



Inaugural Lilly Lecture of the  
Center for the Human-Animal Bond  
Purdue University School of Veterinary Medicine  
**The Human Side of the Human-Animal Bond**



Presented by

**Elizabeth Marshall Thomas**

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It's a great honor to speak to this particular audience about my favorite subject, which is the human-animal bond. To the millions of us who experience the bond, veterinarians are essential allies. So it's a special pleasure to be here with all of you. It's also daunting, because you are the ones with the real experience in that subject. However, I've ramped up my courage, and I'll start with the human aspect, because — believe it or not — we humans are a sort of paradigm. Such subjects are usually seen from the opposite direction — we look at animals to learn about ourselves. But these things work both ways, of course, and sometimes we do better in reverse.

Some aspects of the bond, of course, are hardwired. As for us, a small face with big eyes and thistledown hair says “infant,” and we automatically take care of it — or we want to. In the Serengeti, I once watched two lionesses who had killed a pregnant wildebeest. It was hot, and they rested for a long time before going for their meal. Eventually, one got up and went to the carcass, where she lay down and started eating at the belly. When she opened the belly, the uterus appeared. When she opened the uterus, a fully-formed fetus appeared. The lioness found the head, and nibbled open the membrane.

Just as if she were delivering a kitten, she licked the face clear, then worked the membrane into her mouth, down and around the calf's body until she finished at the umbilical cord, which she severed with her molars. That done, she licked the calf's face some more, and nudged it. But the calf was dead. The lioness eventually began to eat the mother.

This lioness seemed hardwired for delivering a baby — any baby. What would she have done if the calf were still alive?

We are often told that to bond with another species is against nature. We are told we should save our affections for other people. We are told animals are substitutes for children, as if we didn't know the difference. Thus, to the ignorant, a trans-species bond is a sign of social failure.

But nothing could be further from the truth. The natural world is filled with cross-species connections. Something as simple as a lichen is a mushroom and an alga. Then there are mushrooms and trees. Aphids and ants. And, to move up the line a bit, there are badgers and coyotes,

badgers and honey-guides, ravens and wolves, dogs and goats with captive elephants, Koko the gorilla and a kitten, and at least, in one instance in the Serengeti (as was mentioned in a scientific document and also in the media), a wild lioness and an antelope calf. No mention as to what kind of antelope. (Animal lovers “rescued” the calf, but later the same lioness was seen with another calf.)

Of course, food is associated with the bond. We hear of hunter gatherers who thank an animal they kill, because its carcass will feed them. I once watched a lion with the severed head of a kudu, which he held upright between his paws, grooming the face as tenderly as he would groom another lion. Because of you, his gesture seemed to say, I'll eat today. And I love you for it.

But the importance of food is also misinterpreted — those who say we shouldn't bond with animals will tell you that your dog likes you because you feed him. But bonding is not about greed. It's about life. In the natural world, all those who require bonds — from lichens to human beings — and who establish them when necessary — have a substantially better chance to live than those who don't.

If a bit of hardwiring is the first step toward establishing a bond, conditions are certainly the next. To see this, we might consider wild chimpanzees, who certainly form important bonds with one another, some of them quite temporary, but their bonding does not preclude threats and fights, and their groups are somewhat fluid. Their groups can afford to be fluid. In a rainforest, a group of primates can forage quite widely, with the same kinds of food more or less available to everybody. So from a fairly early age (compared to us) the chimps more or less forage in wide-open groups with everyone feeding himself or herself. Next day, they all move on.

It is now widely believed that we descended directly from chimpanzees, so we too once lived in the rainforests. But during the past ice age when much of the rainforest became savannah, our lineage adapted. About 200,000 years ago, our species was born on the savannah, and we needed to intensify our form of bonding. I'm not for a moment suggesting that chimpanzee bonds are somehow less than ours, just different, as their bonds suit a rainforest lifestyle, while ours

became adapted to new conditions.

