obviously important in animals and humans learning to understand each other.

The documentary I have watched – *The Life of Mammals* – is one of the most watched in its field (see Method). I am aware, though, that its aim is not to show only communicative behavior in animals, and I will not treat it as such.

#### **4. AIM**

My aim is to study the way communicative behavior is shown in three episodes of *The Life of Mammals*. I want to examine the pros and cons associated with documentaries, focusing on animal communication. I feel this medium needs to be discussed more and that there is room for improvement. Without discussion and without looking at science, the path to improvement becomes rocky and difficult to tread. The questions I want to find an answer to are:

- What communication behavior is filmed? (What is brought up?)
- Are we getting a realistic picture of animals' communicational behavior in these three episodes of *The Life of Mammals*?

This study targets animal documentary producers, crew members and other researchers who might take this topic further. Moreover, anyone else that has contact with animals or needs to be conscious of animal communication for any other reason.

## 5. MATERIAL AND METHOD

After having watched several different wildlife documentaries, considering which ones to choose for analysis and what type of behavior to focus on, I finally chose to look at animal communication in three 45-minute episodes of the series *The Life of Mammals* (BBC). This selection I based upon its viewer ratings on Internet Movie Database (2011). *The Life of Mammals* was the highest rated documentary series there, with relevance to my thesis, based on 614 votes. Also, having one of the biggest stars in the field, Sir David Attenborough, present and narrate the series in English and being a BBC production and thus spread across the world, this is a documentary I can be certain has and will be seen by many people. As my time on this project is limited, I chose three episodes from this 10-part series to analyze and use as examples; *Plant Predators*, *Meat Eaters* and *Social Climbers*. I chose the *Plant Predators* episode because grazers are a big part of most societies in form of agriculture as well as sport and company to lonely souls. The episode on *Meat Eaters* I selected because cats and dogs are a common sight in many households and this episode is in large divided into two groups; cats and dogs. Lastly I chose the episode of *Social Climbers* because there is a worrying trend in private people choosing monkeys for pets, though perhaps mostly in the United States. Examples showing this is the website of *Primate Store* (2011) where you can order a pet monkey or read stories people can send in about their pet monkeys, and the many articles covering people being bitten by their pet monkeys (High Beam, 2006; KPHO, 2010).

I only took in regard things that Sir David Attenborough talked about in the episode. If for example, two monkeys appeared to be communicating vocally, but Sir Attenborough did not say anything about it, then I did not write it down.

What falls under my specification of communication in this case:

- Messages that are actively left by an animal. For example, the swelled-up bottom of a sexually active baboon does not fit in here, as this is inadvertent – the female baboon does not *make* her bottom swell up.
- Scents left as messages
- Vocalizations
- Body language

As the BBC was not aware of my specifications at the time of production of *The Life of Mammals*, there were parts that fell within a grey zone for me. In the end, it was a judgment call from case to case and I made my decisions based on what seemed the most consequent and logical to me. When narration was made that fit into my thesis, I wrote down the exact words of the narrator, the animal concerned (as specifically as they are mentioned in the film), and wrote the behavior portrayed only if I felt it was needed to get the narrative into context.

In searching for articles, I used key words that I derived from the tables I composed in my results. If references could not be found, I simply left them out.

## 6. RESULTS

Showing what was shown, the narration, and if found, corresponding literature.

### 6.1. Episode 3: Plant predators

8 minutes, 33 seconds into the episode: Pikas on cliffs. Pika call: a long series of short, high pitched squeals with equally long breaks in between every squeal.

*“That’s a warning call, telling other pikas that this patch is now taken.”*

The literature says the call of the pika (*Ochotona princeps*) serves as an anti-predator alarm as well as a territory defense (Somers 1973, Ivins and Smith 1983, Conner 1985). Hayes and Huntly (2005), describe the alarm call of pikas as “short calls” consisting of 1 or 2 notes, commonly voiced in a series.

14 minutes, 11 seconds in: Elephants mining for salt in a deep, pitch black cave.

*“Now, this deep rumble, this resonating noise that’s coming, that’s probably a signal to others who are waiting outside the cave because he’s by himself at the moment“*, referring to elephant in dark cave.

