Interview Thelma Rowell

First tape

15:40: “Good morning turkey! And the go Glouglouglou!
(to link with 28:26: Glouglouglou!

16 :15 : sheep.
This is the soy sheep. They are very wild and need little care or attention, really. This is the way I see them, every morning I put a role dishes of food and they all come in and get the breakfast. And if anybody is sick or need attention, I can catch them. It is no way I can watch them when it’s out in the field. And I wanted more or less natural; in a natural flock you have more or less the same number of males and females and I have been keeping that too, except that my oldest tops died this summer, they were 9 years old. I only have 3 adult males, and I don’t want to bring any sheep in.

17:43
So there are 3 adult males and 8 females, ewes, and 12 lambs. (17:54)

18:01
This is the time of the year, the males and the females live completely separately. They have different social systems. The males are very friendly with each other; when they are sitting in the field they will be sitting much closer together then will the ewes; the ewes will be spread out each with her own lamb sitting with her, the tops will be close together even resting their head on each others back, very friendly (18:46)

18:52 – 19:35: same
19:35
What I can’t see in this field because it is too small is the way the group organize; who leads, who follows, who decides where they all go. And it was something we could look at in Californian study where it was a lot of space. And the story was a bit different for the 2 sexes. In both sexes, age was important; among the ewe it was always the senior ewes who lead the flock and who was making decision about where they went to eat next; among the males, it was less distinct and there was also more discussions about who would lead.
And then, you watch the group of 12 tops and they would have been sitting for an hour and you could make something out of who is sitting next to whom (…). And then, somebody would get up and point, stand some sort of like this (Thelma makes the gesture of pointing the nose), and maybe nothing happens. Maybe somebody else gets something and point this direction (T.R. points) and eventually everybody get up “this is time to get up”, and then they will go. As soon as they start looking at one, may be follow.
The ewes, there were never discussion. It was always the senior lady who lads. When the flock were together, which happens sometimes, the top would follow the ewes, the ewes would make the decision for the whole flock (21:48)

21:51

If you like, there is a political discussion among the tops about who is going to make decision. But the ewes, it is quite clear that it will be the old lady.

22:06
It is quite funny, when the ewes lamb, they use to go off in the bushes, and you wouldn't see them for a week, and then, they bring the lamb back into the flock. They all lamb more or less at the same time. So, when the old lady went off to have her lamb, it was the next senior lady who took over and did the leading. Until in the end, there were no ewes left but one ewe and she would be leading the juveniles who haven't lamb around with her, and then, slowly the old lady would come back, and then all things would reestablish. (22:47)

22:50
This whole business of leading and following is something which I never got the sense of among monkeys, it seems to be something which sheep do which monkeys didn't apparently have. It is quite interesting because you quite often see the flock and the old lady would be eating let's say the head of a particular grass and everybody was doing the same and then she had enough and she sat off and immediately, they drop out what they were doing and followed her, and then they went to where different sort of food on another place. The thing that strikes me: there is absolutely no coercion about that. You don't have to follow the old lady, she is going anyway, you are going to follow but if you don't want to follow her, and you don't need it and you can cope with the (caillotes?) on you own. So the idea that I have seen written about somehow the hierarchy had to hold together the group, there is an alternative; certainly not for sheep, and not for monkeys as well.

24:03
The problem with sheep behavior, look at the literature: it is all about food. What people who study sheep for agricultural purposes are interested in is what the sheep eat and how much they eat. A lot of primate's literature also concentrates enormously on food, and on who gets food. The problem is that you can watch animals eating very easily. What is much more important to the animals (24:48) is much rarer and that's predation. It seems to me that this whole business of food, and the competition for food has been much exaggerated because that's what is easiest to see; whereas I think actual important things is whether you get eaten yourself and this is much more what determines the (organization) of the group. (25:25). And it is underestimated because nobody sees it! And you don't see that partly because you are there! It is a fulfilling thing! You know when I was working in Katamego the monkeys eating eagles were around overhead , you could hear them calling; but if they look down, of course they have very good eyes sight, they see a face looking up (T.R. shows the gesture of looking up with binoculars), which is very off putting if you are thinking of catching a monkey. And then, they went and caught other monkeys, somewhere else. I think actually to the point whether a reason why a monkey eventually got tamed because in some sense they realize that, by allowing us to be with them, they were being protected from the eagles.

26:24
There is much more awareness than the people than the people watching them are aware of.

26:34
That's the way sheep flock stay together because if they wouldn't stay together, they would get eaten. Just by being together, and being aware, that many extra pairs of eyes, they are going to see the predator sooner. (26:50)

26:59

There was a study by Geist on the Rocky mountain sheep which is a totally hierarchy based study; it all goes, so much you couldn't believe it , with the size of the horns, the females who have little horns right at the bottom of the hierarchy. It is just, his sheep didn't behave quite differently from my sheep. But I think part of it, he mainly watched it in the rut, when they are mating, and you do get a change in them: that's the only time of the year that I have seen the females follow the males. This is what he described as happening routine: the big male was leading; not that eleven and half months of the year, it is the old female who leads. But he also picked out this importance of leadership, who goes first: it is a role that is important. (28:00)

