

## Final discussion

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**Arthur Gicqueau:** Jürg [Helbling] had a question for B. Lahire, so Christophe [Darmangeat] will answer it.

**Jürg Helbling:** It’s about parochialism, which you illustrated with the Warlpiri. I think it’s a good example that shows that, to a certain degree, this notion doesn’t mean anything. With the Pintupi, to whom they feel closest to because they are also “spinifex people”, they don’t intermarry, saying that their women are very ugly. At the same time, there are intermarriages with some tribes they consider hostile. As for the *lungga*, these abominable, incestuous and cannibalistic beings, they don’t even know them, because they live too far away. An important point is that the Warlpiri, as such, do not exist. There are only different regional groups, each consisting of between 200 and 500 individuals and who get together only two months a year. The rest of the year, they are dispersed in small camps whose composition, in terms of kinship, is completely heterogeneous. There is no parochialism. Given that a person’s totemic affiliations depend on where they were conceived and that the groups are very mobile, these affiliations are very diverse, even within a sibling group. So, I repeat, the notion of parochialism, in this case, does not make sense.

**Christophe Darmangeat:** I don’t know a lot about the Warlpiri, and probably much less than you. I’ve simply read M. J. Meggitt’s book, in which he refers to a sense of collective belonging, which is accompanied to varying degrees with the devaluation of other peoples. But does it mean nothing or does it mean everything? I would say: “Neither one, or both!” With that, do we know everything? Do we know who they marry, who they fight with and why? Obviously not. But does it not mean anything? I think it does. It is an illustration, which could be found in almost all human groups, of this propensity of our species to feel solidarity with people we consider close, similar to ourselves, etc., and more distrustful feelings towards people who, for some, will be considered hostile and enemies. Of course, this fact alone does not provoke war, feuds or many other things. But it is still the raw material from which group conflicts can be created. It is not the only ingredient, but it is nevertheless a starting point that can be observed everywhere. There is one aspect that I forgot to mention earlier, but which B. Lahire

rightly emphasizes in his book, namely that groups are obviously not fixed once and for all. The whole evolution of human societies has consisted in broadening the reference groups, in creating ever larger communities. This is to such an extent that in the modern era (in the very broad sense of the term), various humanist movements have come to say that, ultimately, human beings are all similar, should all have the same rights, that there should no longer be any hostility between subgroups within humanity, etc. Whatever the variations on this idea, it obviously didn’t come from nowhere; it developed gradually alongside economic progress and the globalization of relationships. But to return to the original question, observing this type of “us” and “them” reaction, even among hunter-gatherers, and noting that it can be found almost everywhere, is still significant.

**Nicolas Teyssandier:** Personally, what struck me was how everyone said that violent behavior appeared to be universal, observed in some primates, in ancient Rome and up to the present day. The connection between ethnology and archaeology highlights the extent to which we archaeologists struggle to identify tangible indicators of violence. Jean-Marc [Pétillon] emphasized this a lot, using the example of hunter-gatherers, focusing on the Upper Paleolithic. He showed this clearly: it is true in terms of equipment, representations, and even funerary practices—funerary practices are often transparent, because there is not much to work with, with barely a few graves. In fact, in many cases, across entire techno-complexes that span tens of thousands of years, all we have are a few human remains scattered around the settlements. So how do we proceed? Isabelle [Crevecoeur]’s example of Jebel Sahaba might be the only case offering us an evolution, or a proposed evolution, of violent practices over time, with perhaps cultures that, over a few millennia, have maintained different relationships to violence and pacification. This is a tangible example, which is in any case supported by data. There is also the fact that we, in archaeology, undoubtedly more than in social anthropology, have this system of proof, this permanent quantification, which introduces a kind of disconnect in communication between disciplines. We could see it clearly in archaeology, the classic example