*“Maybe the male’s rumbles were messages to say that all is safe”*, as the other elephants join him.

Holdø et al. (2002) found that more than once, both female and male elephants (*Loxodonta africana*) were prevented from entering an excavation by a larger, dominant bull. On these occasions the lower ranked elephants might wait for hours, until the dominant bull left the site.

32 minutes, 19 seconds in: Different animals alarming their groups.

*“Sound the alarms!”*

In their study, Krams et al. (2010) show that the presence of predation can directly affect cooperation. Alarm calling and other strategies are used by prey animals as communal defense and keeps predators at bay (Flasskamp, 1994).

38 minutes, 34 seconds in: Bull bison.

*“Pumped up with testosterone, they pour the ground to show off their strength.”* Bull bison dragging their feet along the ground and urinating. *“They spray the earth with their urine and then roll in it so that they reek of their own hormones.”*

*“This combination of rolling and roaring is a clear sign that there will be a fight.”*

In 1998, Bowyer et al. states that wallowing is included in bison (*Bison bison*) scent marking behaviors. Scent marking in bull bison coincides with mating, but although the behavior is more frequent in sexual contexts, it occurs in male-male situations as well as female-male ones (Bowyer et al., 2007). In that same study, Bowyer et al. found that occurrence of sexual behavior was greater in the company of wallowing than without wallowing.

## 6.2. Episode 5: Meat eaters

15 minutes, 30 seconds into the episode: Hyenas.

*“All dogs communicate by smell, but none do so more eloquently than hyenas. Their scent come from a pouch beneath their tail and proclaims who they are and how they are. They also use scent to post notices around their territory. An individual will put one up every quarter of a mile or so.” “And this is one of their message posts.”* David Attenborough points to tall straw of grass.

*“The smear at the top there comes from the anal gland, of one of the hyena family. And that smell fades very rapidly, and is a message to other members of the group, saying ‘I was here half an hour ago’, or ‘ - quarter of an hour ago, so there’s no point in searching this patch for food. But beneath it is a second one which was milky white when it was first pasted on. Its smell is long lasting and it’s intended to be a message to other clans of hyenas saying ‘Keep out, this land is ours’ ”.*

Mills and Gorman (1987) state that all hyenas mark their territories, amongst other things by smearing scented paste on grass stems.

23 minutes, 05 seconds in: Hyena pups squeaking/squealing as adults return bloody from hunt.

*“They beg for food by frantically licking the mouths of the adults.”*

25 minutes, 45 seconds in: Wolves.

*“If animals are to work in a team, they need to be able to communicate with one another. Sometimes it’s possible for you to communicate with them.”* Dave howls and a number of wolves do too.

*“Wolves howl to warn neighboring packs to keep their distance. But they also do so to reunite their own pack if it’s got scattered after a long hunt.”*

Palacios et al. (2007) suggests that Iberian wolves (*Canis lupus signatus*) can identify individuals by the howl. Harrington (1989) proposes the initial chorus howl of several wolves (*Canis lupus*) communicates the identity of an individual or a pack. In 2007, Nowak et al. conducted a study on howling activity in free-ranging wolves (*Canis lupus*) and found that howling was communication between individuals from the same pack, either separated temporarily, after a reunion or before a hunt. These wolves responded to human howling, but only between June and September. This shows that the wolves willingly announced their presence to a stranger (Nowak et al., 2007), at least some of the time.

31 minutes, 27 seconds in: Night vision camera shows David in the dark in a Jeep, with lions lying very close by.

*“Lions hardly ever roar during the day, it’s very much a night time thing. And now in the darkness, there are a number of them roaring...”*

*“Three of them belong to the same pride and they are communicating, telling one another where they are.”* The lions make rumbling noises. *“Those are not aggressive roars, they are communication roars. But they are quite enough to chill the blood in the blackness of the night.”*

The literature says lion roars function as a means to strengthen the bond between members of a pride, stay in contact, threaten rivals and sometimes attracting mates (Funston, 1999; Grinnell et al., 1995; Grinnell and McComb, 1996; McComb et al., 1994; Schaller, 1972). Lions (*Panthera leo*) also use roaring to advertise their territory and can tell the strength of the competition by how many roars they hear (McComb et al., 1994). These vocalizations occur mainly at night, as this is when lions are the most active (Schaller, 1972).