28:33: How to construct an ethogramm?
You just notice it. It is repeated and you notice it. Before they move off (…) the first you see sheep moving, certainly. And you don't know how to predict it, and then, as you watch them, you notice that every time somebody is getting off and is pointing, which is quite an exaggerated pose for a sheep, and some of them are (…?). When a sheep is being very friendly to another, it will rub his horns on the other's face or horns, or face on face; I identified that as reconciliation. Geist interpreted as hierarchy gesture. That is interesting, he was absolutely correct in classical ethology's theory because you see it associated with fighting, so you see the closest other behavior is aggressive, so he says "right, it is aggressive". Now, reconciliation hadn't come in, we are eternally grateful to de Wall for bringing that. Because, once he did that, it is one of the things : "Of course, why didn't I see that? It is everywhere!". And the sheep will do that, they will clash, or they will hit somebody, and then, you see, they are rubbing their faces. And, even more interesting, I have never see that for monkeys yet, you see them rubbing their faces and horns, and <u>then</u> fight. And it is almost as if they have very hard work keeping friendship together during the rut. They are not friends during the rut, but I get the impression, it is very important to hold the group together and it is a way to say " I've got to fight you but it doesn't really mean I don't like you". "I am going to fight you NOW but I like you really" (30:53)
30:59
You see starting, just about the time, next month, when the night are getting a bit shorter, about the time you see the sheep change their behavior, and you see a lot more of face's rubbing among the tops, then you begin to see a bit of shoving, of pushing, of fighting. And it gradually builds up and the 2 things, the friendly behavior (I interpret it friendly) plus the fighting, and they are getting full scale, fighting, even the mating is not going to happen the middle of November, November 15th. So they are building up over this, through 3 or 4 months, getting more and more intense. And the ewes are watching, and I think one of the functions of the fighting is coordination, or the result of fighting is coordination. The females take a keen interest to the fight. When you are doing this (T.R. hits hands loudly) it makes a lovely loud noise. And if somebody is fighting here, the ewes will come running to watch. And so I said, all right, let us say that it is not a fight, this is a display. How could a sheep make a loud noise by himself? It is a sound one-hand clapping, you can't do it, but with 2 of them, you make a spectacular noise and the visual display. And it is very exiting to the ewes, and they all coming and eat together, and then, it's all over. (32:52)

Picture.
Goats.

38:48
The context is all important. It might be part of the communication itself, but it is certainly going to determine what is communicated; so you have to look at that, and you have also to realize you are in the scene as well. And particularly with domesticated animals like this. Of

course, I am the provider of food, I am the person who (harry?) things, I draw attention of course: it is absolutely critical you keep an eye on what I am doing! (39:18)

40:43 – 40:58: Thelma going up the hill. Pretty pictures.

45:05
It is a difficult question, given that we eat lambs. The more we know about sheep, the more we know about behavior of all the farm animals, the more we know we ought to be doing, it will be very difficult to be a commercial farmer. If you are paying attention to what pigs like, to what sheep like, there are some compromises that are possible, and changes are happening, but intensive farming is the opposite of what any intensively farmed animal would prefer. We are not going to get completely behaviorally sensitive farming, it would be a contradiction, what you get to go is some sort of acceptable compromise. Some things are changing.

46:05
One other thing, which is interesting, is that nobody knows anything about the behavior of adult male farm animals. Because you simply don't see them. Because 95% at least of all the males sheep never go beyond 3 months of age. And it is the way they select it which has nothing to do with the way the ewes would select them as far as breeding goes. So you get this continuous distortion. This astonishing thing about farm animals is that they seem to retain the ability to behave in a natural way. (46:50)

49:01
Sheep are particular problem because they can't really effectively protest. A cow you have to treat with a little more respect because they are bigger than you are. Sheep, you can do what you like, they don't make any obvious protest, they just get miserable (49:24).

54:38
You can read a lot from the arrangement till (?) them. You find that the very nearest neighbor of a sheep is going to be its lamb; it's nest nearest neighbor, it is going to be its daughter or its mother; and the nearest neighbor of a male will be another top. The young males are funny because they are very interested in the tops, and they sort of like to join them but, in the other hand, they are a bit scary and you have to keep going back to mother for a little bit of reinsurance.
You get cooperation, whether it is intentional or not, I have seen the sheep doing it as well in California particularly. Because they work together, (they put) a full foot over a branch and pull it down and other sheep can eat from it as well as ewe, and they work sort of together, each independently looking for the best branch but collectively means that more can be managed by that flock that any individual could manage by itself. (57:15).

End first tape.

Second tape

00:00 – 12:08: pictures

12:08
I think this is true for all animals and you take for granted anyway the way animal organize the space that they have available, the facilities that they have available, and it is, in this sense, part of the social setup. The human people talk about in terms of bad thinks, about tower block and flats, and terrace houses and back houses, and I think the same is true of all animals, not only obviously mammals, but snails, a snail has a place where he lives and he knows what there are, what is available in any direction, and it uses according to what it needs. And then, of course, the mammals can move much faster and cover much more ground and can make it more elaborated, much more use of the space, they organize it, they organize it by building paths like that, and they are building places that are good for grazing (13:25)

13:43
There is enough place so they spread themselves out, so the top are our near, and they won't be with the sheep, lambs are boring. They are busy eating, sleeping, laying on fat, (…) so they are better off without the ewes until ewes come on heat (14:11)

14:15
On a bigger place of course you see more elaborated use of it, you get more vary vegetation, so you are moving. I don't think grazing animals really appreciate a beautifully manicured field of pure grass: it is boring, it's like eating nothing but rice pudding forever (14:94). So, they will move from different parts where there are different things to eat. It is quite complicated because they also eat what their mother show them as good to eat, which has been nicely demonstrated (14:56) (…).
They will know from other animals they know better than stranger, from older animals better than their age mate, all that can be experimentally demonstrated to satisfy biologists. (15:33)

15:52
If you keep them in a chaid (?) (…) it is very little you can do with that, in a way of arranging it. I think the social scientist will be less developed as well. Now, I am just guessing, I don't know anything which has been demonstrated. It's just my feeling (16:21)

16:22
May be I am wrong. Probably wrong.