Without the damp forest and all its liquids, we had to live near water. On the dry savannah, the water points were few and far between. And food was neither plentiful nor easily found. So our groups had to be somewhat smaller, and also, to a certain extent, more permanent. Because the food of an area governed its population, the area around a water point might support about 25 people (probably a smaller group than we formed while in the rainforest), and not everyone could forage regularly. So strong adults would provide for the young and old, and if necessary, also those who were injured or sick. Because the groups were so small, every individual was very important, including the elders, because of their knowledge and their multiple social connections. Connectedness became important if a water point went dry, which certainly happened. In that case, the group would travel together to another source. Thus, it was important that the people who owned the other source welcomed the newcomers. And why would they do that? Because of carefully tended emotional bonds, designed for permanence.

I was greatly privileged to see an example of our human version of savannah life (and with it, the reasons for our form of bonding) — the life that was lived by the San or Bushmen, the hunter gatherers of the African veld, in this case the Kalahari Desert.

I was part of a series of anthropological expeditions conducted by my parents in the 1950s. At that time, about 10,000 Ju/wa Bushmen still lived in very remote wildernesses, several hundred miles from the nearest post of so-called civilization. They had little or no contact with the outside world, and lived only by hunting and gathering. They had no domestic plants or animals, no manufactured items, no fabric. They took their existence entirely from the savannah. Archaeologists were later to find that some of their encampments showed continuous occupancy, with no significant technological changes, for at least 35,000 years, which is the Upper Paleolithic. If you think about it, if Europe had known a similar stability, the continent would still be covered with forest and steppe, the fauna would include Irish elk and lions, and little groups of people on the Dordogne River would

be painting the walls of their caves. Such was the antiquity of the Ju/wa lifestyle.

Our lives are nothing like that, of course, so how could the needs of the Bushmen tell us about ours? The Bushmen are called the First People. Through DNA studies of the Y chromosome, it is now believed the Bushmen were the original people and that everyone on earth today descended from Bushmen. Therefore, because there really is no other way for people to live on a dry savannah, the ways in which the Ju/wasi met their challenges were almost surely the ways of our ancestors — if not exactly like, then very much like — and this influences who we are today. Yes, we live in cities and suburbs, but we are only about 50,000 years away from the savannah, and, the 200,000 years we spent there earlier are still in our hearts.

Interestingly, the Ju/wasi had no bonds of any kind with any other species. To them, this was unimaginable. They treated animals very badly — one man, for instance, cooked a tortoise alive — but could they read animals! They could tell from far away what an animal was thinking and feeling, and predict with accuracy what it would do next. Hunters, of course, would use such information. As for emotional bonds, these were reserved for other people. And their need for these bonds was great.

So their culture focused on group cohesion. They had developed multiple cultural systems to diversify and increase their bonds, and they had strong mores for interpersonal behavior that would assure cohesion. Their kinship system and its derivatives, as well as the rules for marriage, all were meant to widen bonding relationships. And a variety of cultural rules and preferences supported the bonds. All important foods were invariably shared. Quarrels were ardently discouraged. If stress built up and threatened the unity of the group, the people might hold a dance on the night of a full moon to release stress and remove what they called “star sickness.” This was jealousy, anger, reluctance to share — all the things that caused dissent and threatened relationships. The Ju/wa dances were a function of the entire group. The voices and clapping of the women provided the music while the men danced until those who were healers fell into trance and removed the star sickness. The dance would last all night, drawing power from the rising sun, and afterward, interpersonal tensions would abate and people would feel better, and continue more harmoniously in their struggle to survive.

Relationships with other groups at other water points were also strongly fostered. For this, the Ju/wasi had a system of partnerships called *xaro*. The partners exchanged gifts, and in groups would visit their *xaro* partners regularly, some of whom lived up to 100 miles away. All this promoted goodwill and sharing, not only of gifts, but also of natural resources. The emotional

bonds, the welcome, and the need for welcome were symbolized by the gifts. Thanks to these emotional bonds, a population of about 500 people had access to a very widespread food supply — at least 6,000 square miles in the area we studied — and also access to at least 15 places where they could get water.

No Ju/wa person ever lived alone. Many a man might hunt alone, but no one could or would live alone. To have no bonds, to be outside the social fabric, was more terrible than death. An old woman once said to my mother, “It is bad to die, because when you die you are alone.” And if you somehow had to live alone, you would not live long, so death and ostracism (or abandonment) were almost the same thing.

