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We Are Not Equals: Socio-Cognitive Dimensions of Lion/Human Relationships

Marcus Baynes-Rock
University of Notre Dame

Elizabeth Marshall Thomas
Independent Scholar

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Abstract

This article documents a peaceful, albeit tense relationship between Ju/'hoan and lions in the Nyae Nyae region of the Kalahari during the 1950s.¹ Unlike contexts where lions kill livestock and people and are persecuted in return, the Ju/'hoan and lions of the Nyae Nyae shared waterholes without conflict. The recorded and oral histories, and cultural traditions of the Ju/'hoan suggest that this peaceful relationship had evolved over centuries. Lions were recognised as powerful creatures but unlike hyenas and leopards in the region, they were not killers of humans. Lions were seen as social superiors, and addressed with respect but this was as much a social obligation steeped in tradition as an act of self-preservation. This social engagement of lions and Ju/'hoan redraws the lines around human social groups, not only challenging who it is that constitutes the social 'we' but reconfiguring the evolution of human social intelligence as a multispecies affair.

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Keywords: *Ju/'hoan, large carnivore conflict, lion/human relations, socio-cognitive niche, social engagement*

Introduction

On a warm afternoon in the Kalahari, four Ju/'hoan hunters were tracking a wildebeest they had shot with a poison arrow, only to come upon her lying down, near death from the poison, with a lion and a number of lionesses grouped at a distance nearby. Two other lionesses stood closer to the wildebeest, both watching as she tossed her horns at them. The hunters observed the scene, consulted briefly, then picked up some small stones and very slowly advanced on the nearest lioness, now and then tossing a pebble so that it landed near her without hitting her. Speaking calmly and quietly, they called her by respectful names, saying that the meat was theirs and that she and the other lions should leave. Both lionesses stared at the men and at first didn't move. But as the men continued their slow approach the nearest lioness seemed doubtful, then turned and started back toward the larger group. The other lioness followed. All of the lions paced back and forth for a while, tails twitching, as the men stood still, facing them intently. At last the lions turned and went away. The wildebeest had been watching. The men speared her, then skinned her and cut her up to carry back to the encampment.² This took place in 1953, and was witnessed by John Marshall (1932-2005), a member of the Marshall expeditions led by his father, Laurence K. Marshall (1889-1980) and included his mother, Lorna J. Marshall (1898-2002) and his sister, Elizabeth Marshall Thomas, (1931-still living). They were conducting the first study made among pre-contact San in the Nyae Nyae area in what then was South West Africa and now is Namibia. To the colonial settlers, the area was known as 'the end of the earth.' John Marshall was present with a movie camera and captured the event on film, now part of a collection of his films at the Smithsonian Institution in Washington, D. C. It is a very meaningful incident not just because a group of small men displaced a group of larger lions who could have potentially torn them to pieces. It is meaningful because it speaks of a level of social engagement that transcends species and opens up the boundaries of what constitutes human societies.

Twenty years after the incident in Namibia's nearby Etosha National Park, John Marshall's sister, Elizabeth Marshall Thomas, was participating in a study of elephants. On one occasion she was asked to retrieve a piece of equipment the scientists had left behind. But when she arrived in a van to get the equipment, a lioness was lying beside it. Assuming that the Etosha

lions were like the Nyae Nyae lions, Thomas got out on the far side of the van, picked up a pebble, went around the front of the van and walked slowly toward the lioness. She called her by a respectful name, tossed the pebble as the Ju/'hoan hunters had done, not at the lioness but near her, and expected the lioness to understand. The lioness launched from the ground and charged Thomas, but she managed to jump into the van and slam the door. The lioness stopped and turned away.

Evidently, the lions of Etosha and the lions of Nyae Nyae had developed different cultures. At one time, Etosha and Nyae Nyae would have been a single area, however large, and the lions who lived there would have belonged to a single population. As Namibia (then South West Africa) became developed, and roads, towns, and farms proliferated, the two areas were divided and the lions of one area lost contact with the lions of the other. In Etosha Park, the Hai//om San had been hunter-gatherers for thousands of years, perhaps sharing the same relationship with lions as did the Ju/'hoansi of Nyae Nyae. But in 1954 the park authorities, all of them colonials who believed that the park should be for wildlife only, forced the Hai//om to leave. After that any peaceful relationship that the Etosha lions might have had with the resident Hai//om faded away. The marked contrast was highlighted for Thomas when after her experience with the lioness, the park rangers told her the lions were so dangerous that during Namibia's struggle for independence they had kept the well-armed SWAPO (South West Africa People's Organization) guerrillas from entering the country from Angola.

The History of Human/Lion Relationships

The ancestors of modern lions first appear in the fossil record 3.5 million years ago in the upper levels of Laetoli. They appear in association with the Mid-Pliocene mammalian turnover which also brought australopithecines into the fossil record (Macho). The famous paleoanthropologist Louis Leakey once declared that human ancestors were 'not cat food' (Ardrey 15; Leakey 183), but the fossil record renders this position untenable. Certainly predation events do not fossilize well and no fossilized hominin has ever been found lodged in the jaw of a fossilized pantherine, but it is inconceivable that ancestral humans were not subject to predation by early lions. While

the fossil record does not readily reveal these past predator-prey interactions, sufficient evidence exists. For example, the famous *Australopithecus afarensis* specimen ‘Lucy’ exhibits carnivore tooth puncture marks to the pubic symphysis and pubic ramus (Johanson et al. 424). The australopithecine fossils from Hadar in the Afar region of Ethiopia also suggest predation. While some of the remains were said to have resulted from a catastrophic event such as a flood, several others show definite signs of carnivore damage to fresh bone (Johanson, Taieb & Coppens 380; White & Johanson 512). There is also fossil evidence of predation as the cause of death for later *Homo habilis*, *Homo erectus*, and *Homo sapiens* (Antón 240; Haile-Selassi, Asfaw & White 4; Tappin 39; Walker 39) and evidence of a host jump for the bacterium *Helicobacter pylori*, from humans to lions within the last 200,000 years, presumably due to a predation event (Eppinger et al. 1103). While the evidence is not unequivocal, it is sufficient to suggest that our ancestors were indeed prey to ancestral lions.