16:24
It is easier to believe: if you say that about monkeys, people will accept that without questions; if you say it about sheep, they say: 'Ah, well, sheep,…"

16:33
I always campaign about that for sheep because they always, it is partly why I worked with them because they are always silly sheep, "goes together" in English. The assumption is sheep are completely stupid and don't know anything. But of course it's a nonsense, they know about their environment and how to get the best out of it, including turning up at the right time. They are very good at time they will turn up at the precise time to get food and to feed at regular time. They know where to go in their habitat for all sort of things, and this is actually used here in the North of England, a process called hafting (17:21). If you buy a farm, you

buy the sheep that goes with it (…) because those sheep have learned from their mother who learned from their mother, going way back, where is the food places to shelter and good foods and all these things. And presumably it might be expected that each generation add a little bit of information in taking whatever changes that happening in the ecology they deal with. But if you brought in strange sheep, they would die, they wouldn't know how to cope with it, it is something, it is part of the attic of the farm, it is a knowledge sheep have, in an extremely extensive environment (18:10).

18:26
You do occasionally have a sheep which is inventive. A lot of farm would simply select it; they wouldn't be bothered because that's the sheep who finds the gap in the fence (18:40)
(…)

19:13
So there is some selection. And they also select farm animals that are calm (…) (Of course, calm animals could be easily frightened. So, selection for non-aggressive and not too easily frightened animals).
It is amazing given that that the social behavior don't seem to be affected at all by domestication, the whole repertoire seems to be the same in highly domesticated animals and nearly wild one, they all do the same sort of things. (20:12)

50:07 – 51:54: Story of the first flock in Berkeley

51:54
My original idea, what I wanted to do was to look at this whole idea of competition among males. Here I had a flock of 17 old sheep. I measured the males, their horns, found out who they are by looking their teeth, and then would watch their behavior, and ultimately I would look out at the paternity of the lambs and then I could say whether in fact sheep that had extra big horns or behave in a particular way left more lambs. That didn't work partly because I couldn't get the grant (…)(52:55)

53:10
In the mean time, I have been watching the behavior of the tops, and I was getting more and more interested in exactly how they interacted (…) If you see the photograph of wild sheep, you see them clashing. So the images of total confrontations. And what I have seen, as here, was males very much close together, showing only friendly behavior nearly all the time except during the mating. So, I wanted to look more of that, and there was several flocks of males, it seemed to me they were mixing, they were staying together, but the pattern changed over the year, broke up during the rut, and come together later on. So, we were able to show that the rams did have long term relationships, the same ram came back after the rut, years after years. (…) An old top, they have special relationship among them, with a young ram who stayed with him all the time, just the 2 of them together, and he would stand between the other rams and his best friend, and he would try to lead the other one away, he wanted to keep him just for himself. Little stories like that, very anecdotic (55:06).

55:09
I was very pleased by that, because it seems to me that if you are asking the question "Can they do what monkeys can do in the way of social behavior?", the first question is "can they make long term relationship?". Not just based on mother offspring, which is perhaps too easy. Yes, they could.
These were males who joined other males from the mother's flock as they got older, and make relationship which lasted for several years, and the whole thing stopped when this puma

who came. (55:48). At the same time, I could see that there were long term relationships with the ewes, on the whole mother and daughter stay together but not always, there were daughter who left their mother and there were daughters who stayed with her. So, it is variable (…) (56:10)

56:41
So, it continues… (pretty smile)

57:20
We have 3 sorts of sheep here: we have these, which are essentially feral sheep, we manage as little as possible; down the valley we have the suffex (?), which are the ultimately controlled sheep for maximum output of meat; and then around the hillside you can see hill sheep. (Comments of their primitiveness and about predation on sheep from 59:47 until 1:24).
Until the end: lambs (how they born)

End second tape

Third tape

00:00
The provocative question that begins to annoy me is "Why are primates so much more intelligent and socially skilled than other animals? "And my answer to that question is "Are they?". And that wasn't any, they were not comparing like with like because the way we study primates is rather different from the way classical ethology was carried out with long term studies, individual based studies, looking for relationships, looking for ways of communication. And if you look at the literature about sheep, it is all about what they eat and how they choose food in a pasture. The research always starts : " We took 22 long wool, and we put them in such and such size, with such and such grass, and we watched, observed them in certain ways, and we weight the grass afterwards. These animals clearly probably never met each other before, they brought them in the market and put in, so of course, we didn't see anything interesting in the way of social behaviors. And to say therefore that they don't have it seems to me premature. So, we wanted to look at sheep in the same way that we looked at monkeys, looking at long way interactions over years, and so on. Of course, the advantage of sheep is, if you can use them, you get a generation a year; comparing studying monkeys, it's easy, you can look a grandmother within 3 years, no problem. (02:30)

02:30
To my satisfaction, we shown that, yes, sheep can make long term relationships. And sheep are nice to start with because they are the epitome of the silly animal, there we don't expect sheep to do anything; so the fact that sheep can do it makes, really deserves from the question what other animals can do. And in the meantime, Glickman hyenas' studies, elephant long tem studies and the wolves, all pointed at the same conclusion: yes, these things have long term social relationships. So, this is nice, we can now say: all right, apart from long term social relationships, what can primates do? You can eliminate a lot of stuff which was assumed to be peculiar to primates, and you can see what else is there.
Most primates have a social system which is no more elaborated than most mammals. Then I started looking at obviously some primates do more than this. My contention was: there were a few peculiar primates and those are the ones you want to focus on if you want to see what special about. It is not <u>all</u> primates, the taxonomic track is not particularly useful. So, you get the animals that are interesting because they are always doing something, they're always interacting. And they're doing noisily and they're doing overtly, and it is easy to watch them, and it is fun to watch them. You can sit and watch cape langhurs doing nothing for years, and the number of interactions you see is infinitesimally small and they sit, not as alive as a sheep. On the other hand, you have just these baboons, quite a few but not all of them, macaques, chimpanzees, people, vervets, …So you get this isolated, not taxonomically defined group of animals, which are highly overtly social and therefore easy to study.
Then you get on another interesting question, because, how can they afford to do that, how do baboons do? When I was working in Kakamego, I was working with little blue monkeys and they were quite quite, the contrast between them and a group of people coming through the forest (….) you could hear a mile away chattering, and monkeys were just quietly making warnings, and pull themselves back into the bushes behind the trees. And these kids would go through, supposedly looking for animals and never see a thing because they were too busy squabbling among themselves. This is the same thing with the baboons. When the baboons occasionally come into the forest, again you can hear them coming from half a mile away,

screaming, shouting, fighting, babies that loss crying after their mother (…). The monkeys actually did the same way, only more intensely because baboons will eat monkeys whereas schoolchildren on the all don't, and again, they would hide in the trees. And the baboons would pass shouting and screaming and then they would go. And it is really a peculiar way to behave. If my sheep would pay so much social intra-group attention, they would be dead, they would be picked by predators. How can (baboons) they (?) the balance of their attention to such an extend? And that seems a very interesting question which comes up as soon as you stop generalizing about the "primates". Which I don't think it is a valid thing to do. (07:25)