Very rarely, someone would be marginalized. Anxiety about this was in everyone’s heart. The men did not give voice to their anxiety, but the women sometimes did, and would go on and on in a depressed, keening voice, not accusing, just saying over and over that others were neglecting them. I am sick. I am lying down — sick. If my mother were here she would give me some food, but others do not give me food — something like that, on and on. But we knew only one person — an elderly man — who was actually marginalized. He had never married because he had never successfully hunted, which was a prerequisite for marriage. Hunting required great skill and was very difficult — far from food and water, men could spend a few days stalking, then — because they hunted with poison arrows that took time to work — they could spend three or four days tracking. When they found their victim, they might have to fight off hyenas or even lions who were trying to take it, and then, depending on the distance, they might spend another day or two carrying home several hundred pounds of meat. But despite the hardship, on any given day, every man and boy was either hunting, or had just finished a hunt, or was planning another. Meat was the most welcome food, and not to hunt was extraordinary.

The unmarried man had therefore never been much of a contributor. I suspect that he had few if any gift partners. Thus, without a wife, children, in-laws, or gift partners, after this man’s parents and their families had died, he had no special connection to anyone except his sister. She more or less took care of him, sharing what she gathered, so he lived with her group, but only at its edge.

He was a lonely, depressed person, pretty much ignored by others, always at the outskirts of a gathering, always the last in a line of travelers, and when his sister died, he had no one. One day, many miles from camp, our family in a vehicle came upon him lying down, all alone in the veld, with night coming. Could he have been so lonely and despairing that he was offering himself to a predator? We couldn’t leave him there, so we brought him back to camp.

He seemed confused, and couldn’t tell us what he had been doing, and a few days later his group left, with him trailing. I’m not sure how long he lived after that. Perhaps he didn’t keep up with the others. When his people camped and noticed he wasn’t with them, perhaps nobody went back to look for him. People do such things for those to whom they are bonded, and for those to whom their relatives and gift partners are bonded. Essentially, that’s everybody. But not quite.

What happened to people alone in the dark veld? They were in danger. Hyenas monitor any group of nonhyenas to see if there’s a straggler — to say nothing of the other night hunters. Once, a waterhole went dry and the people had to move. With them was a man who had burned his leg badly. He couldn’t keep up, and when night came he wasn’t with the others. He was a capable person, so the others didn’t worry too much about him — he’d catch up later, they thought, or he’d camp and catch up in the morning. But during the morning, when he still didn’t come, others went back to look for him.

To their unspeakable distress, they found he had been eaten by several hyenas. The people could not imagine why this man hadn’t built a fire so he could shake a burning branch at would-be predators. But evidently, he hadn’t. His people buried what was left of his remains and mourned his loss. It was hard to imagine his terrible death, as hyenas see no need to kill their victims before starting to eat.

As for the man who never married, we saw his group later but he wasn’t with them. We never saw him again.

My mother, Lorna Marshall, wrote an ethnography of the Ju/wasi — *The !Kung of Nyae Nyae*. In it she says:

“The Ju/wasi are extremely dependent emotionally on the sense of belonging and companionship. Separation and loneliness are unendurable to them. I believe that their wanting to belong and be near is actually visible in the way families cluster together in an encampment, and in the way they sit huddled together, often touching someone, shoulder against shoulder, ankle across ankle. Security and comfort for them lie in their belonging to their group, free from the threat of rejection and hostility.”

Unlike the Ju/wasi, those of us in Western societies no longer need to try so hard for group cohesion, and as a result, we don’t have it, or not so much, and we can live alone, so some of us do. But although our culture changed, our emotional, almost biological need for bonds stayed with us. Perhaps in our hearts we see ourselves alone on the veld with night coming.

To a great extent, our own culture does not address our need. Our nuclear families normally have only one man and one woman, or in other words, one of each kind of person in a caretaker role. If these two wear on one another’s

nerves, neither has someone else to turn to. And we have few social mechanisms to remove our star sickness and make things right. But those of us fortunate enough to bond with a pet do have someone. Our pets give us what our ancestors gave to one another. This is why we bond with our pets, not because we are psychologically defective, or because they are substitute children. As a wise person has so cogently put it, “Our need for pets, which started with ‘nil’ among the First People, has now progressed to ‘social necessity.’”