However, 3.5 million years is also a considerable amount of time for humans and lions to arrive at an equilibrium and adapt to each other. Lions are formidable, highly intelligent, social predators who could, potentially, massacre an undefended group of hominins. Yet whether by wit or by weapon, human ancestors somehow developed a capacity to make lions think twice before making prey of humans. As we shall see, the state of relations between the Ju/’hoansi and Nyae Nyae lions is evidence for that.

Relations between lions and humans have not always been as harmonious as those in Nyae Nyae in the 1950s. The most famous example of serial predation by lions on humans is that of the lions of Tsavo in Kenya. Over a period of nine months in 1898 two young male lions, now preserved as specimens in the Field Museum of Natural History in Chicago, terrorised the men working on the Kenya-Uganda railway. Lt. Col. John Henry Patterson, a British officer, sent to restore order, describes how night after night men were dragged from their tents, through thorn bomas,³ and into the dense surrounding thicket where the lions could be heard crunching their bones (Patterson, J.). According to Patterson, the two lions claimed 135 victims prior to being shot, although later research by Kerbis Peterhans and Gnoske suggests this is an exaggeration, and the total was probably closer to 35 individuals (7). Nevertheless, analyses of carbon and nitrogen ratios, in the lions’ bones and hair reveal a ‘progressive dietary

specialization on humans.’ (Yeakel et al. 19040).⁴ Nor were lion attacks in Tsavo limited to a nine-month period in 1898. Kerbis Peterhans and Gnoske provide historical evidence that anthropophagy in the Tsavo district was a ‘tradition’ among lions passed down through generations. The Kenya-Uganda railway was built along a Swahili caravan route, which had long provisioned the local lions and hyenas with people connected with the slave trade moving between the interior and the Kenyan coast. This claim of a tradition within a lion population is pertinent to what we are presenting here because it opens up the possibility for social engagement between humans and lions based on cultural norms of both species.

While the Tsavo lions were made famous by Patterson’s book and two motion pictures, they were not unusual nor were they the most prolific of anthropophagous lions.⁵ In the southern highland province of Tanganyika, now southern Tanzania, game ranger George Rushby was given recorded accounts by the game department of 249 killings over 6 years during the 1950s in one sub-chiefdom, Wangingombe. These were but a fraction of the overall killings which had continued for fifteen years over three sub-chiefdoms, leading Rushby to estimate 1000 to 1500 people had fallen victim to three or four lion prides that fragmented and fused sporadically (Rushby 186-187). The game ranger claimed that lions needed to be eliminated early, because with experience of preying on humans they developed a ‘supernatural cunning’ learning to stay a step ahead of their quick-witted and dangerous prey (Rushby 183). Unlike lions elsewhere, these lions learned to rest at night and travel during the day whereupon they attacked villagers in coordinated attacks, sometimes carrying their victims away in relay fashion.

Colonial administrator Eric Temple-Perkins documents a similar state of organised anthropophagy among lions in the Ankole district of Uganda during the 1940s. According to his account, in the sixteen weeks following Temple-Perkins’ having taken administrative charge of the district, at least 161 people were killed by as many as 17 lions operating in the Sanga area (Temple-Perkins 70). Here Temple-Perkins raises the question of why otherwise healthy lions took to killing and eating humans when there was ample wild game and livestock available. He argues that one contributing factor was that the Sanga area was used as a thoroughfare by itinerant workers travelling from Belgian Rwanda to other parts of Uganda. As a consequence there were people walking after dark and/or sleeping in the open, often without campfires. The

opportunities to prey on vulnerable people were taken up by the lions who quickly adapted to their 'new diet' although this did not alter their habit of killing and eating livestock. This is a clear example of a lion/human relationship in which there was no mutual understanding – a consequence of colonial processes that saw waged labourers move into lion habitats in which neither the lions nor the humans had any experience of the other. Temple-Perkins and the local Bahima eventually killed the lions but it was no easy task as the lions displayed considerable caution and cunning in evading the administrator's rifle.

Accounts of other lion attacks and mortalities over the period 1923-1994 have been preserved in the records of the Ugandan Game Department. The records document 275 attacks by lions on humans with a mortality rate of 74.9 percent. Among these were attacks on humans attempting to scavenge from kills:

a man collecting firewood... came upon a lion eating a kob. Very foolishly he tried to drive the lion away to steal its meat, which the animal resented, showing its displeasure by springing on him and mauling him severely. (UGDA 1953 cited in Treves and Naughton-Treves 279)

Of all lions, those in Uganda had greater reason to fear humans than did those of the Kalahari. In Uganda there was a policy of 'aggression and retaliation' toward lions, many hunters carried firearms and rewards were paid to people killing lions until 1959 when lions became protected by law (Treves and Naughton-Treves 280). Yet there stands the evidence of Ugandan lions attacking humans attempting to procure meat from a lion-kill, while in the Kalahari where people were not as capable of killing lions nor as inclined to do so, such retaliatory attacks were unheard of.

In Tanzania, Craig Packer and his colleagues in their analysis of patterns of lion attacks found consistent lion attacks on agriculturalists increasing over time. Over the period from January 1990 to September 2004 there were 815 lion attacks, resulting in 563 fatalities (Packer et al. 2005). Nor were these all acts of incidental predation on people defending livestock. In many cases attacks were on people walking alone or relieving themselves in the bushes, and lions were even reported to have entered huts and pulled people from their beds. Packer and his

colleagues found correlations between areas of frequent attacks and scarcity of natural prey; however, this explained only half of the variance. In many cases there were districts in which lion attacks were simply far more frequent than in others (Packer et al. 2005: 927).