The monomaniac interviewer raises the question of political stakes (feminism and all these neurotic stuffs that contaminate science) trying to constructs this problem of hierarchical scandal as linked to the one of hierarchy raised by feminism. Belgium: no point.

08:28
That was my Cambridge training. We were always taught to question authority : the more authoritarian it is, the more you question it. When people kept telling me it was all hierarchy and it was all about, that didn't seem to fit in what I saw animals were doing, so it was not difficult to question it, really.
That particular film (Washburn &De Vore), it is very old, I think it has been made in the very beginning of the 60's, at least. But it is an important film because it was shown in all courses through the country, and that in turn is due to the fact that Washburn had a lot of students and these students went out and taught physical anthropology throughout the United States and so took the idea of showing De Vore and Washburn film. So, it is part of the common background of part of educated persons of the same age, at least.
The film was made to bake up Washburn and De Vore' images of the way baboons troupes worked. It was essentially a concentric pattern. They didn't get this idea first, the Japanese were talking about earlier, but in Japanese, so it wasn't spread early. They, of course, were giving food to bring their animals out, so they could see them at all, the Japanese macaques. The idea, the alpha male was sitting in the middle of the troupe, with maybe other very important males around him, and around that would be the mothers of young babies, and around that would be the juveniles with the ultimous lay, the juvenile males.
The film demonstrated that: you could see the big male in the middle of the group, and the female surrounding, and soon, what the commentator didn't comment on, in the film, were the peanuts that they were throwing from the land rover from which they were filming. If you turn off the commentary and you look carefully, you can see the trajectory of the peanuts, reflected on the movement of the head of the baboons, and of course, the male were indeed in the middle because they were in the best line of flight for the peanuts, and the females who wouldn't dare to take them from the males were surrounding, and the juveniles that didn't have any hope with, surround at the outside of that. And that really where the concentric specialized organization comes from.
They also said, this worked, and this is a very beautiful drawing, I think it was originally in Scientific American, stylized picture of baboons walking, and again it shows the concentric picture, the big males in the middle, and the females with them, and the juveniles out the side. (12:08). And that, absolutely wasn't what I saw when I started to watch baboons where I was working. In fact, baboons, rarely move, when they are foraging on a wide front, when actually walking place to place, like the sheep, they more or less go in single file. I that file, I saw big males front, females and little ones and juveniles in the middle, and big males at the back. And that was obvious in places where there was potential danger. So, as a troupe came out toward a track that they had to cross, where there might be cars or people, then you see clearly big males in the front, big males in the back, and they would come and look both ways and then it would be good to cross in that order. It looks like the females and the juveniles are being protected by the big males, in so far as it goes. It was amazing how hard it was to break

that picture of the big males in the middle when they were walking. That picture was in everybody's mind, it was widely available, it was a beautiful picture, very high catching, artistically beautiful picture. And we, and other people, we kept saying: no, it is not what we see, variations had to do with contexts. I think it is finally being abandoned, but it was decades before observations could try over the idea of concentrating things.(14:10)

15:50
Reasons for baboons to be in groups was that the big males protected the other ones from predators or whatever. And again, it was not what I saw, because from time to time, I would be a predator, and when I happened, they took off. And since bigger baboons have longer legs, the adult males were always in front, the latest would be the mother with the biggest baby, struggling alone through the grass, and it was nobody to stop and protecting anyone under these circumstances. Obviously, it would depend on the predator because they will go after leopards, but something over which they have absolutely no chance, they run and they run faster. There is no heroism going out at all. (16:47)

Pictures.

End of tape.

Fourth Tape

Pictures of kitchen.

03:00
Breakfast setting for sheep. 23 bowls.

04:00
The reason I feed them in separate bowls, normal farmers would put the food in a chop (?) and then it generates an awful lot of pushing and shoving and aggression and I want to eliminate that this way, I spread the food out, so there is enough. Nobody actually needs to fight anybody to get food (…)

05:00 until 07:00: *setting the bowls. Sheep come*.

07:30
2 sisters share the same bowl. You can share the bowl with your mother, your sister or brother, but not the other people.
Comments

16:47
The ranks are so settled among the ewes, it's often difficult to say. When I can't working out it is a case of very rare interaction over very long period, it is always age: the older sheep over-rank the younger sheep. You see too few interactions to do a formal analysis of it; over years, it is a very low level. But once in a while, there would be a serious battle between 2 ewes, and a ram goes and separates them. They do that from time to time. It is a very interesting interaction, it is so rare, it is no chance to showing you, but you see (17:36), intervention, 2 sheep would be fighting and another sheep will go stand between them and prevent the fight from continue. And I have seen that both to other tops fighting and to ewes

fighting. It is one of the extremely rare situations. It comes later in the year, in the mating season. (…)

19:06
Ewes willing to be in fight between lambs on the side of their lamb. I couldn't remember seeing a ewe intervenes in a fight between other ewes. It is so rare, I am not sure it doesn't happen.

Pictures of sheep until 35:10
35:20: T.R. *bottles the orphaned lamb*
Comments on the lamb being bottled.
Comments on imprinting.