being Isabelle [Crevecoeur]’s presentation: everything is quantified, everything is specified, etc. When faced with ethnology, archaeologists tend to think: “He tells us a nice story, but how can I generalize it?” The question, therefore, and which was to some extent the aim of the conference considering the cross-disciplinary backgrounds of the organizers and speakers, is: how can we bring our approaches together? I have the feeling that this is a real challenge. As Sylvain [Lemoine] said earlier during the break, we don’t always have examples. When we talk about hunting, we don’t always have all the evidence to say that remains come from a hunted animal. And yet, we will tend to consider that any piece of reindeer, horse or bison found in the Upper Palaeolithic is the result of a hunt, even if we don’t always have the evidence to prove it in this specific case. Regarding violence, we can say almost nothing from the objects, except Jean-Marc [Pétillon] who brought up some clues about certain osseous tools from the Paleolithic, that I found convincing. Still, such examples are rare and limited to specific periods. As for stone tools, no one has yet proposed ideas about particular points, or objects in general, that could be related more to violence than hunting. We have an abundance of armature that we all interpret as being intended for hunting, whereas at Jebel Sahaba, we found microliths, elements of barbed weapons, which were clearly used in combat (or at least also in combat). Jean-Marc [Pétillon] suggested that we might expect that these tools would have been subject to particular investment on a technical level, but Jebel Sahaba shows that this is not always the case. You can fight with ordinary microliths. Perhaps this is the direction in which the discussion should move forward.

**François Bon:** First, a huge thank you for these two days that you have given us, which have been fantastic. I really enjoyed it, and I think that many of us appreciate the privilege of listening to you over these two days. Now, switching to my role as Paleolithic specialist: as we listened, a troubling idea emerged. If I oversimplify what has been said, we get the overall impression that conflict is seen as essential to forming societies, since defining others as “different” helps us build internal social rules, with possibly the question of the relationship between men and women also coming into the equation. Pushing the logic further (and again, oversimplifying), if we do not find evidence conflicts in the past, can we still say that humans then formed societies? And indeed, we do not have many records of evidence. I am responding both to B. Lahire’s ideas and to S. Lemoine’s presentation. What we can say about humans in the Paleolithic era is that there was at least one ‘other’: animals. They were constantly involved in hunting, and we can imagine that behind the act of killing the animal, there was a whole world of “us” and “the others”. “Us” being the hunters, and “the others” being the animals that are hunted, perhaps involving an ideological and symbolic dimension, the respect and the rituals that surround all of this. My point is that I’m a little confused. I am not convinced that we need to find warlike societies in the Paleolithic. It’s not certain. They

may well have formed a society—and even according to some of the methods you mentioned, particularly the question of “us” and “them”—by forming other types of relationships, which may be, for example, their relationship with animals.

**Sandrine Costamagno:** I would like to follow up on what you were saying, specifically in relation to your talk on primates and the gradient between chimpanzees and bonobos. I know nothing about ethnology, but both are animals that form societies. We see different kinds of violent behavior, even though we are talking about sociable primate populations. So this raises questions about the connection Christophe [Darmangeat] made between sociability and conflict. I wasn’t able to attend Jean-Marc [Pétillon]’s talk this morning, and therefore did not see the examples you mentioned. However, it seems to me that there is very little evidence. And what this scarce evidence seems to show is relationships: we see the transfer of raw materials over long distances.

**F. B.:** That the dialectic of conflict may be necessary for the construction of a society is philosophically interesting to think about, but conflict does not necessarily occur between humans.

**Pierre Lemonnier:** Your remark is crucial. “We only have bits of bone, only fragments, it’s all lost, we don’t have the whole picture and anthropologists flood us with overwhelming details that we will never be able to recover”. But the point is to bring together people from different disciplines. We did this for twelve years at the Paris seminar on material culture, where anthropologists and archaeologists came to speak, and all they could say was: “But what can we do with what you’ve just told us?” Still, there are a few preliminary answers. The first, which I repeat year after year, even if it is not pleasant to hear, is that there is no simplified version of social reality tailored specifically for archaeologists alone. It’s unfortunate, but that’s the way it is, and that’s the first point. The second is a question we have already asked about another example: is it better to know nothing than to put forward a false hypothesis? At the very least, we can already identify the bad hypotheses. For example, if you say, “According to A. Testart, when there is a severed head, it signifies prestige for the young warrior”, then it’s time to move on. Everywhere on Earth, when there are warriors, there is prestige of young warriors; but on the south coast of New Guinea, this is not what is to be understood. The thing is that the severed heads, as Christophe [Darmangeat] said, are about growth, reclaiming names, establishing personal identities. In this case, it’s better not to know anything at all than to rush straight into the wrong model about warrior prestige. Another point is generalization. I found few tangible elements, except to point out that a wooden arrow between two ribs may leave a mark, and that it is important to remember that it can cause infection—at least, that’s what people say: when the arrows are prepared in this way, it is not necessarily to make the person bleed, because from this point of view, there are several models of arrows: it is to infect the wound. Is it something worth looking at or not? I don’t know. Gene-