Asiatic lions can be equally threatening toward humans if not more so. From a contemporary study of the last remaining Asiatic lions in the Gir forest in India, Saberwal et al. documented 193 attacks by lions over a 13-year period. Considering that the estimated lion population at the time of the study was 284 individuals, this indicates a high proportion of lions attacking people.⁶ The number of attacks dramatically increased subsequent to a drought, although the number of mortalities due to lion attacks was relatively stable year to year. In terms of a tradition of attacks on humans, this was primarily due to overcrowding which forced sub-adult lions out of protected areas and into human communities (Saberwal et al. 504).

Lions and Ju/'Hoansi in Nyae Nyae

The Ju/'hoan San have been in north-western Namibia since the Upper Palaeolithic and perhaps long before, evidently without much change in their way of life. An encampment excavated by Andrew B. Smith just north of Nyae Nyae in what is now the Kaudum Reserve showed occupancy from 4,000-3,200 years BP (Smith 2001: 21). Stone points found on the surface of the ground near the water-source where the Marshalls had their main encampment were determined to be from the Wilton culture, which places them at 6,000 BP. Even the name of that area, Gautscha, suggests antiquity as it means 'Place of Buffalo.' No buffalo were there in the 1950s, however, as buffalo depend on surface water and Gautscha had none in the dry season. Small numbers of buffalo might occasionally appear during the rains, but no more than in any other area, suggesting that the name came from an earlier time when climate conditions produced more rainfall and better grazing. Yet the most compelling evidence for longstanding habitation was found by archaeologists Alison S. Brooks and John E. Yellen who worked in an area known as Dobe, just east of the Nyae Nyae area and now part of Botswana, where San people had lived and still live today. The study included encampments, hunting blinds, and game trails over an area of about 1600 to 2000 km, the annual range of the Dobe San, and found

evidence of continuous if periodic occupancy dating back 80,000 years with little if any change in life-style (Brooks and Yellen 96). Yellen conducted further research with Richard A. Gould, comparing the African hunter-gather encampments with those of people in South America and Australia, pointing out that the Australian populations have had no large predators since *Thylacoleo carnifex*, a lion-like marsupial who disappeared during the Pleistocene; the South American populations had just one large predator, the jaguar; but the southern African people had to deal with lions, leopards, and spotted hyenas: all large, all numerous, all dangerous, and all well known for anthropagy. According to Gould and Yellen, this helps to explain how people placed their shelters. The Aboriginal people placed theirs in random arrangements but always far apart, in marked contrast to the San, whose shelters were placed in close circles with every person's shelter in view of other people, obviously a safety measure as many predators tend to attack from behind (Gould and Yellen 99).

The Ju/'hoansi of Nyae Nyae shared an area of roughly 6,000 square miles with these predators. Fifteen waterholes were in the area, six of which were permanent, eight of which could fail at times of extreme drought, and one that was contaminated with the bodies of several hyenas who had tried to drink but fell in and drowned (Marshall 1976: 72-73). The human population of Nyae Nyae was estimated at 567 (Marshall 1976: 19). The lion population of the 1950s is now estimated to have been around 310 (the leopard and hyena populations have not been estimated), and during the dry season each of the waterholes except the contaminated one was home to between thirty and seventy humans, including infants, and twelve to twenty lions.⁷ Gautscha was a good example of an encampment area, with a permanent waterhole and 68 people, representing two bands, in residence (Marshall 1976: 157). The area was also home to a pride of perhaps twenty lionesses and a lion, and the two groups were very much alike. Both were social, both hunted the same game in much the same way as both were stealth hunters with a lion's charge being about the same length as an arrow shot, and both groups receiving enough meat for all from any large antelope that was successfully hunted. The Ju/'hoansi said that lions were better hunters than themselves because upon securing the victim the lions could eat it right away whereas the Ju/'hoan hunters had to track it for several days. (The victim was nevertheless 'secure' unless a scavenger found it first, because the Ju/'hoan poison was inevitably fatal.)

Both the Ju/'hoansi and the lions needed access to water, which may have contributed to their cooperative relationship. If one of the groups was endangering the other, the endangered group would have to leave and try to find another water-source (Thomas: 2003: 75). As for the people, their entire culture was designed for widespread social cohesion, thus if a group was forced to leave their water-source, they could be welcomed at another source (Thomas 2006: 221-23). The same need applied to the lions although they conducted themselves differently in that their almost nightly roaring informed lions far away that their water-source was occupied. If they were challenged by a water-deprived pride they would have to fight until the ownership was determined and the losers were killed or driven away to try to get liquid from the bodies of their victims or from water-bearing plants. If a dispute occurred between the leonine and human owners of a waterhole, the lions had more to lose. But the humans would have had problems too, as was noted on several occasions, one in particular during a difficult dry season when several groups of Ju/'hoansi from other locations - about 200 people in all - converged on Gautscha (Marshall: 1976:139-140). The reason for their visit was not determined. Perhaps they wanted to view the Marshall expedition but possibly they needed water. Because their numbers would seriously challenge the food supply they were viewed with dismay by the residents, so they camped at a distance and rather than visiting the residents they kept to themselves for most of the time and didn't stay for long. They were presumed to have gone to another waterhole several miles away, one with no permanent residents at the time but even with sufficient food they were too many for one location.

The two groups, lions and humans, were highly aware of each other, although the lions had more interest in the humans than the humans had in them. But it was not a predatory interest, or so it seemed. Often lions visited the Ju/'hoan and Marshall encampments, either to watch or to roar conspicuously. Once when the Marshalls camped at a new location, an entire pride of lions came at night and produced choral roaring, some lions roaring until they were out of breath while others joined them, so the uninterrupted, deafening sound continued for as long as twenty minutes. Evidently on this occasion the lions had realized that newcomers were present, came to investigate, didn't like what they saw, and were warning the Marshalls away. But not all encounters were antagonistic. On another occasion when the Marshalls had camped

without bothering to put up their tents, lions walked around them as they slept on the ground, standing right over them and looking down at their faces. The Marshalls learned this in the morning when they saw the lions' tracks.