40:09
When sheep want to be nice with each other, they rub their face on the other's face. (*T.R. caressing lamb)*
Pictures

44:48
They are permanent bonds between sheep, certainly as permanent as people make.

45:08
For female sheep, it is 2 ways to form a bond. One is mother-daughter, and the other is a twin sister, they also stay very close together. Beyond that, you do get friendship that has non-kin bases.

Goat.

46:25
I don't have enough space to keep enough animals you can't look properly in numbers of all possible combinations you might be interested in. (…)

47:04 until 52:00: work with blue monkeys. How outsider male attract resident females without challenging resident male.

55:57

There is a difference between doing a research and presenting it. And when I was doing the research, it was purely a practical matter of finding animals or writing down what they did in a notebook. I have to identify the animals, and who they were with first, drawing little pictures of which sheep is where, which orientation, and so on; and then recording interactions as I saw them. And of course, all the time you are desperately aware of how incomplete it is because you simply cannot watch a lot of animals simultaneously equally, but on the other hand, the rate of sheep interactions is so low, if you try to follow the interaction of an individual for 15 minutes, and then another individual for 15 minutes, you can well end up with any number of hours with a sheep chewing, (…) lying down, because most of the time they are not interacting, they take up a position in relation to each other, and nothing happens. I felt justified in trying to pick out interactions that I happened to see while realizing full well that there were many others going on that I missed. You do what you can (57:23). So, the you have the data, and then you try to analyze them, then the 3rd stage is to relate it to what have been written before and point out similarities and differences, dissonance.

(57:53). You refine it as you go along, you realize that you need to watch sheep like monkeys very early in the morning, when they first get up (….).

About Geist's idea of correlating dominance and size of the horns.

58:56
As far as I remember, I found that horn's size didn't correlate with anything much, and looking at the way sheep fight, which is often hitting with the front of the head, so this bit of the horns is very important. So, I also measured the size of the base of the horns, and the rest of it, which looks so impressive and is a hunting trophy, doesn't really get used at all, and they hook with their head from time to time, and they use the horns, but I began to think that the really curly bit of the horn was sort of irrelevant, and that the only important part was the bit you actually make contact with, which is (newgrose?) and the rest of it is just there because it grew once. (…).

01:00:57
It is a lovely study by a neurobiologist in Oxford (…) in which they show sheep pictures of faces to other sheep, and this was supposed to be captive sheep. And it was all these electrodes in their brain and they could show that neurons that would fire, they would recognize the pictures of the individuals they knew. And they also show they were more interested in sheep of the same breed, sheep were distinctively different to look at. Right at the end of the study, they said well, dominance of course is important in sheep, and this is demonstrated by horns. So they showed the picture of a sheep with horns, and indeed the brain lit up. But they also fortunately showed the picture of the horned sheep to the test sheep — they were all ewes—, and the picture that they showed was a very handsome ram, with nice horns, so whether they were lighting up because it was the first male they had seen for months, or whether it was because he has horns, and whether for dominance, who knows?. I think the hypothesis they accepted was a little bit premature.
(1:02:25)

End of tape

Fifth Tape

0:01:50
Clashing is an old thing, it's so well known that this is what sheep do as they bang their head together, it looks like fighting, and once in a while you see a sheep hits another sheep, which then turns around, and you see that more actually during the rut. And I didn't get the opportunity to study as much as I would have likes in that side because it happened while I was teaching for example. But there was another thing about that clashing which didn't fit in and one of the thing was that sheep would ask another sheep for a clash with a series of head tucking and rituals and backing off, which in some cases you could easily interpret as a threat. But when you see a young lamb, just a few months old, approaches an old ram twice his size with big horns and ask for a clash and do this tucking heads and backing and so on, and the big ram might very well ignore him and just carry on eating, sometimes he accedes it and says

“very well, all right”. And what he did was tucking with his head down and the young ram would charge at him and hits his head and bands off because he is so much lighter than the other one, and the other one would go on eating
This is not an animal putting down a subordinate in any of all the classical ways that you see this, and then, overall, the other thing was the association between clashing and what I interpreted as the friendly gestures of rubbing the face, and I interpreted primarily because it looks like friendly gestures. (00:04:03) You don’t aggressively rub your face against somebody else’s face, your horns against somebody else’s. And that head rubbing had been identified as dominant’s signal by Geist, and quite correctly as in classical ethology, because it is always associated with the clashing which did look like frequently as fighting.
(04:50)But then I had the advantage of the concept of reconciliation from De Wall, so to me that looks like that group of interaction, and particularly interesting you would quite often see the head rubbing preceding clashing which looks like what, how can you call it, “pre-reconciliation”. “We are going to fight but we really like each other and we will continue to like each other after this rut’ nonsense is over” sort of statement. Nobody comes up with pre-reconciliation anywhere else, so perhaps it is something I imagine at all, perhaps it is something sheep do and that monkeys don’t know how to do this, that’s another possibility (05:28).
That it is not impossible since another concept which seems terribly important if you are looking at sheep, which you don’t notice if you are looking at monkeys, which is leading and following, which on the all is not obvious thing which happens in most primates. (06:02)

06:20
What I see, and I see here as well, it is not very common, and it is a matter of 2 animals fighting and the 3rd animal comes and stops them fighting because he is in the way, and I have seen that done here more recently by a top stopping 2 tops fighting, and also a case occasioned by a top stopping 2 ewes fighting. Ewes’ fight are even rarer than males’ but they do then to go on and on, but it only a temporary intervention a ram stops them but within a few minutes they are going somewhere else and then starting again, but it is a break up of a fight (07:10). Here at least it was very much the senior, the high-ranking animal who would break up fights among other animals. Females would break up fights among lambs, besiding of course with their own lamb, in the same way probably, chase off the other lamb in that case, and they would come in, a fight would develop between an older sheep and their lamb, which would happen if the lamb are rather older, because top lamb quite soon develops bigger horns and they try to push them around and their mother will back them up on that usually.