ralization, in the case of what I have told, does not happen in warfare. It is first realized in the fact that invisible agents exist that, by definition, you will never see. But they were there! On the issue of cannibalism, there is a case—I mention it because I happened to encounter it—which shows that one cannot understand what cannibalistic action is if you don't understand that people eat their dead, that the dead eat them and that they eat enemies, living or not. All these are part of a tightly interwoven system. This means that we must not say that, in general, "they were cannibals". We must keep in mind that the neighbors, a few kilometers away, were perhaps doing something else. The only generalization here (because I know a little about Christophe [Darmangeat]) can be seen in the small ethnographic example I presented: the practices that took place before the war, how warriors were made, and things of that kind. After the war, there was peace. It is still important: one cooperates—cooperation, that wonderful word that was mentioned earlier. And after war, there is a micro-appearance of wealth. Around these matters of war and compensation for the dead, the mechanisms that lead to the establishment of *de facto* or *de jure* inequalities are set in motion. This is not an insignificant ethnographic finding! And it is not unique to New Guinea. So, we propose a model—or rather several models, in the plural, it's always much better!—but we must bear in mind that reality is never as simple as what we perceive it to be. This is the point on which we can have real dialogues with archaeologists. We must be wary of ethnologists who talk about the Bongo Bongo. Did I mention them yesterday? "Oh, among the Bongo Bongo, it's not the maternal uncle, it's his son, and the leaf is not red, it's yellow, etc." These people must be expelled. But when ethnologists point out to you that cannibalism cannot be explained by simply thinking: "either it's good, or I'll get some strength", that things are more complicated, it is positive to know that things can be more complicated. There are no ready-made results, only medium-sized models such as those that A. Testart was trying to develop. But we are not just here to say, "No, no, that's not it". Our role, when you propose a hypothesis, is to point out to you that ethnography shows that it is more complicated, or that there are other possibilities to consider.

**Isabelle Crevecoeur:** I completely agree, and I think that in fact, we archaeologists suffer from the opposite bias: we spend our time telling ourselves that it may be something other than what we think it is, and often, precisely, we almost forbid ourselves to go any further in the interpretation of archaeological data. I have the feeling that it is a French school of thought, which is characterized by this restraint with regard to the range of possibilities that ethnoarchaeology offers us.

**C. D.:** What shows that we sometimes manage to rise above these challenges is the book we have mentioned several times, by B. Boulestin and D. Henry-Gambier on the Placard cave. It is a case study where a number of archaeological clues are used to establish a number of inferences. Obviously, it's like forensic science: you make hypotheses, deductions, etc., but you'll never have

the full answer! Nevertheless, it is possible to produce hypotheses and rule out others (or at least make them less likely), precisely thanks to ethnographic comparison. Jean-Marc repeated it at the beginning of his talk: 99% of social facts, whether they're about male domination, religions or many other things, will remain invisible to archaeology, especially when this archaeology deals with ancient societies. Jean-Loïc [Le Quellec] mentioned it again yesterday: how can you interpret cave art using archaeology alone? It's impossible. However, we can cross-reference the different strands of evidence and try to come up with interpretations that we hadn't thought of, and assess their likelihood. We must do it with caution, but we must do it. Let's help each other!

**P. L.:** J.-C. Gardin used to say that archaeology can't construct an interpretation without reference to ethnology and history. That's how it is. And he spoke of the "logic of plausibility". So when I see colleagues doing a wonderful job, say, on hunter-gatherers, and who start telling me things about gender relations, at some point you simply have to add a footnote to say, "And now we're going to talk about something else. We're going to abandon our solid, robust methods, and we're going to imagine scenarios"—the plural is fundamental.