Obviously, the lions were not afraid of people nor did they need to be. The Ju/'hoan men did not have defensive weapons. Their poison arrows could not be used against lions because the poison takes several days to prove fatal, giving lions ample time to retaliate. As for the Ju/'hoan spears, these were short hunting tools rather than weapons. To throw a small spear at a lion hoping for an immediately fatal hit was too dangerous, and stabbing a lion with a hand-held spear was almost out of the question because the Ju/'hoan spears were about the same length as a lion's reach. Unlike Maasai, the Ju/'hoan did not have shields to protect themselves.

This benign relationship is demonstrated quite dramatically in an unpublished study by John Marshall and Claire Ritchie, (cited in Hitchcock) of the causes of 1,500 deaths between 1910 and 1969 among the Ju/'hoansi, the majority of whom had not previously encountered Europeans. Marshall and Ritchie found only two accounts of people who were said to have been killed by lions and one account is questionable. This one took place in about 1925 and the victim was a girl who ran away from an encampment one night and disappeared in the bush, evidently to avoid a man she didn't want to marry. She was assumed to have been killed by a lion but the story is incomplete and doesn't say whether her remains were found. The more reliable account took place in the early 1940s, involving a disabled girl who couldn't walk so moved by edging forward on her buttocks. She was killed while sleeping near her parents who had let their fire die out. According to the story, lions came and sat by the family to watch them for a while before one of the lions took the girl. The story is somewhat unclear, and was told by those who had heard of it, not by eyewitnesses. Did someone actually watch this happen but gave no warning? Perhaps the girl had tried to move and didn't fit the lions' concept of a human, which would explain their unusual behaviour. Lions sitting and watching people was not in the least unusual.⁸

This relationship with lions was accepted as normal by the Ju/'hoansi, who knew from contact with people at the far edges of their area that lions elsewhere were dangerous to people, but explained the local lions' peacefulness by saying if the people didn't hunt the lions the lions

wouldn't hunt them. The exceptional relationship was noted by the Marshalls, beginning in 1950-51 and was described elsewhere by Thomas (1990: 78; 2003: 73; 2006: 160-185) but is seldom if ever mentioned by the many anthropologists who later worked with the Ju/'hoansi. This reflects anthropology's traditional exclusion of other species as social actors (Kirksey and Helmreich 545; Noske 185). The benign San-lion relationship ended in the 1970s when the area became occupied by westerners and Bantu-speaking people and the Ju/'hoansi began to change their way of life from hunting and gathering to wage labour and livestock husbandry. Thomas, who was in her early twenties when she first observed the relationship, is now 85, and may very well be the last person still living, Ju/'huan or otherwise, to have seen it.⁹

Within the context of lion predation in other parts of Africa, the Gautscha relationship deserves attention not just as an anomaly, but as an example of an expanded social network that included both humans and lions. Leopards and hyenas were more dangerous by far. Both kinds of animals occasionally visited the encampments at night in search of victims, and hyenas endangered people who were travelling, especially those who seemed weak and were lagging behind. Hyenas were well known as a danger to such people (Thomas 2006: 140, 147). Yet although the Ju/'hoansi had no special feelings for leopards or hyenas, and drove them away if they saw them near an encampment, their respect for lions was as strong as their respect for the two gods, /*Gao N/a*, the god of the east, and //*Gaua*, the god of the west (Thomas 2006: 257-264).¹⁰ The Ju/'hoansi didn't like to say the word for 'lion,' (*n!hai*) in the daytime, just as they didn't like to name either of the gods, especially not during the heat of the day when the lions and the gods were resting in the shade. Rather than utter the word '*n!hai*' the Ju/'hoansi might hold a fist at chest level to represent a lion's head, or use a metaphor for 'lion' such as 'moonless night.' They were also respectful when speaking to a lion, perhaps a lion whose shining eyes were viewing the encampment after dark, and would address the lion as '*N!hai N/a*,' (Old Lion), a term of deep respect (Thomas 2006: 157, 159-61, 169-74).¹¹

In the past in southern Africa, some of the other San peoples, especially the Khoikhoi, kept livestock and this profoundly affected their relationship with lions (Smith 1990). Settlers' drawings from the 1700s show the Khoikhoi herding livestock and confronting cattle-killing lions with long spears (Boonzaier 29, 82). However, until the 1960s the Ju/'hoansi in the areas

of the interior Kalahari were purely hunter-gatherers, having no domestic plants or animals of any kind, and when visited by the Marshalls they lived as they had lived for thousands of years. It may therefore be reasonable to assume that the reciprocal relationship between lions and the Ju/'hoansi was ancient. However, aspects of their culture such as their quasi-religious respect for lions in contrast to their near indifference to leopards and hyenas, suggest that the reciprocal relationship had not always been so.

The trance dances of the Ju/'hoansi may shed light on their original relationship with lions. These dances were for protection against sickness, against bad luck such as the bite of a poisonous snake, against social dissent which threatened cooperation that was essential for survival, and also, quite specifically, against lions. These dances were held only on nights of the full moon, beginning just after dark and lasting until sunrise, and took place around a fire at a distance from the encampment. During the dance the men in a trance inhaled unseen evils such as sickness, jealousy, and selfishness as if sucking these evils from the assembled people, then ran out into the dark and expelled the evils with shouts, sending them back to the spirits of the dead who brought them. And then, as often as not, the men while in trance would shout at lions, demanding that they leave. The men had no reason to think that lions were actually present. If only by tradition, the danger of lions was assumed to be present, as was the danger of the spirits of the dead (Thomas 2006: 170).