08:10
When 2 animals stop, it was exactly that, a sandwich, 2 sheep would come on the side of another one preventing him from moving. It is a way of controlling the behavior of an other animal which is again something which is actually rare, particularly rare to see something which isn’t just chasing another animal (08:50). I saw this as interesting examples of more complicated behavior than sheep are generally credited with. It wasn’t obvious to me that you could explain them by simple hierarchical rules. It was more interesting than that.

09:37
Why should they do it (*preventing from fighting)*? I don’t know, I couldn’t see, where I knew the kinship, here, that wasn’t the feature, it could be, in Zahavi’ sort of way of expressing status, just as supplanting in the feeding situation that I have there. We choose an all lot, more or less as any bowls of food as we have sheep, and one sheep will come up and push another sheep away from the bowl. Now, he just left a bowl with similar amount of identical food in it; he very often puts his nose into this bowl and then he goes back to the bowl he was before, or he may follow the supplanted sheep to the next and push him out of that one as well. He is

not doing that because he wants the food, he is doing it because he can and this is a way of demonstrating status. In fact, I found also with monkeys and this rather low level of, no, it is non aggressive component, (V.D.: Harassment?), yes, and supplanting, in monkeys group as well supplanting was much better indicator, a more precise indicator of relative rank than fighting. Which makes sense, because if you are fighting, it means that the other is not agreeing with your assessment of your rank, and so you fight. Whereas, if he moves on when you come, he is agreeing. But even "supplanting" can get you in a lot of problems. I used to watch, we are going back to these monkeys, a monkey is sitting in a tree, eating, and another monkey comes and sits in the next tree, and he might eat or he might watch to the first one, and eventually he comes into that tree and start eating, and the other monkey moves off. Now, how you interpret it depends very precisely on the timing as you perceived it, if you think (12:05) that monkey waits for the other one is going before he approaches, then you say "well, this is, he can't eat because that monkey's rank is higher than him, so he waits for he has finished, and as soon as he moves away, he comes and he takes over the food". So, that's one possibility. Alternatively, you can say that the one who arrived supplanted the one who is already eating, and it is to a tiny difference in perceptions as whom moved first that you are making that call, and you may very well get it wrong, because you have missed the very first intention's movement of one animal. But the other animal picks up, and you get it exactly opposite to the correct interpretation as monkey sees it. The same is of course exactly true of sheep. (00:13:10)

00:15:15
It is much more logical to eat people than chimps because there are far more people than there are chimps. If you begin to eat chimps, it would be very easily no chimp left, but you have to eat an awful lot before you go through the people (15:30).

Question: why do we eat sheep and not chimp?
00:20:00
I think people protect themselves by mechanizing animals (…), you can't possibly mass produce animals as intensive farming does and still respect them as individuals, and I think that people who rear the animals will quite someway towards avoiding accepting that these animals have relationships and opinions, **animals do certainly have opinions.** (21:13).
But you don't want to think about that, you want to think about how much food goes in and how much meat comes out, and that what high intensive commercial farmer is going to concentrate on. So, I don't think things would change; on the other hand, the consumer is prepared to see meat as something which comes from square white polystyrene thing and not even consider that it was come off living animal. And if they start to consider it or are revolted, they become vegetarians, which is sad. But I am not a vegetarian, I am a committed meat eater. (22:00:17)

00:23:33 (*Group selection controversy, early 60's)*
In that time, we knew very little about social behavior of monkeys, and we knew that they lived in group and we assumed, when first started working with baboons, we assumed that the group was a permanent structure and that it didn't change; you grew up and died in the group. So, as soon as we started looking at animals, really, we discovered that males moved in and moved from group to group, what that means is that the social unit which moves around together is a fluctuating structure in terms of its members.
Theory of group selection. Ex. of macaques.

00:28:45
When you see a group like that, as a set of animals who are working together against the world if you like, they are not doing it because they are related to each other, they are doing it

because they help each other. (…) (29:12) The better cooperator you are, the better your group will be able to fight against the environment, and so the most successful it would be, the more it will grow, and spread, and possibly divides as we have seen in 2 groups, and elbow (?) other groups. (…)

00:30:54
I don't think animals, except if you have a group in a cage, then, all the social interactions will be inwardly focused (*Didier: why don't we use some pictures of the wolves being so constrained to be cruel, here?)* (31:07). But when you are watching animals in a wider context, and you see territories, and you see some groups getting bigger and some groups smaller, and groups defending boundaries, the entity of the group is emphasized to you, in that sense it is competing against the other groups, and then you have group selection (…).

00:31:50
I get the sense that interesting cooperation is growing. There is really a very dreary period when nobody talks about anything but competition and it coincided with the extremely conservative government in this country, certainly: competition was absolutely everything and there is no such a thing as society, said our prime minister of that time. And I find that a terribly dreary view of human behavior and of animal behavior, for all you do is competing as individuals against each other in a purely aggressive way. (32:32). I think cooperation is much more interesting. And it is the thing that makes the social living animals different and interesting, which we all agree that they are interesting.

Goats

00:44:22. *Animal as person?*
Yes, it depends how exactly you design persons. Every animal is an individual. This is something that people talking about cloning can't grasp. This absurd emphasis currently on the genome, because we are finding out genomes, but the genome is only a tiny one aspect of the individual and no individual can possibly be identical to another individual because the interactions from early stages with an environment, so the genes are setting in a cell, which is a first interaction, and the cell and embryo are setting in a mother, which is providing another level of environment, and then after birth, the experiences of one individual can't possibly be the same as that any other individual because they are not at the same place at the same time. Of course, every animal is a complete individual, isn't quite like any other. The differences might be quite small sometimes, and of course the less environment they perceive, the less individuation you are going to perceive in them. But quite difficult for you (may be) to perceive the differences between them, but they will be there, but they are going to be small to our way of perceiving.

