

## **“Sheep do have opinions”**

For the past few years the inhabitants of a hamlet on the outskirts of the village of Ingleton in Yorkshire, England, have been witnessing a strange exercise every morning. A woman, said to have been one of the most renowned primatologists in the English-speaking world, spends her day in a field in front of her house, observing animals that she has put there. As she did during her many years of field work in Africa studying apes, primatologist Thelma Rowell patiently notes all the movements, anecdotes and tiny events making up the daily social life of the animals to which she is currently devoting her time.

Admittedly, these animals are different to the ones she was used to spending time with: the relations are not characterized by the same intensity, the behaviors are peculiar to the species, the communication does not always pass by the same channels, and the events seem to take place at another pace. But as far as their social expertise is concerned, these animals are certainly on a par with apes. To put it simply, they are organized – so much so, in fact, that they warrant the title recently awarded to dolphins, hyenas and elephants, of “honorary primate”, even though they have no link with apes. These “honorary primates” that have become so fascinating since Thelma Rowell started questioning them, are sheep. And, owing to the scientists’ patient work, these sheep have changed considerably.

The primatologist’s observations usually start early in the morning, with the same ritual: she takes each of her 22 sheep a bowl with its breakfast. But what puzzles any outside observer is that there are not 22 but 23 bowls, that is, always one too many.

Why the extra bowl? Is the researcher practicing a kind of conviviality that demands she share the meal of those she is studying? No, that is not the idea. Does this “generous” strategy perhaps attest to a new attitude of researchers? Might the refusal to make the animals compete be related to a new type of question, itself contingent on a political awareness? Thelma Rowell affirms that the focus on competition, characteristic of ethological research studies for years, did correspond to certain political contexts(2), but the food supply that

she gives her sheep is not of this type of enrolment. The twenty-third bowl is part of a device that, in Bruno Latour's terms(3), should give all their chances to the sheep; it should allow them to be more interesting. Of course this requires some explanation but I will revert to that. First I wish to take the time to reconstruct the multiple events that progressively led to the necessity for this extra bowl.

The fact that I have chosen such a trivial and concrete element to start that reconstruction is not irrelevant. It attests to a particular epistemological position to which I am committed, one that I call a virtue: the virtue of politeness. I try to acquire this virtue during my work in which, as an ethologist, I study the work of other ethologists, and it is in contact with them that I learn it. As primatologist Shirley Strum would have put it, this politeness forces me, as far as possible, to avoid "constructing knowledge behind the backs of those I am studying." In Strum's practice, the questions she puts to baboons are always subordinate to "what counts for them." This politeness of "getting to know" has proved itself sufficiently for me to propose adhering to it myself. If baboons or sheep become so interesting when their scientist subjects herself to this constraint, I can also hope to make the researcher interesting, in my study, by adopting the same demand and exploring how "what counts for them" has allowed changes. Among the things that count for Thelma Rowell, I learned how sheep could become extremely interesting – which is why they are present throughout my analysis(4) –, and acquired her taste for the small concrete causes that produce unexpected effects, original hypotheses, things through which – as she often stresses – "differences arise", without any need to refer to grand theories, influences, representations, ideology, etc.(5).

Sometimes a bowl is enough.

I will revert to this point. At this stage we just need to bear in mind that this extra bowl gives a chance to the sheep – put that way, no one would doubt it – and to the researcher observing them.

Of all animals, sheep are precisely those that until now have been given the fewest chances. They have been the victims of what Thelma Rowell calls "a hierarchical scandal"(6) in ethology: "we have given primates multiple chances; we know just about nothing about the others." Of course we know things about them, but clearly those things are incomparable to what we know about apes. The more

research advances, the more interesting the questions about apes become, and the more these animals turn out to be endowed with elaborate social and cognitive competencies. By contrast, questions about the others still primarily concern what they eat.