Therefore although the Ju/'hoansi were no longer threatened by lions, we suggest that they were seriously threatened long ago, and began the dances when lions were dangerous. This is because the Hadza in Tanzania held similar dances, also for protection but in their case from all kinds of dangers. The important difference between the Ju/'hoan and the Hadza dances was that in contrast to the Ju/'hoansi who danced only on the nights of the full moon, the Hadza danced only on the nights of no moon. Although the San and the Hadza are geographically separate they have much in common, both being hunter-gatherers, both speaking Khoi-San or 'click' languages (Cavalli-Sforza et al. 3), both using poison arrows, and both holding protective dances, among other similarities. So it is the timing that suggests that predators were a factor when the dances were formed, as both dances are specifically related to the moon and the phases of the moon are related to lion predation.

In a study of lion attacks in Tanzania, Craig Packer et al. (2011) demonstrate the importance of the moon, indicating that on moonlit nights, lions are most visible and their hunts are less successful than when the moon is down. The full moon rises when the sun sets, and rises later every night thereafter until it becomes a new crescent and rises with the sun. Of course, moonlight affects all nocturnal predators, but especially lions because they are stealth hunters and their large size prevents them from hiding successfully in most savannah ecosystems. Packer has found that the nights after the full moon are by far the most dangerous because by then the lions are hungry, and it is on these nights that lion attacks occur most often. Thus the full moon signals that dangerous nights are coming when lions may favour humans over their normal prey. Packer and colleagues suggest that lion predation when the moon was down gave humans fear of the dark (2011: 2), and almost certainly it explains the timing of the Hadza and Ju/'hoan protective dances.

The Bounds of Human Social Intelligence

The Kalahari lions' tradition of non-violence toward humans bears similarities with a tradition among spotted hyenas in the city of Harar, Ethiopia. In the town of 100,000 people attacks on humans are rare. The only documented attack from recent times was a hyena taking a baby from a homeless woman sleeping on the street (Baynes-Rock 2015). The taking of the baby stands as an exception, as there are gate attendants and hundreds of homeless people – adults and children – who sleep in Harar's streets which are patrolled nightly by as many as 200 hyenas from four resident clans. Meanwhile, in nearby rural areas, attacks by hyenas on people are all too frequent. From a survey of 140 rural dwellers from 8 sub-districts across the East Hararge region, 30 percent of people surveyed knew someone personally who had been attacked by a hyena (Baynes-Rock 2013: 425). In fact during the survey period, four attacks by hyenas resulting in one fatality occurred over a three-day period in the town of Kombolcha, 25 kilometres from Harar. In another survey in the same region conducted by Dejene et al. (110) respondents reported 24 attacks by hyenas over a two-year period in only four sub-districts (average population: 5280). So with regard to Harar, there are few explanations for why the hyenas there do not attack people, while their rural cousins do. One possible explanation is that

plenty of food is available. The human population produces abundant meat scraps etc. However, the town of Kombolcha also provides a lot of scraps. Moreover, this does not discount cultural learning. The hyenas of Harar learn early on that humans are not potential prey and this is reinforced with every peaceful (albeit nerve wracking) encounter in the streets in which alternative foods are to be found. There is a culture of non-violence that is maintained, which is passed down through the generations.

Lions and hyenas are highly social animals with a great capacity for social learning (Arsznov and Sakai 275). Among the carnivores these two species have the highest ratio of neocortex to overall brain volume – higher than in wolves (Dunbar and Bever 698). Lion cubs spend six to eight months nursing and another three to four years learning from their parents and pride-mates before they reach sexual maturity and produce the next generation (Packer 2010). In males this period of socialization and learning is even longer. This is a formative period in which lions learn territories and survival strategies that they maintain throughout adult life (Heinsohn, Packer and Pusey). So we need to acknowledge lions' capacity for social learning and maintenance of cultural traditions. Lions do not hatch out of eggs and run off into the savannah looking for prey: they are nurtured and grow up within groups with traditions which they must learn. If adult lions behave in a certain way toward humans, then such traditions can be passed down to cubs who pay attention to what the adults are doing. If anthropophagy in the case of the Tsavo lions can be classified as a local tradition passed down through generations of lions (Kerbis Peterhans and Gnoske), then the converse can apply in the case of the Kalahari lions. Whether it is a tradition of eating or avoiding a particular kind of prey, the way of passing on and maintaining the tradition is the same: cultural learning (See also Alger and Alger; Tomasello, Kruger and Ratner).

Our argument here is not to present the Ju/'hoansi and their relationship with lions as emblematic of the human ancestral past. By the 1950s the Ju/'hoansi were trading with the Bantu speaking people at the edges of Nyae Nyae, obtaining tobacco and metal with which they made many of their spear-points and arrowheads, although a few traditional bone arrows remained. As for their conceptions of lions, the Ju/'hoansi of Nyae Nyae seemed to have adopted a few beliefs from Bantu-speaking people, telling of certain healers who could 'jum',

(pronounced 'zhum') which means to take the form of a lion. The tendrils of agro-pastoralism and colonialism were reaching deeply into the thorny bushes of Nyae Nyae, profoundly affecting the humans and lions who were on the verge of dramatic and unprecedented social upheaval (Thomas 2006: 155-165). However, the Ju/'hoansi are emblematic of a group of humans faced with the challenges associated with living in close proximity to large carnivores who potentially hold over them the power of life and death. These challenges are not simply technical, nor are they a matter of negotiating a set of predictable behaviours in the lions because, as we have demonstrated, lion behaviours are not predictable at a social level. These are challenges of a socio-cognitive nature whereby the lions are considered social actors.