I was once interviewed by Barbara Walters. She asked me if dogs went to heaven. Now I really wouldn't know. But I know how I'd feel, so I said that if dogs weren't there, it wouldn't be heaven. That was about 10 years ago, but I still hear myself quoted for that. Wouldn't you think people might remember something I had written? I've spent years trying to say serious things. But no. It's dogs in heaven. But maybe there's a reason for this. Heaven won't feel right unless we're in our culture, so we'll still be lonely, and we'll still need our pets. The question really gets our attention. Of course there are pets in heaven.

Of all of them, though, dogs probably meet our need for bonding better than any other. I mean no disrespect to cats or birds or even white rats. I mean only that dog ancestors and ours faced many of the same problems and solved them in the same ways. Therefore our needs are a match. In the 1970s it was again my privilege to join a research group — this time to visit the interior of Baffin Island. There, for part of a summer, I lived alone in a little cave near a pack of dog ancestors — two adult wolves, their three juveniles from the year before, and a litter of seven pups whom all the grown wolves were feeding.

I was constantly struck by the similarities between the wolves of Baffin and the people of the Kalahari. They both lived on a savannah — the wolves on a cold one — they both hunted in groups for animals larger than themselves, but they also foraged individually. For wolves, the equivalent of gathering is to snap up lemmings or birds' eggs as they look for something better. Wolves also lived in seasonal encampments — their dens — also near water.

While the pups were small the adult wolves would leave the den, go out and forage, and bring food back to others — again, the human paradigm. The mother was fed by the others while she kept her newborns warm. Later, all the adults cooperated to feed the pups, leaving one adult behind to baby-sit. The tundra was huge, prey was scarce, and hunting was as hard for the wolves as it was for us — yet the hungry pups were growing fast and needed the adults' best efforts. Here, in human style, the adult wolves put the needs of others ahead of their own. The adults would sometimes deprive themselves for the good of the pups — a wolf might regurgitate

a meal for them, but a bit later, in response to their begging, might regurgitate more, perhaps the food she had been keeping for herself. But for their sake, she'd go hungry. Perhaps this frayed their nerves. Now and then the mother would snap or show teeth to other adults (but not the pups, or not that I saw).

This group of wolves was as tightly knit as any group of Ju/wasi, because the history of their species might have resembled ours — their ancestors were something like jackals, and therefore might have lived in very small groups, meaning that, like us, the wolves would have had to upgrade their forms of bonding — in their case, to live in large, tight packs. Closeness seemed as important to them as it was to the Ju/wasi — when they met, the wolves would greet each other, the pups wanted desperately to be with the adults, the entire pack when far apart would often keep in touch by howling, and sometimes (for reasons hard to determine) they would howl communally. Once they did this in response to a worrisome event, which was our arrival near their den. Two wolves had seen us coming. They went back to their den and howled to bring in the others. When all were present, they howled together for a while, then took the pups and moved to another den, the one where I later watched them. They occasionally howled together on other occasions too, where I could see them, and it struck me that the activity might be something like a Ju/wa trance dance. At the den site, a wolf or two would start the howl, and others would join in, wagging and rejoicing as they approached the singers. It also seemed important that they sat together when they did this, rather than just joining in from wherever they happened to be. And they would acknowledge one another when they finished. No showing teeth, no snapping — they would push against each other and seem very agreeable. Perhaps the group howl — with everyone united and together — had removed star sickness and relieved anxiety and stress. Whether or not that was the intention, it did seem to be the result.

When the human diaspora came up from Africa perhaps 50,000 years ago and arrived in the northern regions, we surprised the wolves. But it probably didn't take them long to notice similarities. Perhaps they followed our hunters and ate the parts left behind after the kill. Perhaps they followed the meat to the campsite. Evidently, they didn't bother us too much — wolves do not seem to be a predator of people, certainly not in modern times. If this were true in the Paleolithic, the wolves would not have been a problem.

Perhaps they scavenged in our campsites. The fossilized scats of wolves have been found in Paleolithic camps — thus it would seem that the people accepted their presence. The people could even have benefited from it — wolves could have kept the camps clean of edible refuse, and they could have given warning when predators

appeared. They could also have become hunting helpers, or just joined in to take a few bites when the victim was cornered — which would inadvertently have helped the hunters. The attributes of dogs such as herding, pointing, and the like come from their wolf ancestors. Wolves are so very intelligent, and are such extraordinarily good observers, that they might have said to themselves, “If we give these men a hand, we might eat a little sooner. Why wait to scavenge?”