The reasons for these differences in questions are multiple. First, “the way we study primates is rather different from the way classical ethology was carried out, with long-term research, individual-based studies looking for relationships, looking for ways of communication.”(7) In other words, primatology has gradually adopted the methods and questions of anthropology. Classical ethology, on the other hand, focuses mainly on relations with and around food: who eats what, how animals organize themselves around resources, etc. These methodological differences are linked to various issues, primarily related to the animals themselves, to the different questions about them, to problems of practice and terrain, etc. Primates, considered to be our close relatives or even the ancestors of human beings, have mobilized their researchers around social questions. From the point of view of field work, baboons, macaques and chimpanzees present a certain advantage: most of the animals spend a lot of time doing nothing. By contrast, with the others there is always something happening: “They are interesting because they are always doing something, they are always interacting; they are doing it noisily and overtly, and it is easy to watch, it’s fun to watch them.”(8) Not only are they fun to watch, but the collection of data required for research that is more than simply a set of anecdotes, varies considerably. From the point of view of the possibility of publishing results and arousing the interest of colleagues, this certainly makes a difference.

Classical ethology’s focus on problems related to food resources can be explained in much the same way: “The problem is that you can watch an animal eating very easily. The whole business of food, and the competition for food has been much exaggerated because that is what is easiest to see, whereas the actual important thing is whether you get eaten yourself. What is much more important to the animals is much rarer, and it is predation.” Thelma Rowell adds: “And it is underestimated because nobody sees it! And you don’t see it partly because you are there. It is a self-fulfilling thing.” “When we are with them, we form some sort of protection (and having seen that, they are

willing to exploit it, and that is called habituation).”(9)

Reverting to the hierarchical scandal, we could say that, even more than the others, sheep have been victims of questions of little relevance compared to their ability to organize themselves socially. First, the focus on the question of what they eat is particularly exclusive and intense in that it corresponds to what we expect from sheep: that they convert plants into mutton. Second, the disinterest in the issue of predation makes it impossible to translate behaviors that are meaningful in relation to it. From the point of view of predation, sheep-like behavior, which in our political metaphors seems to be emblematic of their stupidity, could be the foundation of the intelligence of most sheep’s social behavior: a strategy of coordination and cohesion that protects them from predators. The closer and more attentive the animals remain to one another’s movements, the sooner the enemy will be detected. Finally, the very organization of breeding leaves little chance for the emergence of the kind of social behaviors found among primates. We know very little about the males, for example, since few of them live for more than three months. Moreover, nothing is known about the way in which females choose them during the mating season and how relations organize that choice, since selection is entirely controlled by humans. In fact breeders’ selection will favor “the most sheepish sheep”: “You do occasionally have a sheep which is inventive. A lot of farms would simply select [...] because that’s the sheep who finds the gap in the fence.”(10)

Sheep have an additional difficulty compared to most other farm animals: “they cannot really effectively protest. A cow, you have to treat with a little more respect, because they are bigger than you are. With sheep, you can do what you like, they don’t make any obvious protest, they just get miserable.”(11)

As the etymology of the word reminds us, to protest means above all to testify. And that is precisely where sheep’s problem lies: they have never been able to testify to what interests them since whatever it is that might interest them has been offered no affordance, no possibility of articulation with what interests those who attest on their behalf.

Until now they have had no reliable spokesperson(12). Admittedly, the notion of a spokesperson as Latour proposes it always implies a doubt. The question “Who is speaking?” is replaced by another type of distribution. The idea is now to make an inventory and to assess the multiple conditions through which the person asking the questions can claim to be authorized by the person being questioned to say a particular thing on his or her behalf. The very fact that this reliability is always a matter of doubt, inscribed in controversies, was apparent when Thelma Rowell reported on the particular status of predation in research: “Do you want to know what is important for those whom you are questioning? The very fact that your presence is perceived as a threat by their predators will make certain important events rarer; and if that presence were not perceived by those same predators, your animals would not let you get close enough to observe them.” It is because your proposition is articulated to their interests that your research affords you the opportunity to say things about them. This does not, however, mean that you are condemned systematically to missing what is important for them. There is another way of translating this situation, if we bear in mind the fact that the researcher, like Thelma Rowell, actively takes into consideration the implications of her presence. A new competency is added to the repertoire of all the behaviors through which animals organize themselves around predation: the one that allows them to enroll their researcher as an ally against the predator. Scientists may have limited their access to the repertoire of these competencies, but they have simultaneously enlarged this repertoire.

