

## THE CHALLENGE OF CREATIVE LEADERSHIP

Gottlieb GUNTERN

Jane GOODALL

**Ethologist, primatologist and anthropologist, author, UK / Tanzania**

Introduction by Gottlieb Guntern

Poetry is made up of a lot of varied things. It is a specific power of expression combining playful imagination, metaphorical language, vision, rhythmical flow, musical sound and much more. Poetry is a gift that not all know to appreciate, particularly within the scientific community. During the Renaissance, when science began to contest some of the teachings of the Church, it tried at the same time to get rid of metaphorical language and certainly of poetic expression. If you read a scientific article today, it is most often written in very dry language, which in its attempt to be utterly precise, has become withered and insipid.

Now chimpanzees are much better at poetry. One female chimpanzee was taught the American sign language of the deaf-mute. She not only learned to master quite a lot of different expressions, she learned, if this is the term, how to combine them in a poetic way. When she was presented with an Alkaselzer drink for the first time in her life, she immediately called it "sing-drink." Isn't that a beautiful poetic statement? Another one called a cucumber a green banana. Many great scientists - Darwin, Einstein, Schrödinger and others - used a language of poetry. But most scientists do not. Now I shall read a passage from a book by a famous contemporary scientist.

"All around, the trees were still shrouded with the last mysteries of the night's dreaming. It was very quiet, utterly peaceful. The only sounds were the occasional chirp of a cricket, and the soft murmur where the lake caressed the shingle, way below. As I sat there I felt the expectant thrill that, for me, always precedes a day with the chimpanzees, a day roaming the forest and mountains of the Gombe, a day for new discoveries, new insights.

Then came a sudden burst of song, the duet of a pair of robin chats, hauntingly beautiful. I realized that the intensity of light had changed: dawn had crept upon me unawares. The coming brightness of the sun had all but vanquished the silvery, indefinite illumination of its own radiance reflected by the moon. The chimpanzees still slept."

This is the introduction on page 1 of the latest book by Jane Goodall, *Through a Window*. It is a little Magnum Opus. It combines precise scientific observation, cognitive conceptual model-building, metaphorical poetic language and the deep wisdom of a scientist who for more than thirty years has



shown excellence in creative performance in a most unusual way - even in the world of highly creative scientists.

**Goodall:** How exciting that the idea we discussed ten years ago is now a reality! As I am the first speaker, let me set a biological setting for our Symposium on "Playful Imagination and Creativity." First, I should like to bring you a greeting from the chimpanzees. You, Dr. Guntern, mentioned that I was poetic in my writing. Well, this greeting shows that the chimpanzees can create a sort of poetry - though perhaps "song" would be a better description. (Imitates chimpanzee panthoot): "Huuu-hu-huuu-hu-huuu-hu-huuu!" This is the closest the chimpanzee comes to singing. The call is made in the evening when all is well in their world. They call back and forth, from one nesting group to another and, as I said, it is their version of singing.

Let me begin with four stories. The first is about a young male elephant. He would at times station himself on a path that was used by buffaloes when they went to drink each day. He would hide in the undergrowth and then, as the buffaloes appeared, burst from his hiding place and charge towards them, ears out, with a great trumpeting sound. Startled, they would scatter in all directions. At the time there were no other young elephants in his herd with whom he could play.

The second story is about a little boy who occasionally hid nasty things in a friend's bed - we call that an "apple pie bed." Then the boy would hide to watch his victim 's startled reaction.

The two stories have one thing in common: the element of surprise. The buffalo did not expect, when they went down to water, that an elephant would charge them (at least, not the first few times), nor did the boy's friends expect to find unpleasant, slimy things in their beds. Clearly, the little boy demonstrated the ability to plan and used his imagination. What about the elephant? Was he, too, demonstrating a capacity for imagination and planning? Surely to suggest that this was so would be anthropomorphic, unscientific in the extreme! Certainly most of those studying animal behavior, until very recently, would have held this view. Some still do.

The next two stories concern a different kind of playful imagination - play with words, making jokes. In a joke, it's the punch line at the end that makes us laugh, because, as was the case in both stories above, it is unexpected, surprising. This first joke fits into the theme of my talk. A man bought a young dog. He took it for a walk in the park. Presently they came to a river and the man picked up a stick and threw it into the water. The little dog ran across the surface of the water, picked up the stick, ran back and dropped it at his master's feet. The man, thinking he must be dreaming, picked it up and threw it again. And the little dog ran over the water and retrieved the stick. The dog's owner, unable to keep this amazing phenomenon to himself, approached a passer by: "Hey, look at this. I've got the



most amazing dog. Watch!" he said, throwing the stick. The little dog ran over the water and fetched the stick. "Huh!" said the passer by, "Your dog's no good - he can't swim!" (Laughter)