**C. D.:** I have a question for Sylvain [Lemoine]. Several of us have seen the title of an article that appeared a few days ago this week, according to which bonobos are not at all as nice as we had been led to believe, that in reality, they are as bad as each other and that they are just hypocrites. Have you heard about this?

**Sylvain Lemoine:** This question allows me to address two or three other points. This recently published article shows that when using the same methodology and comparing equivalent populations, the rates of aggression among male bonobos are in fact higher than those among chimpanzees... except that the article focuses on intragroup aggression, and not on interactions between groups. Bonobos are as social a species as chimpanzees, even if the levels of cooperation are different. That is to say that cooperation, which is necessary among chimpanzees for territorial defense purposes, is not necessary among bonobos. Bonobo cooperation—especially among genetically unrelated individuals—manifests differently, often in female coalitions. So the fact that the authors found that the males are particularly aggressive is interesting, because it also explains the co-dominance of the females, which helps to contain the aggressiveness of the males. This female role could explain the peaceful relations observed between the groups. In my paper, I emphasized what E. P. Willems and C. van Schaik showed through theoretical models: when the dominant sex is philopatric and defending the territory is important for reproductive success, collective actions can be taken and territoriality can be advantageous. With both bonobos and chimpanzees, the females disperse and the males are philopatric. However, the fact that the males are not dominant over the females, that the females are co-dominant, perhaps implies another type of relationship between groups. The females come from neighboring communi-

ties, which produces a degree of familiarity that allows for peaceful relations. In addition to this, there is much more food for bonobos, and therefore less competition. I would like to add a few thoughts in relation to this. Christophe [Darmangeat], you showed a quote from Bernard [Lahire]'s book about chimpanzees and the attractiveness of females; in their case, males fight to attract females. In fact, there is a slide that I did not show in my presentation, but it is a topic that I have worked on a little, and where I have analyzed the data. As things stand, we have no proof that conflicts among chimpanzees necessarily attract females. To begin with, females can be victims of killings. Then, of course, there are cases of abduction, where individuals are temporarily held captive. It lasts a few hours, a day or two. These are often primiparous females, who have not had offspring. But there is no evidence that they are thus forced to remain in the group that kidnapped them. We don't know what happens when they do stay because, by definition, we can't follow them. We know that these females visit communities, that they sometimes return to their own community, spend a month there and then leave. We know that they can travel up to 40 km, but we don't know what criteria they use to join a new community. Perhaps what matters is the territory: if there are fewer females in a given place, there is little competition within the group and therefore the possibility of carving out a place for oneself. Perhaps it is related to the emotional relationships they begin to build with males. We don't know. So it seems that the extreme territoriality of chimpanzees is closely linked to their desire to increase the size of this territory, with all the consequences that I have mentioned. Otherwise, a few general thoughts in relation to this very interesting conference. I find the interdisciplinarity very positive, as it allows us to discuss a specific theme from different angles. Given the title of the event "the body of my enemy", I expected more discussion about otherness, about relationships with others. If we put ourselves in the mindset of a chimpanzee, we have to understand that they live in a state of permanent war, even if it is a low-level conflict. Much of their time is spent being aware of the risks to which they are exposed, exactly like what Pierre [Lemonnier] described in Papua New Guinea. Where should they crack nuts, spend the night, travel, and with whom? Etc. This is an essential dimension. I am currently writing a paper in which I talk about the landscape of xenophobia, which is an application of the landscape of fear, which is a principle of ecology. It is really something that is constantly present in their minds. We may find it a little difficult to put ourselves in the shoes of this kind of entity, due to the fact that we live in peaceful societies. If this were not the case, it would probably make more sense to us. As far as otherness is concerned, chimpanzees really do consider the members of their own group differently from those of outside groups. But they also hunt certain monkeys, they see antelopes, birds, etc. So there is also a whole world around them that they question, and with which they interact in different ways. They do not interact in the same way with a monkey they hunt as with a neighbor

they want to kill. We have also seen examples of ostracism (or what we interpret as such). An overly violent male is expelled from the group and, from then on, the behavior observed towards him is exactly the same as that which would occur between groups. Things can shift quickly. But I think it's worth exploring this relationship with otherness. Different entities will have a different relationship with each other.