Wolves and people left the Paleolithic side by side. In the Neolithic, the experience changed both of us considerably, as we both lost our intense economic reasons for bonding. The people became crop-growing villagers and farmers, with the farms, not water points, as focal areas, and the wolves became pariah dogs, who scavenged. Feeding and caring for dogs is a new idea, relatively speaking, and it probably wasn't practiced by the Neolithic farmers, just as it isn't practiced today in third-world villages.

Therefore, big groups were counterproductive and separateness became desirable. In an Namibian bush village some years ago, I watched six skeletal dogs scavenging, to see how much food they got. I knew it wouldn't be much, but even then, I was surprised by how little. They hid most of the time, because people threw stones at them, but every so often one of them would sneak around, sniffing here and there, showing his teeth if another dog came near. During the day, one dog was able to lick the inside of an empty cooking pot before someone hit him with a stick, while another dog found and ate a lump of something the size of a walnut. As far as I know, the other four dogs found nothing. I suspect they all ate human feces, but didn't see this. The scarcity (and quality) of their food made scavenging very competitive, best done as those dogs did it, privately and individually, and as far from any other dog as possible.

One night, a leopard sneaked into the village. Perhaps he was hunting for a dog. Anyway, the dogs didn't like him. All six of them instantly formed a pack and chased him away across the veld. Fortunately, leopards are not brave, and I suspect that the dogs put this one up a tree and kept him there all night. They didn't come home until daylight to resume their hopeless scavenging.

The Neolithic life still shows. Pariah dogs, like dingoes, tend to keep more distance from one another than wolves do, and they band together only to repel intruders. But the need to bond stayed in their hearts just as it stayed in ours. When the chance came, when dogs became pets, their long-suppressed need for bonding could reassert itself. It's interesting to note that many dogs bond better with us than with each other, probably a holdover from the Neolithic. After all, we aren't competitors. Dogs want “to belong and be near.” They still know, in their wolfish hearts, what it is to be alone on the

tundra. And they know what it is to nurture a bond — having kept this knowledge since wolf times. They show their love readily, and seldom make us feel rejected, or the object of hostility.

And now, for the cats. Cats came to us in a very interesting package — 8,000 years ago in the grasslands of the Fertile Crescent (Iraq and surroundings) when we domesticated the grasses that became our grain, the mice and rats who ate the wild grains followed the seeds into our granaries. And right behind them came the little tabby African wildcats that ate the mice and rats — *Felis sylvestris lybica*. And what do we have today in our houses? We have the descendants of the species that we collected in the Fertile Crescent.

The wheat in our bread was once the Fertile Crescent grain. Brown house mice are the Fertile Crescent mice. Norway rats are not from Norway but from the Fertile Crescent. And domestic cats are just another version of *Felis sylvestris lybica*.

I'm not sure how many of you have Norway rats in your houses, but if you did, your home would hold an entire little 8,000-year-old ecosystem from the other side of the world.

In questions of the bond, cats may be the most telling animals of all, because in the wild,

most of the cats don't live in groups. If people and wolves need to cooperate, cats (like pariah dogs) need to spread out, because they hunt tiny animals that are scattered far and wide. A mouse or mole feeds just one cat at a time — to get a full stomach, a cat must catch several of them. They do this better if not competing. So each cat wants its own private hunting preserve. However, like us and like dogs, cats bond if conditions are right. Lions bond of course — if possible, they hunt cooperatively for animals large enough to feed many of them together. That being so, they need one another to corner these animals. The females of a pride are related — they stick up for each other, and even nurse each other's kittens.

Farm cats also form little prides, also with related females who share childcare, but here the paradigm is not lions but people, as the barns, like our ancestral water points, are the central features. Milk from the cows, and abundant mice and rats in the feed bins, keep the farm cats centralized. Yet their Fertile Crescent past is with them too. A cat can be alone much better than a dog can, without having a panic attack. Oh well ... they're gone. Never mind. Maybe I'll watch birds, out the window.