What these data offer is corrective to thinking of the evolution of human social intelligence as a solely human process. For the pre-contact San of Nyae Nyae, lions were creatures who demanded negotiation. The words spoken to lions were not akin to condescending 'coo cooing' toward domestic cats. 'We are not equals' was the plaintive call of a San father to a threatening lion as he and his family spent a night circling a fire to keep the lion on the opposite side (Marshall 1969: 374). People were not equals because lions held a position of power from which they dictated the terms of the negotiations. Lions were seen as social superiors with the power of gods and spirits of the dead with whom the people were socially engaged. Therefore lions needed to be treated as social actors – their needs and intentions understood in order to navigate the tense set of relations between humans and lions. Hence, the distinctively human form of social intelligence that supposedly evolved in an intra-human context in fact evolved amidst an array of social actors, both human and non-human. In addition to their conspecifics, humans had to deploy their socio-cognitive skills in precarious relations with powerful predators.

If human communities in this sense are more-than-human, then the neatly drawn line around human groups in terms of numbers suddenly vanishes (cf. Dunbar). Within these social networks, the lines that connect individuals with other individuals, within bands and across boundaries of group identity and kinship to other human individuals, also splay out into the veldt to connect humans to other non-human creatures. In light of this we need to consider the particular band of lions sharing a waterhole with the band of Ju/'hoansi as a part of an overall

population of persons in attendance. In the same way as the abovementioned visiting band of humans caused some distress upon arriving at Gautscha, the lions of Nyae Nyae were effectively another group of social actors camping nearby, causing social tension. So while the number of humans in Nyae Nyae was around 560, the number of social actors should include approximately 300 lions, and it is this larger group size within which human and lion social intelligence was operative and evolving.

In evolutionary terms this is even more meaningful with proto-linguistic humans. When it comes to embodied communicative interactions, species distinctions based on a capacity for symbolic communication are simply not as sharply defined. Whether it was lions or other humans with whom ancestral humans were socially engaged, the challenge was the same: to understand the mindsets and intentions of the other persons. And this could best be done through application of emerging theory-of-mind based on modes of embodied communication. Proto-linguistic humans could not sit down with their neighbours and discuss how a tense situation might be resolved; they had to understand their neighbours as actors whose intentions and mental states were accessible only by observing their bodily dispositions within a localized context of species-typical behaviours and socio-ecological conditions (Shapiro 185). And in the case of lions at least, the costs of getting it wrong in evolutionary terms were extremely high.

This highlights the intense socio-cognitive demands of the lion/human socio-ecological superimposition. In non-linguistic social interactions with one's own species, an individual is able to apply to others a self-reflexively informed theory-of-mind. A human can reflect on how it would feel to be a human in a given situation and project those feelings onto another human with some chance of getting it right. The fact that humans have this capacity explains, to a certain degree, why human societies work. Meanwhile, where theory of mind is wrongly applied it creates social dysfunction which is exemplified in the condition known as autism. However, when attempting to understand another species it is far harder to apply a reflexive approach because apprehending the feelings of an unrelated species requires not just a deep understanding of the other's species-typical behaviours, but a tremendous leap of the imagination into the mind of a non-human (Fuentes). In which case the evolution of the capacity for theory-of-mind in humans was not driven simply by increasing complexity within human

communities, it was also driven from without by the challenges associated with understanding non-human others. This is why it is very hard to delineate where anthropomorphism is inappropriate – because in some cases it can offer accurate insights into the minds of other animals. Certainly it did not inhibit the game rangers and colonials cited above in their dealings with lions, and we argue it was crucial to the Ju/'hoan arriving at a mutual understanding with a pride of lions.

Some philosophers have discounted this inter-species mind-reading capacity in humans. Ludwig Wittgenstein famously said, 'if a lion could talk we could not understand him' (Wittgenstein 223). Here Vinciane Despret (2) raises a crucial question: Who is this 'we' about whom Wittgenstein is making this claim? Is it a cohort of philosophers gazing over the barrier of a lion enclosure? Is it all of humanity? If the latter, then this claim is wild and misplaced and a Ju/'hoan person would very likely disagree. Certainly the mental states of a lion are different from those of a human but to argue that these are inaccessible requires evidence counter to that which we have presented here. For a Ju/'hoan hunter a lion need not even speak to be understood so if a lion could speak, so much the better. The lion's words would build on the already established understanding that each has of the other in order that their uneasy peace can be maintained. Indeed, the Ju/'hoan men who convinced the lions to abandon their dying wildebeest were more confident of their understanding of lions than they were of the people of the Marshall expedition who came in trucks from a far off place and described this relationship.

Thus a greater difference exists between the 'we' that is species and the 'we' that is social than has been previously acknowledged. While the contemporary species 'we' is exclusive, social 'we' is both exclusive and inclusive. It is unbounded with respect to biologies, destabilising conceptually human boundaries around human communities, allowing entry to all manner of creatures and things (Latour). And at the same time it is exclusive, drawing a line around the people and lions of Gautscha and shutting out the philosophers. For a Ju/'hoan man to say 'we are not equals' is to remind the lion of a differential, not of species but of power, of which much lay with the lion. The entreaty is to a superior being who the man hoped would show some benevolence to someone who acknowledged his position. At the same time, it is to remind the lion of an engagement that is social. The 'we' that the man refers to is a social 'we' inclusive of lions and on that occasion bounded by the limited light of a campfire. Thus we need

to pay greater attention to these creaturely kinds of ‘we’ around whom the social boundaries expand and deform. Not only do they force a re-evaluation of human sociality, they open up the socio- cognitive niche within which humans evolved, to include minds that challenged ancestral humans to imagine beyond themselves.

Notes

¹ The Ju/’hoan (pl. Ju/’Hoansi) constitute a sub-group of the people of the Kalahari, collectively known as San or Bushmen. In the 1950s these people primarily subsisted by hunting and gathering.

² Thomas fieldnotes, 1953

³ A boma, or kraal, is a thorny enclosure constructed to contain livestock and exclude predators.