**Jean-Loïc Le Quellec:** Let's take the three objects we looked at, with the inverted barbs: in the absence of knowledge of Australian examples, I wonder if any prehistorian would have imagined that they might be weapons used to administer justice. It is far from certain. I think that's the benefit of this kind of exchange: considerably broadening the field of hypotheses... even if it doesn't make the work any easier! As for invisible things, they are invisible to archaeologists, and even to ethnologists! So it really is an extremely complicated field. The problem is that nothing is more present and more active in most societies—including our own—than the invisible. And on the issue of cannibalism, which is very much on our minds, what is the situation in France, in our own society? If we consult the codex, i.e. the collection of medicines authorized for sale, in the middle of the 19th century and up to the beginning of the 20th century, we find a medicine that is a kind of panacea, which is used to regenerate, to prevent aging, and which is called axonge. There are several types, including human axonge, which was recovered by executioners from the corpses of the condemned. This fat was sold at regular pharmacies as a general remedy. There was another product of the same kind: a medicine called "mumia", which was mummy powder. It was so popular that the demand outstripped the supply of real mummies and fake mummies were produced to be sold as the real thing. The principle was ultimately the same as that seen in many places around the world, where a person acquires the body of someone belonging to another group in order to regenerate themselves. This was the case until the 19th century in France. That said, what kind of archaeological remains would such practices leave behind?

**Louise Poquet:** It's really a small detail, a question for P. Lemonnier. I was wondering to what extent you deliberately used the first-person singular, saying "I", when you are speaking on behalf of the people you worked with speak?

**P. L.:** It's an anthropological atrocity, just as we talk about "the" Baruya when there are many different Baruyas! Let's just say it's a way of blending in a little: "If my neighbor tells me I've built my fence wrong and calls me a good-for-nothing, I'll either jump down his throat or go hang myself". I say "I" because after 40 years of familiarity with people, you feel a bit like you're speaking on their behalf. In some cases, they even let you do it. A lot is said about anthropologists; a colleague who works in New Guinea, called S. Breton, made a film that was quite well received, in which he explained that anthropologists spend their lives getting fooled. That is true, but not always, especially if we are friendly and respectful.

Incidentally, to go along with B. Lahire, the Baruya have much lighter skin than their neighbors because they live closer to the sun. Indeed, it is a natural mark and at the same time it is a construction of the mind to say that they are different. As I was saying about the war in 1983 and the kwaimatnié that were entrusted to us, there is a certain mutual trust. But I don't consider myself a Baruya! I say "I" to make it more lively, but there is no deeper motive behind it.

To mention one point of interest from this conference, when I heard S. Lemoine talk about cooperation and coordination, it got me thinking. Because the differences between "zero and one" and "presence and absence", four days' walk away... Admittedly, they are separated by real cannibals, so when you are not a cannibal, you have no desire to cross the territory of your cannibal neighbor: that matters a lot. But still: at a very short distance, the Baruya cooperate from morning to night. They wake up, they go out together—two or three of them—to do something in the forest. A house must be built between sunrise and sunset, and therefore by collective work. Yet, at just four days' walk away, people never do anything with others. One guy builds his house in a month, and once a day he'll dare to say, "Could you pass me the rattan strand on the floor?" The intra-Anga contrasts are not meant to frustrate archaeologists—even though one thing is 0 on one side of the river and 1 on the other, which is deeply despairing. But the thought that when there is cooperation, there is also training for other tasks, including for war, stimulates me. I have learned a lot. And I had tears in my eyes when I saw the chimpanzees taking care of the injured one.