That story surely demonstrates a type of playful creativity that is unique to humans - or is it? This fourth story concerns a lowland gorilla, Koko, who is well known in America for her ability to communicate using American Sign Language, ALS. Her trainer, Francine Patterson, claims that she knows over 700 signs. One day a new student, fluent in ALS, was rehearsing Koko on her knowledge of signs for the different colors. Koko had been taught all the more commonly used colors and knew them well. The young woman picked up a white napkin. "What color this?" she signed. "Red," answered Koko, without hesitation. "Come on Koko, you know better than that. What color?" replied the helper. "Red," signed empathetically. "Koko, if you not tell me correct color, I not give you apple juice," signed the exasperated student, sure that Koko was making fun of her. At that threat, Koko reached out for the cloth, picked off a *tiny* piece of red fluff, held it out towards the young woman, and, laughing, signed "Red! Red! Red!" (Laughter)

Where, after all, do we draw the line between human and non-human? When I began my research 34 years ago, I was studying ethology in Cambridge, England. If I had, at that time, wanted to make a study of the animal mind, I would have been told that animals did not possess minds, in the usual sense of the word. It was not always so. In the early 20's both Wolfgang Kohler and Robert Yerkes published results of their studies of chimpanzee intelligence. The apes were given a variety of problems which, it was asserted, they solved by reasoning and even imagination. Their results, however, were not generally accepted by the scientists of the time. Pavlov wrote that such studies were anthropomorphic and "disgusting." The American psychologist, Watson, proposed a strictly mechanical process to explain apparently intelligent acts in non-human beings. Animals, he maintained, were incapable of reasoning; they functioned through innate responses to stimuli. Even though it might appear that they had minds, it was not so. Nor did they have feelings - despite similarities in the brain and central nervous system. Only human animals, it was held, felt real pain if burned or beaten. Animals might *look* as though they felt pain or experienced feelings of joy or sadness, but to suggest that they actually *did* so was anthropomorphic fallacy. In 1960 it would not have been possible for me to have studied the mind of the chimpanzee within the ethological framework acceptable to British science at the time. As for any suggestion that non-human animals might be capable of imagination... witches in the Middle Ages were burned for lesser heresies.

**Saemann:** The slides showed beautifully the importance of play for the chimpanzees to learn, to grow up, to become. If we make an analogy for human animals, the schooling process from kindergarten up to university or through university, the element of play in this process of learning and becoming, have you given some thought to applying the rules learned with chimpanzees to our human education processes?



**Goodall:** I have recently become involved in education - conservation education and teaching people about the true nature of animals. We are dealing with pre-school up to university. The role of play is very interesting. Particularly in the United States teachers are beginning to realize that what is fun is learned more easily than what is absolutely boring. Yet I think you can go a bit too far in efforts to make everything fun - we need a happy medium.

We had a meeting of environmental educators the other day, and there was one absolutely incredible man from Oklahoma who has been working on teaching children of different ages about the environment. He has established a number of clubs and then moved on to another school. Somebody asked him: "Tim, how is it that when you leave, your clubs last and when anybody else leaves, the club disappears?" He replied: "It is because I made the clubs fun. If the kids don't get fun, they're not going to bother to go and do things like clearing up litter and all the hard work of planting trees. But if you reward them with fun, they will do those things." So, yes, I am thinking a lot about making things fun. I think fun is a desperately important part of our lives. If we do not have fun, if we do not have a sense of humor, we just may as well give up and dig a grave and jump in.

**Guntern:** But you also apply what you have learned with the chimpanzees to get in touch with street gangs, deprived youngsters. Could you expand a little bit on that?

**Goodall:** This does not completely have to do with play. We had a little conference in Connecticut. Among the forty children there, who came from six different states, mixed ethnic groups and social-economic backgrounds, we also had seven black kids from the inner city of New Haven, who joined the group at the last minute. Somebody asked if they could come and they did not know what it was about. They did not know why they were there. They had no teacher with them, and they did not want to join in. When I finally got them on their own, what they were fascinated in, was the chimps. The moment we began talking about the chimps and relating chimp gang warfare to their gang warfare, they were interested; more so by the fact that for young male chimps violence and aggression are fun, they seek it out, even though they are frightened. I asked them if it was like that for them and they said, yes, that they were fascinated, but frightened. They would have actually liked to give it up, but did not know how. For them, all this was part of learning about the chimpanzees. I was using the chimpanzee as an entry into those kids. They looked at some of the National Geographic films and saw me as a peculiar Beauty-and-the Beast figure (laughter in the audience). They were fascinated, you know. Who is this peculiar woman? I mean, how does she work and why does she do it? We made the whole thing fun. When I talk to these kids, I demonstrate calls and tool using and show what it is like if drive ants bite your feet. I do all kinds of silly things, and they get very tuned in, turned on, or whatever the word is.