### 6.3. Episode 9: The social climbers-primates.

14 minutes, 35 seconds into the episode: Rivaling groups of pygmy marmosets, fighting over an edible gum producing tree. They screech continuously.

*“While the invaders steal the gum, the displaced residents start scent marking in the trees nearby. This seems to reinforce the bonds between them and stiffen their resolved minds to counterattack.”* Pygmy marmoset war.

*“It works. The home team are back on their tree.”*

17 minutes, 14 seconds in: Tamarins: mother with twins, two maybe-fathers. Mother sticks out tongue.

*“But she has two male partners, and she uses her tongue to signal that it’s time that one of them took over the twins.”* They respond with squeaks after which they come running and relieve her.

According to Ziegler et al. (2004), male tamarins (*Saguinus oedipus*) respond in behavior to females during their receptive period, and this occurs when the fathers provide the most parental care. Geiss & Schrader (1996) found that infants of the species common marmoset (*Callithrix jacchus*), closely related to tamarins, gave calls that were shortly followed by parental care.

19 minutes, 23 seconds in: Two species travelling together: Emperor tamarin and saddleback tamarin. *“They have a common enemy. They give alarm calls that both species understand.”*

Windfelder (2001) conducted a study in which the results show that saddle-back tamarins (*Saguinus fuscicollis*) respond to calls from both conspecifics and other species of tamarins that they associate with.

23 minutes, 25 seconds in: Howler monkeys lying in trees.

*“...howlers can’t afford to waste energy chasing away rivals from the tree tops – they use a rather more labor-saving way of doing that.”* The howler monkeys howl.

*“Howlers have a specially enlarged bone in the throat – a hyoid – that enables them to make this extraordinary song. It’s one of the loudest noises made by any animal. And the whole family joins in, almost every evening. They can work themselves up into quite a frenzy. But since neither they nor their rivals actually move anywhere, it’s very hard to say who’s winning. It may be that this howling serves to strengthen family solidarity and deter intruders.”*

A study shows male howler monkeys (*Alouatta palliata*) appear to structure their social relationships by means of vocal communication and that these same-sex agonistic interactions never get overtly violent (Wang & Milton, 2003). The few times male howler

monkeys quarreled in the study of Wang & Milton, it was mainly with females and in these instances the males always won.

26 minutes, 40 seconds in: Pictures of a leopard, an eagle, and monkeys in trees.

*“I’m travelling with one of the most extraordinary anti-predator alliances in the world. Around me is a troop of sooty mangabeys and mongooses. They are keeping an eye out for danger on the ground. And in the branches above me, there are at least five or six other species of monkey, all ready to detect a threat from the sky, or from within the canopy.”*

*“Visibility is so poor here that the monkeys communicate almost entirely by sound. Unlike visual signs, a sound reaches every monkey in a split second. It’s by far the best means of staying in contact or warning of danger.” “Crowned eagles are never far away here, but if one comes too close, a specific alarm will be sounded, telling monkeys to drop for cover instantly. ‘DANGER ABOVE!’ Monkeys plummet down without even looking up. The alliance has saved another member. All these monkeys have different alarm calls for different predators. Watch this.”* Dave pulls out a fake leopard into sight of the monkeys and they call out.

*“That’s the leopard alarm call of the diana monkey. And that totally different one is the spot nose. But the important point is that all species of monkey in the alliance recognize one another’s call and know the nature of the enemy. That’s important because each predator requires its own particular response.”*

Long-distance calls are a common means of communication among primates (Oliveira & Ades, 2004) and these calls are often understood intraspecifically (Windfelder, 2001). Emperor tamarins (*Saguinus imperator*), saddle-back tamarins, red-bellied tamarins, (*S. labiatus*), mustached tamarins, (*S. mystax*) and black-mantle tamarins (*S. nigricollis*) have been known to form heterospecific associations (Peres 1996).