**Marion Corbé:** Regarding the interest of this kind of conference - I attended the previous one a few years ago<sup>1</sup>—I think it has really contributed to my thinking. What I especially appreciate is hearing other disciplines talk about our field, which tends to be our exclusive domain. They are "our" Prehistoric people, and we are the only ones who can talk about them, or, more precisely, who think to be the only ones who can talk about them. I am thinking in particular of Christophe [Darmangeat]'s work on gender inequalities and his very rigorous methods. P. Lemonnier, you said that ethnographers provide nice stories. But in fact, the books written by the various speakers here are far from presenting "nice stories". They present thoroughly reasoned arguments. For instance, they have shown that there is no evidence of any matriarchal society, and that the distribution of observations makes it hard to imagine that societies in the past were devoid of male domination could have existed without leaving any trace in present-day societies. This conclusion is based on methods that come from archaeology, but it allows us to talk about our subject. Because then, when we consider the material culture of these societies and try to think about them, we have to take this fact into account and look at our artefacts with a different perspective, even if they don't tell us anything about it. And here, I am simply talking about male-female relations, but when it comes to conflicts and related issues, I think it's the same thing.

It prompts new reflection. So yes, I thoroughly enjoyed these two days.

**J. H.:** I have a question for S. Lemoine. What does ethology contribute to archaeology and ethnology? It's quite a journey from studying simians to discussing the war in Ukraine! I think I heard two answers to this question. The first is the idea that some apes are more violent and others more peaceful. But the same is true for humans, and I don't think it's a very original or interesting idea. We can cut it with Occam's razor and tell ourselves that there is nothing meaningful to be gained from it. The second answer focuses on chimpanzees. One gets the impression that this is a society that behaves like bellicose human societies. I didn't quite understand; sometimes you generalized about chimpanzees and primates, including humans. And I wonder if you believe in the theory that there is a biologically determined propensity for humans to behave in a rather violent rather than peaceful manner. But if that is the case, I wonder why mobile hunter-gatherers, in most cases (I choose a moderate formulation!), do not wage war and are not in a Hobbesian state of war.

**S. L.:** Maybe we need to look at things a little differently. Even if you find human societies with no wars, that doesn't mean there's no parochialism. You don't need to observe wars to see what I've demonstrated. This duality between cooperation and violence, or at least the exclusion of others, the different way in which they are viewed, can be expressed in other ways than conflict. In my opinion, this is a universal human characteristic. All humans will form groups and tend to favor their own, without necessarily coming into conflict with others. Now, do chimpanzees behave like warring societies? What I have tried to show is that there is a kind of duality. I like to use the image of Janus: cooperation and violence are two sides of the same coin. The high level of cooperation observed in chimpanzees might not be possible without conflict. Among bonobos, where there are no conflicts between groups, these forms of cooperation are much more limited. Bonobos hunt, but not collectively. They only hunt alone, opportunistically, and unlike chimpanzees, their hunts are not organized at all. This suggests that chimpanzees have a greater need to cooperate in certain contexts. Humans, too, are complex. We have these two facets: we are capable of great violence but also extremely prosocial. I don't think anyone has mentioned it here, it's a theory that may not be well known in France, but I quite agree with it: for the last a hundred thousand years, humans have self-domesticated. We have reduced our reactive aggression—not to be confused with proactive aggression, which is conscious and premeditated (it's a bit like the difference between manslaughter and murder). When we domesticate an animal, we reduce its aggression, which results in a whole syndrome. In a well-known experiment conducted in Russia, foxes were bred for tameness and began to resemble dogs, with drooping ears, white fur pigmentation, a reduction in brain size, and so on. R. Wrangham was the one who proposed the idea that humans have domesticated themselves over the course of a process occurring over the last hundred thou-