The advantage of this way of explaining the work needed to construct a testimony is threefold: first, it is relativistic, in the strict sense of the term, because it forces one to multiply the conditions that the entire device will articulate. To mention only those noted until now by Thelma Rowell (we can start with the main causes since these would never be possible without the others): a political context that favors hypotheses in terms of competition; but this problem itself is made visible only because researchers have focused on food-related behaviors; although these behaviors were easier to observe only because the researchers present offered some security to those whom they were observing; to which can be added practical problems in the field that make certain observations easier and more

fun; the criteria of publications and systems of awarding research grants that favor certain more active and extrovert animals; animals that take the presence of their researcher actively into account; original strategies that widen the repertoire of animals, etc.

Second, this way of reporting enables one to give up transparency for visibility: what makes certain things visible will at the same time exclude others and create new ones. Thelma Rowell's definition of habituation clearly illustrates this, which means that the former division between experimental and "naturalist" research studies is no longer valid. They are all experiments on conditions and propositions.

This brings us to the third advantage of this way of reporting on researchers' work: it *is not* relativistic, but this time in the ironic sense of the word, the "all things being equal" that precludes any form of evaluation. Interesting research is research on the conditions that make something interesting. As soon as one focuses on the conditions, the question of knowing "who" becomes interesting is superfluous. Of interest is he or she who makes someone or something else capable of becoming interesting. In the case of animals, you can study a fair part of the history of primatology with interesting, original questions that mobilize more and more activities among primates – who, in turn, make their researchers say more things.

This is the process that participated substantially in the creation of the hierarchical scandal denounced by Thelma Rowell. She concluded that if we really want to compare primates to sheep, we will need to learn to ask questions allowing comparison on both sides. The first question to ask sheep would be whether, like primates, they are capable of forming long-term relationships.

Certain research studies have already considered this question and have answered it in the negative. But on closer examination we immediately see that their conditions made it very unlikely that sheep could prove to have sophisticated social behaviors. First, most of the research was carried out on groups formed for the experiment, consisting of animals bought for that purpose and which had never met before. Only a miracle could have allowed lasting bonds to be established.

Many studies have monopolized their research question by taking hierarchy as their criterion of social organization. As in Geist's work on

the Rocky Mountain sheep, this results in a relatively simple description of behaviors in which hierarchy is the only organizational principle. The dominant male leads the flock, followed by the other males and then the females. Relations between individuals are determined by the size of their horns, itself determined by age and sex. Individual recognition is not necessary in this system. As Thelma Rowell notes, this is reminiscent of the first descriptions of primates' organizations(13). Behaviors are generally limited to conflicts between males. In short, these sheep do what can be expected of sheep – they follow one another around in a highly predictable way – and what can be expected of animals corresponding to theories of hierarchy – they obtain the right to push their way around with their horns, the males in front and the females behind.

As Thelma Rowell notes, these sheep do certainly behave in this way ... for one month per year, during the mating season, and that is precisely the time that Geist chose because it is when sheep are the most active. However, if we observe them in the remaining 11 months of the year, what he describes as constituting sheep's usual behavior proves to be totally different. It is the oldest female who leads the flock, while males and females have social systems that differ and are relatively independent of each other.