⁴ The ratio of carbon and nitrogen isotopes in carnivores reflect the diets of the prey that the carnivores have been eating.

⁵ See Bruce Patterson, *The Lions of Tsavo: Exploring the Legacy of Africa's Notorious Man-Eaters*. McGraw Hill, 2004; John Henry Patterson, *The Man-eaters of Tsavo*, MacMillan, 1907; *Bwana Devil*, Arch Oboler Productions, 1952; *The Ghost and the Darkness*, Constellation Entertainment, 1996.

⁶ The IUCN Red List currently assesses the lion population as vulnerable – numbering between 23,000 and 39,000 individuals. IUCN Red List, *Panthera leo*, <http://www.iucnredlist.org/details/15951/0>

⁷ Other studies, one from Western Zimbabwe, and one from central Kalahari gave accounts of lion populations at 2 per 100km² and 2.1 per 100km² respectively. Considering lion densities range from 1-4 per 100km² and that the population density in ecologically similar Etosha is 2 lions per 100km² the figure given here is a qualified estimate.

⁸ Data from an unpublished study by John Marshall and Claire Ritchie of causes of death among the Ju/’hoansi, transferred to Polly Wiessner as ‘Data on Predator Attacks from Nyae Nyae.’

⁹ For 2016 description of Ju/'hoansi hunters approaching a lioness and her cubs and sharing her kill in Botswana, see BBC2 documentary, *Lion People of the Kalahari*, presented by Gordon Buchanan.

¹⁰ Suzman found similar conceptions from among the Hai//om of Etosha. There lions were considered kin; 'rather than feared, lions were regarded with respect as relatives, sources of divine power, and sometimes even objects of lust' (Suzman 224).

¹¹ The elderly were considered to be wise and were valued for the historical information they carried in their memories.

Works Cited

- Alger, Janet and Steven Alger. *Cat Culture: The Social World of a Cat Shelter*. Temple University Press, 2003.
- Antón, Susan C. The Face of Olduvai Hominid 12. *Journal of Human Evolution*, vol. 46, 2004, pp. 337- 347.
- Ardrey, Robert. *The Hunting Hypothesis: A Personal Conclusion Concerning the Evolutionary Nature of Man*. Atheneum, 1976.
- Arsznov, Bradley. M. and Sharleen T. Sakai. 'Pride Diaries: Sex, Brain Size and Sociality in the African Lion (*Panthera leo*) and Cougar (*Puma concolor*)'. *Brain, Behavior, and Evolution*, vol. 79, 2012 pp. 275-289. DOI: 10.1159/000338670.
- BBC. 'Lion People of the Kalahari'. *Two Tribes, Predators, and Me*. 2017.
<http://www.bbc.co.uk/programmes/p03nhqc7/p03nhn91>
- Baynes-Rock, Marcus. 'Local Tolerance of Hyena Attacks in East Hararge Region, Ethiopia'. *Anthrozoös*, vol. 26, no. 3, 2013, pp. 421-433. DOI: 10.2752/175303713X13697429464438
- . *Among the Bone Eaters: Encounters with Hyenas in Harar*. Pennsylvania State Press, 2015.
- Boonzaier, Emile. *The Cape Herders: A History of The Khoikhoi of Southern Africa*. David Phillip, 1996.
- Brooks, Alison S. and John E. Yellen. 'The Preservation of Activity Areas in The Archaeological Record: Ethnoarchaeological and Archaeological Work in Northwest Ngamiland,

- Botswana'. *Method and Theory for Activity Area Research: An Ethnoarchaeological Approach*, edited by Susan Kent. Columbia University Press, 1987, pp. 63-106.
- Cavalli-Sforza, Luigi L., Paolo Menozzi and Alberto Piazza. *The History and Geography of Human Genes*. Princeton University Press, 1994.
- Dejene, Sintayehu W., Nigussie Dechassa, and Uttama Reddy. 'Coexistence of Human and Hyena and Associated Impacts in Haramaya District of Eastern Ethiopia'. *International Journal of Biodiversity and Conservation*, vol. 8, no. 1, 2016, pp. 1-7.
- Despret, Vinciane. 'The Becomings of Subjectivity in Animal Worlds'. *Subjectivity*, vol. 23, no. 1, 2008, pp.123-139. DOI:10.1057/sub.2008.15
- Dunbar, Robin I. M. 'The Social Brain Hypothesis'. *Evolutionary Anthropology*, vol. 6, no. 5, 1998, pp.178-190.
- Eppinger, Mark, et al., 'Who Ate Whom? Adaptive Helicobacter Genomic Changes that Accompanied a Host Jump From Early Humans to Large Felines'. *PLoS Genetics*, 2(7): 2006, e120. DOI:10.1371/journal.pgen.0020120
- Fuentes, Agustín. 'The Humanity of Animals and the Animality of Humans: A View from Biological Anthropology Inspired by J. M. Coetzee's *Elizabeth Costello*'. *American Anthropologist*, vol. 108, no.1, 2006, pp. 124-132.
- Gould, Richard A. and John E. Yellen. 'Man the Hunted: Determinants of Household Spacing in Desert and Tropical Societies'. *Journal of Anthropological Archaeology*, vol. 6, 1987, pp. 77-103.
- Haile-Selassie, Yohannes, Berhane Asfaw & Tim D. White. Hominid Cranial Remains from Upper Pleistocene Deposits at Aduma, Middle Awash, Ethiopia. *American Journal of Physical Anthropology*, vol. 123, 2004, pp. 1-10.
- Heinsohn, Robert, Craig Packer and Anne E. Pusey. 'Development of Cooperative Territoriality in Juvenile Lions'. *Proceedings of the Royal Society of London B: Biological Sciences*, 263(1369), 1996, pp. 475-479.