sand years. This means that our current level of aggressiveness is lower than it was 300,000 years ago. It has also allowed us to be an extremely prosocial species. The prosociality observed in humans is linked to this domestication syndrome and here we can draw a parallel, which is part of evolutionary convergence, with bonobos, who are also self-domesticated. Their brains are smaller than those of chimpanzees, they retain juvenile traits into adulthood, they still play until adulthood, and so on. They have all the syndromes of the domesticated animal. The idea with bonobos is that there is selection pressure, particularly from females, to reduce aggression levels. This is what has led to the emergence of this species, which is much more tolerant in terms of sociability. It is an evolutionary convergence: bonobos separated from chimpanzees after separating from humans, and we know that this process is recent. What I'm getting at is that our social nature is expressed in the way we interact, in our ability to stay on the metro with people we don't know—even if we don't look them in the eye: an old primate trick, in fact, to avoid conflict. A famous maxim says that if you put 100 humans on a plane, there's no problem, but if you put 100 chimpanzees on a plane, they'll kill each other. However, this also means that we have certainly retained violent tendencies, which may be inherited from a much older past than our extreme sociality, which has been exacerbated by this much more recent process of self-domestication. I think that ultimately, we tend to take a very black-and-white approach to these issues. Like J.-J. Rousseau's idea that humans are either inherently good, or inherently evil. I believe it's more nuanced: we are capable of both. I live in Cambridge and sometimes I go to football matches. It's really amazing to see how people behave in a stadium. In a minute, they can start to hate someone, just because that someone claimed that there was a foul. From then on, insults are hurled left, right and center. As soon as people leave the stadium, they are friendly with everyone again, and the aggression has completely disappeared. So we are simply capable of both. And I think that what has been exposed in this conference are all the conditions in which these different forms of violence, even these different forms of sociality, are expressed.

**S. C.:** But on what basis can R. Wrangham claim that 300,000 years ago, we were more violent than we are today? From a scientific point of view, what evidence does he have? Brain reduction? But the volume of our brain is increasing! I don't understand.

**S. L.:** If we consider the relative size of the brain, it has decreased over the last 100 millennia. In other words, during the course of evolution, the size of the brain increased, but for the last 100,000 years, the trend has reversed. The brains of the homo sapiens of Jebel Irhoud, who lived 300,000 years ago, were larger than those of modern-day sapiens. That said, R. Wrangham does not rely solely on this aspect. He identifies a range of behavioral traits. We are neotenous—a concept highlighted long ago by S. Jay Gould—which means we have retained juvenile traits, a common feature of domestication. According to R. Wrangham, that selection pressure

was necessary to reduce aggression. Where opinions differ is that, according to him, this pressure was exerted through sanctions, with aggressive individuals being either banished or killed. There is no solid evidence of this, it is mostly speculative. On the other hand, from an anatomical point of view, I think it makes sense.

**S. C.:** What really struck me during the day, and I'm surprised that it wasn't mentioned at all, is the masculine character of the phenomenon. It's clearly masculine. Doesn't this also show in patriarchal, patrilineal societies, where increasing violence seems tied to these social structures? Bonobos, for example, form matriarchal societies, which are less violent.

**F. B.:** I completely agree with you. Over the last two days, we have been talking almost exclusively about men. Women have been somewhat neglected, with the general idea that the construction of a society based on the ideology of conflict emphasizes a masculine role. In any case, that is what emerged from your presentations. However, the real question is to know what is the purpose of these conflicts, and what role do women play in the construction of these societies. And here, it opens up an interesting line of inquiry.

**S. L.:** In the video I showed with the chimpanzees, I don't know if you saw it, but females are present with their young. It's a question I'm often asked: "Oh, but I thought that in chimpanzees, wars (or at least battles) were a male thing". In fact, the females are just as violent. They are capable of killing and committing infanticide. So there is no difference. The only difference is that they take fewer risks. They are less in the front line. So I don't think it's necessarily a male or female issue. Among humans, it may be related to locality—patrilocal or matrilocality, we would have to look into that. Personally, I often use the example of hyenas. With hyenas, it's the other way around. The females are dominant over the males, they are bigger than them, they are full of testosterone, and they have enlarged clitorises because of it. And they are the ones who wage war! It is not the males who wage war, it is the females! They don't disperse: it's the females that stay in the group. So maybe this is in fact what is decisive: not necessarily male/female per se, but rather which sex is dominant and which stays in the community. It makes more sense for the territory to be defended by the sex that stays in its community, rather than by the sex that disperses.

**C. D.:** We continue to raise many questions to which we do not necessarily have answers. A first problem is that biologically, the human species is unified—there are only minor variations. Nevertheless, we see extremely diverse behaviors across societies, some being very peaceful and others much more violent. And then, once again, violence and war are two different things. There may be societies where a huge number of homicides are committed but where there is no war, because these homicides do not take place between organized groups, and vice versa. So, there are several levels of discussion. The first is: "What is the raw material?" Here, I agree with Sylvain [Lemoine]: we tend to think in dichotomous terms.