Lawrence wanted to explore the possibility of females maintaining bonds after the weaning period. Here again, the researcher's answer was negative and was generalized to all sheep(14). The findings of Thelma Rowell's research studies on the Texan Barbado show the opposite: long-lasting relations between mothers and daughters are so obvious that she wanted to find out in which situations these relations were not maintained. She discovered that this was usually the case when the daughters had their own lambs. Thelma Rowell thus inverted the question: instead of "Are ewes capable of maintaining bonds with their daughters?", she asked "In which particular circumstances do they not do so?"

The inversion of the question not only marks a change of object; the very status and function of the question itself changes. Seeking the conditions that cause certain events not to happen is generally part of the results, of what is elucidated through correlations and contrasts: "our results show that such-and-such a variable determines such-and-such an event, and its absence leads to its disappearance." In

Thelma Rowell's work this question slides from a downstream position to an upstream one, loses its status as a variable and becomes a condition: "In which conditions are we most likely to be able to make visible that which hitherto could not exist?" What are the conditions that sheep require to expand their repertoire of behaviors? How are we going to afford them the opportunity to give us the chance to talk differently about them? Is it these conditions that caused a colleague to fail to make visible what we allowed to exist?

We need to ask the question that fully allows the comparison: "Can they do what monkeys can do in the way of social behavior?" The mother-daughter relationship is too obvious (or too easy, Rowell says), to carry enough weight. It is the males that need to be studied.

How, in an ethogram, can we learn to identify preferential bonds? The first criterion appears on observation: the males are constantly regulating distances between one another. Can this regulation make preferences and stable affinities legible?

First, not any sheep will do. Those in Lawrence's study, for example, are unlikely to testify – or may testify in a way that is illegible for us. They are Scottish Blackface hill ewes whose organization makes links less visible. Their habits have been forged by a particular context: no predator and rare, widely dispersed resources. Consequently, the regulation of distance is not a problem for them; they tend rather to remain at a distance from one another by practicing little coordination in the form of following behaviors. They would therefore have trouble answering the two questions that initiate the research and on which the ethogram is based: How does the regulation of distance make bonds legible, and how does the troop organize coordinated movement? Paradoxically, the less sheepish sheep are not good witnesses.

The theory of hierarchy, which stems from classical ethology and has constituted the paradigmatic base of many research studies(15), seems to be a condition that may offer some visibility of certain phenomena, such as leadership(16), but does not enable us to account for sophisticated social behaviors. A single organizing principle is both too much and too little, for it could account for everything and thus bar the way to other hypotheses. This model leaves sheep few chances: here they are more sheepish than ever, not only eternally compelled to follow the others, but also eternally



compelled to follow rigid rules determined by the size of horns. The idea of a group of individuals determined by a strictly hierarchical organization leaves little room for flexibility and sophistication. Two sheep fighting with their horns is a matter of hierarchy; a sheep that guides is the sign of its place in the hierarchy. A similar organization to the one called hierarchy was observed among the females, where it is always the oldest one who gives the signal to set off and the others follow. However, the notion of hierarchy, as generally understood to have the function of federating the group, disregards the way in which this organization is implemented among ewes – as it does in the case of chimpanzees, for whom Margaret Power(17) has suggested replacing the term “dominant” by “charismatic leader”. There is no coercion.

The way in which males organize themselves has proved to be far more unpredictable. Making it visible requires constant attention to repetitions. Only after a long time does the researcher notice that every time the flock is about to move, one of the males makes a gesture that is almost imperceptible to humans, consisting of lifting its head slightly and pointing its muzzle in a particular direction.

Sometimes the group starts walking, sometimes not, until another male reproduces a similar gesture and possibly leads the group in the indicated direction.

If we exclude an explanation in terms of hierarchy, for the males, or limit it to a few behaviors, many things start to take on visibility that is not only new but also highly original. Without hierarchy animals, like researchers, are much freer, more inventive and more sophisticated; they are no longer constrained by repetition – and their scientists, thus liberated as well, can be mobilized by other problems. And in reality sheep are actually mobilized by other problems, and can be mobilized to the extent that the “other” problems will interfere with the behaviors that emerge when the question of domination of space arises.