In Tai Forest on the Ivory Coast, monkeys frequently interact with crowned eagles (*Stephanoaetus coronatus*) and leopards (*Panthera pardus*) (Stephan & Zuberbühler, 2008). Schel & Zuberbühler (2009) conducted an experiment with wild Guereza monkeys (*Colobus guereza*) habitant of an area where leopards are extinct. Despite not being familiar with leopards, these monkeys had appropriate warning calls for when they were introduced to leopards, uniform to the calls Guerezas in a neighboring, leopard populated area produced. In their study, Papworth et al. (2008), saw that the blue monkeys (*Cercopithecus mitis stuhlmanni*) in Budongo Forest in Uganda produce “hacking” alarm calls for crowned eagles and “pyow” ones for leopards and other dangers.

33 minutes, 42 seconds in: Mating season, macaques gathering in ancient ruins.

*“Toque macaques try to attract one another’s attention by fluttering their mauve eyelids and flashing their teeth.”*

46 minutes, 27 seconds in: Gelada folding up its upper lip, showing its teeth.

*“A lip flip from one of the bachelors is a threat. Flip answers flip – there’s gonna be trouble.”* Geladas in a very large group on a grassy hill, making much noise. A closer shot shows them shuffling around eating grass by plucking it with their hands and then eating it. *“Eating grass is very time consuming. And also occupies your hands, which makes it very hard to find enough time for grooming. So geladas maintain their friendships in another way; they chatter to one another.”* Geladas chattering, sounding nearly human. *“These noises are in effect ‘vocal grooming’ and enable geladas to communicate with many*

*individuals at the same time. And this is the secret of their ability to live in huge groups. Their chatter sounds like a language, but we have no idea what sort of information they are exchanging.”*

Geladas (*Theropithecus gelada*) have a rhythm and melody in their vocal communication that is similar to the rhythm and melody in human speech (Richman, 1987). They use these vocalizations for a wide range of social interactions, such as resolving emotional conflicts, as they approach or pass one another, the start and end of social grooming, or asking for comfort from a fellow group member (Richman, 1987). In humans, as in other primates, listeners receive information that callers provide. In non-human primates, however, the caller provides this inadvertently, without intent (Seyfarth & Cheney, 2003).

48 minutes, 2 seconds in: *“One thing however, is likely. It was the need to communicate detailed social information between many individuals that lead to the evolution of language in our own species. So, although monkeys living in the tree tops have rich and varied lives, it’s the ones that came down to the ground and formed large groups that have the most complex and communicative societies of all. A fact not without significance for our own ancestry. “*

## 7. DISCUSSION

In large, the narration corresponds well with existing research. Further studies may focus more on the edited film that is shown, and the background music that is added. The effect of these on viewers is more complicated to establish though, and would require much time and effort. If purely considering the narration, however, viewers will get correct, if little, information on the subject of animal communication. Unfortunately, much of the animal communication shown in *The Life of Mammals* was not commented and because of that it may go unnoticed to most of the viewers.

### 7.1. Episode 3: Plant predators

Something that occurs to me in watching this episode is that these are most often social animals. They often live in big groups. Still, the subject of communication is barely brought up. Hardly even about elephants, that are known to be highly social (Vance et al., 2009). One could compare this to the episode about primates, where communication has been made a big focal point. I quote David Attenborough once again (as above); *“It was the need to communicate detailed social information between many individuals that lead to the evolution of language in our own species.”* So why should that not be true for other species?

The case of the salt-mining elephants is questionable, in that the literature suggests the narrative is leaving out information, or perhaps even twisting the reality of the behavior. The documentary says the elephants are one big, helping family, and the literature says that at least sometimes, that is not so. That sometimes there is a hierarchy in these situations.

The study of Bowyer et al. (2007) on American bison challenges the information given in the documentary, but one must keep in mind that the documentary (2003) predates the article. This is true for other studies in this thesis as well.

### 7.2. Episode 5: Meat eaters

In an episode that covers animals like wolves and hyenas leading such rich social lives, it is surprising to see so little about their communication. As is shown in this episode, these are animals that cooperate quite successfully during hunt and rejoice in each other's company, and yet very little is said of their communication, which is likely to be complex and interesting to many viewers. I see this as a lost opportunity to captivate the audience with facts that shows how alike we humans are not only other primates, but also other animals that look much less like us. Animals that are ancestors to the domesticated dogs we keep in such close proximity to us and share our lives with.