**Dr. Sigg:** You created a dilemma in me today and perhaps you will be able to help me out. It has to do with your last notion. My first observation is that this is a very harmonious world, an ideal world, the chimps live in, provided that there is no interference from the human animal, no thinking. Observation number two is that our world is totally inharmonious, far from ideal, yet infinitely more creative. I mean, we are having a Symposium where we talk about chimpanzees, they are not having a Symposium talking about us. Now, these two observations only have a value if it is true that the chimps and ourselves descend from the primates. My question is, what went wrong or what started the differentiation between us - the human animal - and between the primates, at some point of time in the past? Could creativity have something to do with it? I put the question to you because yesterday you mentioned that a population of chimps in a certain place found that they could eat ants, yet another population was not able to do so. Could creativity have something to do with this differentiation if there was one at some point of time?

**Goodall:** If I could answer your question I would be very famous indeed, because that is a question that has been exercising the minds of many very well-known paleo-anthropologists. Anthropologists - anybody interested in human evolution - has pondered over this. What was it that set us on the road to becoming the very unique species of primates that we are? There have been many theories put forward. One theory, which is more or less disregarded now, is that it was because this was the only niche that we could occupy in a rather hostile world. Having no claws nor fierce teeth, we had to exercise our minds in order to escape danger; and of course, the more you use something, the better its development. A number of people have suggested that we learned to talk because we became hunters. We had to communicate our plans as to where to go, where to meet afterwards, and so forth. Clearly, this is not a compelling reason; there are many really good hunting animals which do not talk. Nor do they need to: they pass signals to each other. Indeed, it seems to be important *not* to vocalize since this might alert the prey. And animals certainly do not need to talk in order to meet up at their home base.

But we must assume that some kind of environmental pressure acted on the group of pre-human primates that eventually evolved to become human. We now know that there were many other kinds of pre-men or ape-men, which became extinct, probably because of one group killing off the other. We know how very aggressive chimpanzees can be to individuals of other groups and how very aggressive we can be to "non-group" members. Darwin even suggested that it might have been interspecific conflict - war - that led to our increasingly sophisticated human brain; the clever groups, because they could make better plans, killed off the less clever ones. In other words, smart thinking helped to ensure survival.



Humans and chimps differ genetically in the DNA structure by only just over one percent - a remarkable fact. Indeed, there are many striking similarities. which help to pinpoint ways in which we differ. The most important of these, I believe, is that we, and only we, have developed a sophisticated spoken language. Chimps have the cognitive ability to learn human types of language - not involving speech, but using signs and computer key boards and so on. They can understand many words of human speech; but they have not developed a way of communicating sophisticated ideas. It was Konrad Lorenz who said that once you have words, you can teach other people in your group, you can teach your children about things, about objects and about events that are not here physically at the time. And that is something that chimpanzees, as far as we know, cannot do. The young ones can learn about things that are going on around them, but the mother cannot tell her child about what to do in this situation or that situation. She cannot say, "Last year at this time something bad happened over there," My belief is that it was because we developed language that we gradually developed an ever more sophisticated intelligence.

I suspect - at least, speaking for myself! - that playful imagination and creativity have led to theories as to how we developed language, why we developed language. I have mentioned one theory - hunting. I personally do not think that is a viable suggestion. It is not really very imaginative, and not particularly creative. The theory I have come up with is at least as good as that of anyone else's. And it is also an idea that is fun, an idea that is playful!

Let us start by imagining what happened when, at some point, early humans lost their hair. First, how would this effect the mother-child relationship, the relationship that is, I believe, at the heart of social interactions? So many of the postures and gestures of the adult communication system in chimpanzees can be seen to originate in the communicative signals that pass between mother and child. What would happen if a chimpanzee mother suddenly lost her hair? For one thing, her baby could no longer cling to her, and the mother would have to support the child. At Gombe there was a chimpanzee female who got polio and lost the use of one arm. When she subsequently had an infant she had to support it very frequently as it was a sickly child, not able to cling very well. As a result, and because she only had one functional arm, the mother had to walk upright a good deal of the time. Could the loss of hair add a new factor to the discussion of why we humans developed our strange upright stance?

Let us imagine a pre-speech ape woman who has lost her hair. Perhaps it was due to a mutation - no one knows. (There is a theory that postulates that we lost our hair, like hippos and seals and whales did, because we went through a stage when we lived in the water, but that seems a bit far-fetched). Anyway, for whatever reason, her hair has gone or almost gone. She is supporting her child. She may be carrying something, like a tool, and she has moved out from the trees and into the long grass of the savanna - where early man is thought to have developed in Africa. Now let us imagine that she



stops to do something, such as collecting food with a digging stick. She would need to set her infant on the ground, since it cannot cling. She might even, as she worked, move just out of sight of her child. This would create a quite new and very powerful need for more sophisticated auditory communication signals between mother and child, specific messages from the mother, like "It's okay, I'm here." The infant would also benefit from the development of more specific vocal signals to convey its wants. This kind of auditory communication is almost completely unnecessary between a chimpanzee mother and infant because the mother *feels* the needs of her infant - if it starts to slip, or wants to nurse, or something. Anyway, that is my theory, and, as I said, it is as good as any other.