When this question emerges, during the pre-mating period, everything that happened during the preceding 11 months and everything that is to happen afterwards will give the conflicts a particular form. A sheep does not fight with a friend like it fights with a sheep with which no affinity has been created. The months spent next to each other in the field, sometimes with their head resting on a companion’s back, and even strategies used to prevent that friend from moving away or being

approached by another sheep, will not be forgotten. A particular gesture attracted Thelma Rowell's attention: during a fight, some sheep stop and rub their cheeks, forehead or horns together. Geist interpreted these as gestures of dominance-submission. Thelma Rowell adds that this is coherent from a classical ethology point of view since they are far more frequent during fights and are sequentially associated with aggressive behavior. But, she says, this is where De Waal's chimpanzees(18) have taught us something. The closest behavior, in time, to an aggressive behavior is not necessarily also aggressive. On the contrary, it may be a move of reconciliation, especially since these friendly behaviors increase as the mating season approaches and the tension mounts. More interestingly, Rowell notes something that does not seem to have been observed yet among monkeys: 'pre-conciliation' maneuvers. Before fighting, sheep rub their heads and cheeks together. *"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 got the impression that 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'."*(19)

The fights themselves could have another explanation that completes rather than contradicts the one generally put forward. First, a series of anecdotes seems to challenge the idea that the only purpose of the fights is to threaten. How can we interpret the fact that every young male a few months old proposes to an old adult at least twice as big as himself to knock their horns together? The old male can ignore him or agree, in which case he lowers his head and presents his horns. The young male charges full-force and, predictably, finds himself propelled a few yards backwards. Can this really be considered as an intended threat or a conflict over dominance? It seems highly unlikely. Moreover, Thelma Rowell tells us that the females are keenly interested in fights and are attracted by the loud noise caused by horns crashing together. How could you make a noise if, for instance, you had only one hand to clap with? How could a single sheep make such an intense noise? By contrast, if there are two of you, you can make a huge, spectacular noise. This indicates that these fights are not, or not only, conflicts of opposition. It seems that they are a sort of sound and visual display intended to ensure the group's cohesion. "It is very exciting to the ewes, and they are all coming. And they eat

together.”

With this hypothesis we could of course suspect a sort of optimistic bias *à la* Konrad Lorenz. According to this ethologist, many fights are rituals intended to curb or channel inter-species aggression, as evidenced by the fact that they rarely result in death (at least those that have been observed).

In my opinion that is not the issue. The question here is which of these two hypotheses is the most interesting: that of an animal strictly determined by its hormones and by hierarchical rules, fighting blindly for problems of competition; or that of an animal articulating its body to other bodies, in a spirit of both competition and coordination to invent a solution to several problems? This is certainly a political choice, but not political in the sense that we prefer cooperative sheep to competitive ones because morally that is more acceptable. It is political in the sense of posing the problem of the collective that we form: do we prefer living with predictable sheep or with sheep that surprise us and that add other definitions to what “being social” means? All Thelma Rowell’s work attests to this. The idea is not to denounce the hierarchical scandal simply for the pleasure of revealing methodological biases. It is to expand the collective to those likely to be of interest. *I think cooperation is much more interesting. And this is the thing that makes the social living animals different and interesting, which we all agree that they are.*

Making more interesting, finding devices that give a chance: here we are, back to the notions that we started with, and to the question of the twenty-third bowl offered to 22 sheep. Generally-speaking, the method itself, of attracting the sheep with food, is similar to ~~the~~ provisioning practice. -It makes it possible, in certain circumstances, to approach the animals and thus to observe behaviors that would otherwise be less visible (because the animals would not allow the researcher to get close to them). Today these methods are criticized because most of them accentuate competition among animals, who are often not provided with enough resources compared to their numbers. Consequently, that which was designed to make visible not only restricts the repertoire of animals observed(20) but also considerably disrupts the way in which they organize themselves(21).