- Hitchcock, Robert K. 'The Old Way and the New Way: Interactions and Connections among San, Lions, and Elephants in the Kalahari'. *Just Conservation*. December 14 2014.
www.justconservation.org/the-old-way-and-the-new-way
- Johanson, Donald C., Maurice Taieb and Yves Coppens. 'Pliocene Hominids from the Hadar Formation, Ethiopia (1973-1977): Stratigraphic, Chronologic, and Paleoenvironmental Contexts, with Notes on Hominid Morphology and Systematics'. *American Journal of Physical Anthropology*, vol. 57, 1982, pp. 373-402.
- Johanson, Donald C., et al. 'Morphology of the Pliocene Partial Hominid Skeleton (A.L. 288-1) from the Hadar Formation, Ethiopia'. *American Journal of Physical Anthropology*, vol. 57, 1982, pp. 403-451.
- Kerbis Peterhans, Julian C. and Thomas Patrick Gnoske. 'The Science of "Man-Eating" Among Lions *Panthera Leo* with a Reconstruction of The Natural History of the "Man-Eaters of Tsavo."' *Journal of East African Natural History*, vol. 90, 2001, pp. 1-40.
- Kirksey, Eben & Stephan Helmreich. 'The Emergence of Multispecies Ethnography'. *Cultural Anthropology*, vol. 25, no. 4, 2010, pp. 545-576.
- Latour, Bruno. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford University Press, 2005.
- Leakey, Louis S. B. *Adam's Ancestors: the Evolution of Man and His Culture*. Harper & Row, 1960.
- Lee, Richard. 'The Sociology Of !Kung Bushman Trance Performances.' *Trance and Possession States*, edited by Raymond Prince. Montreal: R. M. Bucke Memorial Society, 1967, p46.
- Macho, Gabriele A. 'An Ecological and Behavioural Approach to Hominin Evolution During the Pliocene'. *Quaternary Science Reviews*, vol. 96, 2013, pp.23-31.
- Marshall, Lorna. 'The Medicine Dance of the !Kung Bushmen'. *Africa*, vol. 39, no. 4, 1969, pp. 347-81.
- . *Nyae Nyae !Kung Beliefs and Rites*. Harvard Peabody Press, 1999.

- . *The !Kung of Nyae Nyae*. Harvard University Press, 1976.
- Noske, Barbara. 'The Animal Question in Anthropology: A Commentary'. *Society & Animals*, vol. 1, no. 2, 1993, pp. 185-190.
- Packer, Craig. 'Lions'. *Current Biology*, vol. 20, no. 14, 2010, pp. 590-591.
- Packer, Craig, et al. 'Conservation Biology: Lion Attacks on Humans in Tanzania'. *Nature*, vol. 436, 2005, pp. 927-928.
- Packer, Craig, et al. 'Fear of Darkness, the Full Moon and the Nocturnal Ecology of African Lions'. *PLoS One*, vol. 6, no.7, 2011, e22285.
- Patterson, Bruce. *The Lions of Tsavo: Exploring the Legacy of Africa's Notorious Man-Eaters*. McGraw Hill, 2004.
- Patterson, John H. [1907]. *The Man-Eaters of Tsavo*. Reprint. Stillwell, 2005. Digireads.com.
- Rushby, George G. *No More the Tusker*. W. H. Allen, 1965.
- Saberwal, Vasant K., et al. 'Lion-human Conflict in the Gir Forest, India'. *Conservation Biology*, vol. 8, no. 2, 1998, pp. 501-507.
- Shapiro, Kenneth J. 'Understanding Dogs through Kinaesthetic Empathy, Social Construction, and History'. *Anthrozoös* vol. 3, no. 3, 1990, pp.184-195.
- Smith, Andrew B. 'On Becoming Herders: Khoikhoi and San Ethnicity in Southern Africa'. *African Studies*, vol. 49, no. 2, 1990, pp. 51-73.
- . 'Ethnohistory and Archaeology of the Ju/'hoan Bushmen'. *African Study Monographs*, supp. 26, 2001, pp.15-25. doi.org/10.14989/68410
- Suzman, James. 'Etosha Dreams: An Historical Account of the Hai//om Predicament'. *The Journal of Modern African Studies*, vol. 42, no.2, 2004, pp. 221-238.
- Temple-Perkins, Eric A. *The Kingdom of the Elephant*. London: Melrose, 1955.
- Thomas, Elizabeth M. *The Harmless People*. Knopf, 1959.

---. The Old Way. *The New Yorker*, 15 October 1990, p. 78.

---. 'The Lion/Bushman Relationship in Nyae Nyae in the 1950s: A Relationship Crafted in the Old Way'. *Anthropologica*, vol. 45, no. 1, 2003, pp. 73-79.

---. *The Old Way: A Story of the First People*. Farrar Straus and Geroux, 2006.

Tomasello, Michael, Ann Cale Kruger, and Hilary Horn Ratner. 'Cultural Learning'. *Behavioral and Brain Sciences*, vol. 16, no. 3, 1993, pp. 495-511.

Treves, Adrian and L. Naughton-Treves. 'Risk and Opportunity for Humans Coexisting with Large Carnivores'. *Journal of Human Evolution*, vol. 36, 1999, pp.275-282.

Walker, Alan. 'New Perspectives on the Hominids of the Turkana Basin, Kenya'. *Evolutionary Anthropology*, vol. 11, no.1, 2002, pp.38-41.

White, Tim. D. and Donald Johanson. 'Pliocene Hominid Mandibles from the Hadar Formation, Ethiopia: 1974-1977'. *American Journal of Physical Anthropology*, vol.57, 1982, pp.501-544.

Wittgenstein, Ludwig. *Philosophical Investigations*. New York: MacMillan, 1968.

Yeakel, Justin D., et al. 'Cooperation and Individuality among Man-Eating Lions'. *Proceedings of the National Academy of Science*, vol. 106, no.45, 2009, pp.19040–19043.