00:46:31
I can recognize individual animals and individual animals can recognize me, and they can recognize each other, and have different expectations from all these creatures.

00:47:02 (*V.D.: What expectations do sheep have about you?)*
The sheep, I try to be as predictable as I can with the sheep. So they keep an eye on me because once in a while, I can catch them, so I am to be watched very carefully, and particularly if I bring anybody else into the system which probably means I have the design on catching them, so they will do their best to evade.

00:47:49

I have anecdotes from people in which sheep have come to ask for help (…) A sheep get stuck in a ditch and another sheep comes to the gate and calls, and then attracts the attention of the owner, and leads the owner to where the problem is, and the owner can solve whether the sheep can't.

Goat

00:55:08
That is actually an enormously valuable tool, when even hand reared animals, that is a whole series of level of communications which you can't possibly get anywhere else if you are hand-rearing a baby monkey. And you're feeling it and you could feel the strength of his grippen (?) , and what his body feels like and whether it's rigid and whether it's relaxed, and you get a much better, and you see it is sitting on your lap , and it sees something and it responses, and in the way his muscles move, you can tell what it is perceiving than you can ever do just watching it. And the course of interaction you get between them can be very insightful in both the 2 of you can understand, and what you misunderstand.

00:56:10
Totally anecdotal but it gives you an insight which that you cannot get any other way, some with the lamb.

Lamb imprinted until end.

End of tape

Sixth tape

00:001:13

Rights for animals. Question of responsibilities. Can we make experiment on chimp?
See 04:04 when V.D. talks about Temple Grandin: very pretty and funny pictures of T.R. face showing what could be the paradigmatically surprise in a very controlled and sarcastic English lady

00:08:30
Anecdote with the dinner at the Zoological society of London after she presented her paper.
Conclusion; 13:13: "It's my good feminist story".

00:14:10
You always have to remember that the way you express it when you are writing is not necessary the way it consecutively happened, because you have to make a good story.

00:14:28
When I started it didn't seem quite so obvious because I was there right at the beginning really of the modern wave of primatology. So, nobody knew anything about anything. And it did seem perfectly reasonable if you were going to start looking at baboons, you had to start somewhere, and the males are bigger, and easier to see, and recognized because they generally have bit missing from fights, so as you got to start somewhere, it seemed a perfectly reasonable place to start, and it is only when people went beyond that and began to develop theories, so that De Vore once said that it is only the males that evolved (15:18) presumably arguing that selection's pressure is much heavier on males, and therefore that's what strive (?) the evolution in the females are altered, sort of entrained from the alteration that has been selected for most males. When people started making that sort of extrapolations, then you begin to start queering (?) it: "just a minute. But what are those females doing?" Of course, as soon as you start looking at females, you can move ahead, because they are actually quite busy, not sitting passively by at all.

0016:10
If I go and look at groups, the animals that I am most interested what they are doing are the older females. I had one graduate student who could only take interest in juvenile females, she was rather of juvenile sort of person. And equally, I can say that if you are an adult male, if you are an academic American adult male, deep deeply (involved) into status, an important aspect of your life, that you are going to project that on animals unless you are very very careful.

00:17:03
We are using empathy, we are using anthropomorphism which is what empathy is. It is a justifiable way, it is justifiable among primates because the ways they communicate are so close to ours that they are very relatively easy to understand in comparison to sheep, which also have things in common with the way we communicate. But (…) it is not intuitive to a human being that a low stretch out of the neck with you head down is a threat. (…) The way we do it, whereas a "Bouh!" is very obviously a threat, you don't have to think about that. That allows you to move quickly on, because classical ethology was very much, you begin

with your ethogram (18:07) which was describing movements and ascribing meanings to them, functions to them in the communicative sense. And to some extend, if looking at monkeys and apes you can bypass that stage because the gestures they use are so close to ours that you don't need to describe them. And so you can move on the next level of the hierarchy to the pattern of interaction rather than the particular behavior components of that interaction, using Hinde's hierarchical organization. But you have to aware all the time that you are using a short cut (19:19).

00:22:
What it did mean is since women have no possibility of a career, it was possible to be much more focused on the academic question. I don't think it was an accident that the "Great Apes ladies" were all people who had no possibility of an academic career, they didn't have a formal training. Leakey carefully selected people who did not have a formal training. Of course, most of the people who did have a formal training were men, anyway, and I think Leakey preferred ladies, but his rationalization was that they would have a fresh approach and they would weight down the theory.

Story of Schaller, Fossey and Hinde with gorillas and human careers.

00:25:50
But you wouldn't have got anywhere with a formally trained man with a career to make; because they took too long, it was too unproductive, they got nothing at all for months and months until they habituate their animals. Nobody who had a career to do, a grant to get, a position to get would have stuck it out.

00:26:15
I think a lot of the rest of us lived the same, we didn't see any possibility of an academic career, nobody is going to give you an university job, but if you can get grants, you can spend time watching monkeys, analyzing data and writing papers, it was a great fun.

00:27:20
The older I get, the longer I studied animals, the more, really, all the things I am interested in are immensely long term. And that's one good reason for moving from primates because it becomes ludicrous, the life span is so long (…).

Lifetime reproductive success: how to define it; how many generations should we take into account?

00:31:10
I always remember the animals and never the name of the person who did the research.

Anecdotes about blue macaques and how females choose the resident male.

00:37:13 . *What means dominance?*
I think "resources" clubs together females and food, doesn't it make a non-sense anyway? Because more and more we see the females deciding themselves on which male they are going to have. When we are talking about animals that only have a single male in the group at the time, I prefer the term resident male rather than dominant male. Dominant male is used by most of people but it, since it doesn't in fact, as far as I can see, dominate, but he does reside, so let's be precise. My criterion is often to look at age. If by saying dominant male, you say no more than oldest male, let's say the oldest male because that's something which is an

absolute which isn't going to change; whereas dominance is such a wholly characteristic, it can depend on so much else.