Another thing to consider in this episode is what David Attenborough might have been communicating to the wolves when howling at them. What was the message they received? Also, the way a documentary is edited can be misleading and I wonder whether the wolves that were filmed howling were really responding to Sir Attenborough's howl or the “response” was filmed at another time. According to Nowak et al. (2007), wolves only howl at humans during the months of June through September. Similarly, the communication roars of the Lions could be territory claims (McComb et al., 1994), telling

Sir Attenborough and his crew to leave. Considering these things may be useful in the quest for ethical observations in future wildlife productions.

### **7.3. Episode 9: The social climbers-primates**

As Attenborough points out in episode 9, the fact that terrestrial monkeys have complex and communicative societies is connected to our own ancestry. Looking at these primates is like looking back at our own evolution. This might be why humans are so allured by the thought of owning a monkey. Perhaps we feel we understand them because they are like us. Perhaps they make us curious because they show us a piece of ourselves that we may not have been aware of before. Snowdon & Elowson (2001) found that as pygmy marmoset infants grow older, their repertoire of calls increases. They also argue that “babbling” in young marmosets provides vocal practice and attention from the group. This can be compared to Oller’s (2000) notion that babbling in human infants is an important stage in their road to speech. This shows a similarity between us humans and monkeys – one that I suggest is one of the many reasons humans are so attracted to the idea of a pet monkey; it’s practically a conspecific baby.

There is much literature covering the differing eagle and leopard alarm calls in mixed species groups that, in short, suggests that this alarm call system is not as straight forward as is indicated in this film. Though there might be learning benefits to portraying things in such a categorical manner, I am not convinced it does the animals, the viewers or the scientific field a favor in the end. I will discuss this further below.

David Attenborough concluded that we “have no idea” of what the geladas are saying when they chatter. This may be true, but that does not mean we cannot make informed guesses at what type of information they might be exchanging, as Richman studied them in 1987 and wrote about the various situations in which these primates chatter. For example, if we see geladas chatter during a moment of comfort, we might conclude the chattering contains soothing information.

### **7.4. General**

When it comes to animal behavior, one can never be sure. There may be studies that contradict the documentaries, but that is not to say either are wrong. The producers of *The Life of Mammals* present theories that may or may not be the absolute truth, and that is something we all have to live with. But when these theories are presented as a certified fact, it may become a problem. As viewers are not offered any references to studies, they are left to assume there are absolute truths in this field and that they have just taken part of them. They may not be open to accept new information the next time around.

As I only took on three out of ten episodes of the *Life of Mammals* series, I cannot draw conclusions about any other documentaries. Had I analyzed documentaries that focus on communication, I might have had more to say than in this analysis of *The Life of Mammals*, of which the aim was not to educate the masses on the inter and intra specific communicational ways of animals. Nevertheless, this was meant to be one of many steps of a long journey, and a step it is. If a (larger scaled) collaboration could be established between research and documentaries, I believe these fields could both benefit immensely.

Problems I encountered along the way were plentiful. However there were a few that protruded more than others; I found it difficult to know how far to go in my analyses, and choosing what to include in this thesis overall. In the beginning I therefore had a tendency to get carried away and trying to write about *everything*. But specifying my aim and questions and remembering them in every sentence I wrote was what got me through in the end. Drawing the line in definitions was a valuable lesson as well, and had I learnt it sooner, much time spent in confusion would have been saved.

## **8. CONCLUSIONS**

The aim of this study was to study the way communicative behavior is shown in three episodes of *The Life of Mammals* and to examine the pros and cons associated with documentaries, focusing on animal communication. To do this, I asked what communication behavior was filmed, and whether we are getting a realistic picture of animals' communicational behavior in the three episodes of *The Life of Mammals* I analyzed. The answer to my first question is portrayed in my results and shows that quite little communication is actually shown in the episodes about plant predators and meat eaters and relatively much of it is shown in the episodes named *Social Climbers*. The matching literature I have found suggests that based on the narrative and the accompanying footage, the viewer is getting a realistic picture, with the exception of a few questionable cases. Hard facts are hard to come by in the field of animal behavior, but here I have found shades of grey in the black-and-white world of wildlife documentaries.

## **9. ACKNOWLEDGEMENTS**

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I have a bit of extra thanks left over, so if you want it – take it.

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