In closing, I would like to think about a

circle. There's something wonderful about a circle. It's a 360 degree sightline that serves very well in an open space such as a tundra or a savannah. The Ju/wasi placed their shelters roughly in a circle and when they stopped to rest, they never sat side by side but always formed a kind of circle. That way, you can see what's coming behind the other guys, and they can see what's coming behind you. You've probably noticed how cows or sheep in a field lie down together but face in different directions? Even birds on a telephone wire face both ways unless they're facing a storm.

So when you get home and get into bed, and your dog gets up with you, he might snuggle up at first. This will relax you — you'll feel the sense of belonging, of closeness, like the shoulder to shoulder, ankle across ankle, that our ancestors once needed. But during the night, the dog will almost certainly turn around and face in the opposite direction. Your eyes and ears are at one end of the bed, his are at the other. That way, as the dog sees it, you cover both sides of the room. That's the tundra speaking. And he's right, of course. Both of you are safer.

Thank you.



Ramsay Thomas Photo

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In 1993, in the elegantly simple 146 pages of *The Hidden Life of Dogs* anthropologist and author Elizabeth Marshall Thomas distilled 100,000 hours of canine observa-

tion (much of it on her bicycle around Cambridge, Mass., observing her roving dogs), a wealth of insight from years of studies of primitive civilizations' relationships with the canine species, and 30 years of evolution among her family's "menagerie" of dogs, wolves, dingoes and cats.

The result was breakthrough insight into why dogs behave the way they do. *The Hidden Life of Dogs* spent 10 months on the *New York Times* bestseller list as more than a million nonfiction readers embraced Thomas' moving commentary on the relationship between dogs and the bond they share with humans. She entered her subjects' consciousness with both the keen eye of an anthropological observer, and her special vantage point as their "human."

With the book, Thomas raised the nation's consciousness about dogs' behavior, spawned legions of authors who sought to duplicate her success and found a swelling audience for the "window to nature" she opened when giving voice to subjects who don't speak "our" language. And she's been doing that ever since with an enviable array of thought-provoking and insightful books (bibliography at right). In her 2006 book, *The Old Way: A Story of the First People*, Thomas shows how the skills and customs of the hunter-gatherer share much in common with the survival tactics of animals. Her novels of Paleolithic life, *Reindeer Moon* and *The Animal Wife*, and her "cat

book," *The Tribe of Tiger: Cats and Their Culture*, also became best-sellers and drew critical acclaim.

Born in 1931, Thomas was mad about animals as a child. She enrolled in Smith in 1949 (Sylvia Plath was a classmate) but was quickly uprooted when her then newly retired father, Lawrence Marshall, co-founder of Raytheon, and English literature teacher mother moved the family to Africa's Kalahari Desert to live among the !Kung Bushmen. The Marshalls were the first white people to live among the Bushmen.

An anthropologist family friend suggested she study the Bushmen and steered her toward a new focus for her education at Radcliffe College. There she began writing about her experiences with the Bushmen and would discover her calling — giving voice to those that cannot speak. Thomas was one of four distinguished writers Harvard recognized in celebrating "The literary life of the Harvard Class of '54." Her first book on the Bushmen, *The Harmless People*, debuted in 1959 and is still in print.

Thomas is the inaugural lecturer in the Lilly Lectureship Series. The series is endowed through a \$250,000 gift to the Center for the Human-Animal Bond at the Purdue University School of Veterinary Medicine by Eli Lilly and Company. The series features world-renowned speakers, who broaden the veterinary profession's understanding of the human-pet bond.

**Major Literary Works by Elizabeth Marshall Thomas**

- The Old Way: A Story of the First People*, 2006, Nonfiction
- The Social Life of Dogs: The Grace of Canine Company*, 2000, Nonfiction
- Certain Poor Shepherds: A Christmas Tale*, 1996, Novel
- The Tribe of Tiger: Cats and Their Culture*, 1994, Nonfiction
- The Hidden Life of Dogs*, 1993, Nonfiction
- The Animal Wife*, 1990, Series
- Reindeer Moon*, 1987, Series
- Warrior Herdsmen: The Story of the Dodoth Tribesmen of Northern Uganda*, 1965, Nonfiction
- The Harmless People*, 1959, Nonfiction