00:38:21
You can clear out a whole lot of hierarchical stuffs out of literature by applying those criterions. (…). If a concept which can diminish if not disappear entirely if you look at it bit critically.
00:42:00
Pictures of sheep breakfast.
Land.

End of tape

Seventh tape

00:01:00
The reason I feed my sheep has much more to do with management than to finding about behavior particularly. If you keep sheep you have to look at them at least once a day. With this arrangement they come to me and I have them, I can look at them carefully and if anybody needs my treatment they are already confined, I can catch them, because these sheep are not catchable when they are in the big field. So it is purely for practical reasons.

00:01:50
Same but without the dog making noises.

00:02:50
But I try to minimize the effects I would expect from provisioning, normally. If you want to feed a flock of sheep, you have a troph (?) and you put the food in and they are pushing to the troph so there is a great deal of competition pushing and shoving. What I do is to give as many bowls as they are sheep, plus one, so that every sheep can always find a bowl for itself without having to compete with another sheep. And the bowls are fart enough apart that you can't reach one from another. And my hope is that it would reduce their need for fighting between animals over food which I don't want to happen. Having set up that, you do in fact see competition over bowls which is not about food. And what happens, particularly the tops do this but the ewes as well, they will go over from their bowl to the sheep next door, who is eating from her or his bowl, and pushing him out off the way or sometimes the second sheep will move as the first one approaches and he doesn't actually want the food; why he is doing that is to show that he can, and quite often he'll put his nose into the bowl, will take anything and then may be follow this second sheep to another bowl and push him out again and may be he will go back to his original bowl to finish to eat some more. So you do see supplanting going on in the situation but it is vary low key supplanting with very little intention to it. Which is the best I can do to compromise.

00:04:45
The information I get from these. I could perfectly well get it out to the field, I hope it is as little possibly qualitatively different. If you regularly feed animals in a situation where there is competition then you can build abnourmous (?) conditions.
And it was that point Margaret Power was making. And it goes right back to the original Japanese method for studying the Japanese macaques which was to provide food in an open space and the animals came to the food, which is absolutely essential because the vegetation in Japan is completely impenetrable, follow them and study their behavior in a very dense vegetation. So they came out to open space and they were fed. From that, came one of the early pictures of social organization, with concentric arrangement of animals around the alpha male or the senior male, whether you like to call it, which you get in fact they are themselves sitting at the main food sources and everybody else is waiting for their turn around and around. It was a very popular idea, and it was transferred from the Japanese macaques to the baboons by Washburn and De Vore, who once again fed them and got the same concentric arrangement, but it was just occasional with the peanuts, it was not a regular feeding station.

00:06:50
But nonetheless, that was the way things were done by a lot of people in the early 60's and that's the way Jane Goodall began to habituate her chimpanzees. I don't remember the full sequence but essentially putting out bananas for chimpanzees was producing a great deal of

competition for those bananas and there always will be a scare of resources of the mountain of bananas you would need to satiate a whole troupe of chimpanzees . First, it was just bananas available, then she invented a more complicated system of boxes which would be opened remotely so that you had some control on which chimp could come to the food, and that of course, I imagine, increased the tension more, because the chimp were waiting for the boxes to open and if they weren't allowed in, they could get extremely cross (?) and then would vend (?) their frustration perhaps on the other animals that were allowed to the boxes. And M. Power suggested that this amount of tension builds up and leads chimpanzees of Gombe to the point where actually altered their behavior also away from the food boxes and ultimately changed the way their society was organized (08:40).

00:09:03
She looked at what is in fact there, the historical change in perspective about chimpanzee society, with the original stories from each of several study sites being amazed that the peaceful nature of chimp society, and then increasingly stories about aggression , of infanticide, of terrible battles between males on the edges of territory, an picture grew up then, of extremely competitive, aggressive, murderer society of the chimpanzees. The popular interpretation among scientists is that, having the animals better habituated, learning more about them, seeing things which were impossible to see before, in other words, the behavior has not changed, but the skill knowledge of the observers changed. And then, there is a view point which says it is political that in the 60's, in human societies peace and love were fashionable, and as you move to the 70's, you got more interest in competitiveness on a political sense of it: human politics went from left wing to right wing and the observation on the chimps (10:45) followed, so you begin to wonder about the purity of sciences as unsalted (?) by the human ideas of the time.
And the 3rd option is that animals have actually changed and that the early observation were perfectly accurate and the chimps has been subjected to a change in their habitat and that in turn has changed this society which is an extremely interesting idea. And it was rejected by a lot of people at first (…°

00:12:54
Why I feed sheep every morning ….(The same but summarized)

00:13:15
My sheep are trained to come every morning for a small amount of food; the food is not necessary for them but they like it (the same but summarized) except (15:33):
You can under these circumstances of course see something about the relationships of the sheep and probably more quickly that you would see out in the field. But I always think at the risk of this interaction in the yard actually changing the behavior of the group as a whole, and my concern derives from the whole experience of provisioning, which was the way Japanese research were first began to study the Japanese macaques (….) (concentric organization).

00:17:24
It was transferred to baboons, and again if you look carefully you realize that the food was being offered to bring the animals where they could be filmed, and then of course, it was used for chimpanzees by Jane Goodall, who struggled hard to follow them through again very dense vegetation (….)

00:25:15
I do think that just as we perceive chimps as extremely like people, they would have the equivalent experience and it would be very enervating, wouldn't it? *(To be followed by someone who notes everything you do)*

For the monkeys, when they get habituated, I don't think monkeys see any particular similarity to us, but I think that they become habituated, they put up with us because they noticed predators don't come near them, so we form some sort of protection, and having seen that, they are willing to exploit that,(26:15) and that's called habituation maybe. But chimps don't have any predators.

Wonderful pictures of Thelma smiling.

End of tape.