The twenty-third bowl is meaningful in relation to this problem. It is

intended not only to avoid disrupting relations but also, above all, to expand the repertoire of hypotheses and questions proposed to the sheep. The idea is not to prevent them from entering into competition around the supply of food; it is to leave them the choice to do so, to ensure that competition is not the only possible response to a constraint but rather a choice in response to a proposition. If the sheep choose competition, the hypotheses of scarcity of a resource can no longer account for their behavior. It is then necessary to conceive of other, more complicated explanations, and to ask the sheep other questions on their social behavior. Thus, if a sheep leaves its bowl, shoves away its neighbor to take its place and immediately returns to its bowl, or persists and follows the other one to oust it once again, a large number of hypotheses can be formulated – except the least interesting and most predictable one, the one that bars the way to all the others: competition over food. To be sure, there is competition, but expanding the repertoire of possible motives allows far more sophisticated explanations. Did this sheep simply want to show its fellow creature, and all the others, that it could supplant it? If so, we have a hypothesis that shows us that sheep, like primates, Bernd Heinrich's ravens(22) and Zahavi's babblers(23), have a highly complicated conception of hierarchy, in no way comparable to a rigid organization that determines behaviors predictably. In this perspective supplanting is a way of negotiating and claiming a status (or prestige, depending on the author) that is far more effective and reliable than conflict. If you enter into conflict with someone else it means that the other person is not in favor of your claim. By contrast, if they leave when you arrive, it means that they have accepted it.

It is no coincidence that this twenty-third bowl enables me to group together ravens, babblers and primates, Bernd Heinrich, Amotz Zahavi and primatologists, under the sign of a common intelligence. All have experienced – some more recently – interesting evolutions that enabled them to break away from their position in the hierarchy – ours this time. All, to some degree, attest to what the political role of ethology can be: “making things public” is not only making them known, it is also exploring conditions for new ways of organizing ourselves. The role of this ethology is legible in this emblematic twenty-third bowl: it is responsible for inventing, with the generosity of intelligence, polite ways of entering into relationships with non-

humans.

## **Vinciane Despret**

Translated from the French by Liz Carey-Libbrecht

(1) This title stems from a comment by Thelma Rowell (Interview, June 30th 2003): “People who rear the animals (in intensive farming) will go quite some way towards avoiding accepting that these animals have relationships and opinions; *animals do certainly have opinions*”.

(2) “There is really a very dreary period when nobody talks about anything but competition; and it coincides with the extremely conservative government in this country, certainly. Competition was absolutely everything”. Interview; 06/30/2003. This idea of linking the repertoire of questions put to animals to a political awareness was received enthusiastically by some researchers and with more reserve by others. On this subject see, for example, the minutes of discussions between primatologists on the influence of feminist consciousness on the behaviors of their primates, in Strum S. and Fedigan L., *Primate Encounters: Models of Science, Gender and Society*, University of Chicago Press, Chicago, 2000.

(3) B. Latour, “A Well Articulated Primatology: Reflections of a Fellow Traveler”, in Strum S. and Fedigan L., *Primate Encounters: Models of Science, Gender and Society.*, *op. cit.*, 2000, pp. 358-382.

(4) I could, following Bruno Latour, and by transforming it slightly, apply a critique of Thelma Rowell on the notion of “standpoint”: “If a philosopher studies a primatologist studying sheep and sticks to her, she will end up studying sheep because the primatologist studying sheep is very much interested in sheep!”. What Latour draws our attention to is not “we need to get rid of this notion of standpoint”: on the contrary, we need to seek a way in which “*new original standpoints will introduce a difference that will lead away from the standpoint*”. For the original citation on “female scientists studying female baboons” and Latour’s comments, see B. Latour “A well articulated Primatology: Reflections of a Fellow Traveler”; *op. cit.*, p. 380.

(5) I hope that this transformation will be legible in comparison with the

series of interviews constituting the documentary base that I have created with Didier Demorcy, for the exhibition. Regarding the “great causes” that my research and my questions focused on, Thelma Rowell answered with disarming simplicity, constantly referring me to that which research makes visible. When I asked her how feminism had influenced the fact that she was interested in females (on the basis of the hypothesis constituting a part of the debates in *Primate Encounters*), she kindly replied that it was far more simple: what she saw did not correspond to what she had been taught, although she conceded that empathy can cause one to pay more attention to what one feels close to.

(6) “A Few Peculiar Primates”, in Strum S. and Fedigan L., *op. cit.*, 2000, pp. 57-70.

(7) Interview, June 30<sup>th</sup> 2003.

(8) Interview, June 29<sup>th</sup>.

(9) Interview; June 30<sup>th</sup> and July 2<sup>d</sup>. For instance, the little blue monkeys that she observed in Africa are the prey of the eagles constantly gliding over the trees in which they live. She notes that for eagles overhead looking down at the trees, the sight of human faces behind binoculars turned towards the sky is enough to dissuade them and to convince them to seek their prey elsewhere. Kummer relates similar accounts: Hamadryas baboons that he was observing had learned to use him as protection against their predators and even against other packs of baboons that they encountered during their wanderings.

(10) Interview, June 29<sup>th</sup>.

(11) Interview, June 29<sup>th</sup>

(12) On this subject, see the notion of a “spokesperson” and a “Reliable Witness” in Bruno Latour, *Politics of Nature. How to bring the Sciences into democracy*, Harvard University Press, Cambridge, 2004.

(13) T. Rowell and C.A. Rowell, “The organization of feral Ovis Aries Ram Groups in the Pré-rut Period”, *Ethology*, 95, 1993, pp. 213-232.

(14) T. Rowell, “Till death us do part: long-lasting bonds between ewes and their daughters”. *Anim. Behav.* , 42, 1991, pp. 681-682.

(15) See Donna Haraway, *Primates Visions*, Verso, London, 1992.

(16) Geist, however, “picked out this importance of leadership; ‘who goes first’ is a role that is important”. Interview; June 29<sup>th</sup> 2003.

(17) *The Egalitarian: Human and Chimpanzee*, Cambridge University Press, Cambridge, 1991.

(18) F. De Waal, *De la réconciliation chez les primates*, Trad. M. Robert, Flammarion, Paris, 1992.

(19) Interview, June 29th

(20) See, for example, Thelma Rowells's criticism of Washburn and Devore who, to film baboons, threw peanuts to them. They thus created an image that lasted for decades, of dominant loutish males pushing about the females and systematically occupying the center of the group (where the said peanuts naturally fell). See "A Few Peculiar Primates", *op.cit.*

(21) This problem was raised mainly for Gombe chimpanzees. According to Margaret Power (*op.cit.*), the complete deterioration of the pack observed by Goodall's team was a consequence of the stress of competition and frustrations. The social upheavals caused by the food provision technique led to increasingly pathological behaviors among the chimpanzees, going as far as the sadly famous infanticides followed by cannibalism in the 1970s (J. Goodall, "Intercommunity interactions in the chimpanzee population of the Gombe national park" in Hamburg and Mc Cown (eds), *The Great Apes*, B. Cummings publ., . New-York, 1979, pp. 13-53).

(22) B. Heinrich, *Ravens in Winter*. Vintage Books, New York, 1991; and *Mind of the Raven*, Harper Collins, New York, 2000.

(23) Babblers are birds that have considerably changed our opinions of the species, since Israeli ornithologist Zahavi observed them. A. Zahavi and A. Zahavi, *The Handicap Principle: a Missing Piece of Darwin's Puzzle*, Oxford University Press, Oxford, 1997. See also V. Despret, *Naissance d'une théorie éthologique. La danse du cratérope écaillé*, les Empêcheurs de penser en rond, Paris, 1996.