Are we cooperative, or are we violent and aggressive? As if the two were mutually exclusive, and we couldn't be both at the same time, or neither. And then, we are human, we are cultural. And so, based on the raw material left by evolution, social contexts play a huge role. So, what are the factors that favor behavior—I don't even know if we should talk about behavior, let's say institutions instead—what leads to war, headhunting and things like that? The perspective can go both ways. One view is that society wages war because people are aggressive. I am not convinced by that. Another view is that in a given society, individuals, especially males, are aggressive because the society is warlike and people are brought up in that spirit from an early age, as Pierre [Lemonnier] observed among the Baruya. In that case, it's very complicated. Certain societies are patrilineal, or patrilocal, or both, and are not particularly bellicose or aggressive. There are other cases: we were talking about the Tiwi, hunter-gatherers who were the Australian champions of polygamy. The official record is that of a man who had 29 wives during his lifetime. Among hunter-gatherers, that is a huge number! They engage in feuds, but they do not wage war, because their kinship system prevents the formation of real coalitions. Conversely, the Iban of Borneo, who are farmers and where everyone speaks of near gender equality, are neither patrilocal nor patrilineal, and they are notorious headhunters. The Iroquois, which we have mentioned several times, formed a matrilineal and matrilocal society. Nevertheless, men spent much their time fighting. So in all of this, anthropologists do what they can to find patterns, but it is not easy, because there are so many interacting factors. I would just like to finish on a point of recurring disagreement with Jürg. I am not at all convinced that mobile hunter-gatherers are less...—I don't know whether to say “violent”, “beligerent”, “warlike”, etc., depending on the type of phenomenon under consideration—than others. Even for Australia, that's debatable. And elsewhere, in Papua, I reread P. Roscoe's article recently, there were a number of hunter-gatherer societies, either pure or almost pure, that were just as violent as their farming neighbors. There is no difference from that point of view. The Selknam and other Patagonian tribes fought quite fiercely. As for Alaska, we can say that the Inuit are a bit special because they live in villages and they are wealthy. However, they wage wars that have no economic purpose, which are also pure wars of vengeance, wiping out entire villages. On the Andaman Islands, it would seem that hostilities between groups were quite open before the Westerners arrived. This is certainly a complicated debate, but I am not at all convinced that ethnography shows that the violence of mobile hunter-gatherers is rare or exceptional. This is a divergence over which we have not finished debating!

**J. H.:** I did, however, quote C. Darmangeat, who wrote that at least in Western Australia, populated by genuine mobile hunter-gatherers, feuds are observed but not war, and the same is true among the Tiwi. I don't know if he has since changed his mind... I could also comment on the other examples.

**P. L.:** I have told this story about material culture. After years spent among the Anga, I realized one day, even though I had spent my life observing differences from one valley to another, that they did not make the same barriers, the same traps, that they did not have the same bark capes, etc., that until the arrival of the steel tool, everyone among the Anga could do everything. Everything. I said this yesterday: the man who went into the forest was the very same man who had chosen and obtained the blade, the one who had made his own tool. For our part, it's hard to imagine societies where people carry out the entire *chaîne opératoire*, from sourcing raw materials to the making of the tool and then using that tool to make something else. We struggle to even conceive that. The same goes for what I told you yesterday: the little girl I saw grow up, who married a Baruya man, made the mistake of going to the enemy and was killed with a smile on their face, all while her child's head was smashed with a club. For a society to accept, live, laugh and sing victory songs depending on whether a man or a woman has been killed and to rejoice in this, requires colossal institutions. These institutions are necessary to make people internatelize who the enemy is—The enemy is not seen as a human, quite the opposite, and I have emphasized this point. Sometimes we talk about enemies that we eviscerate because we consider them non-human; these days, there are lots of people who take their neighbors across the border for people who are less human than them, which is not the case. How can people live day to day in a world where they can be shot in the stomach while going to empty their bladder in the morning—which, I imagine, is dreadful? How can we understand a society in which this phenomenal degree of violence is accepted, something from which we are protected? It is very difficult to imagine. We all know that Coca-Cola bottles don't grow convenience store shelves. But for us, who cannot make any object without being part of a complex technical system, it is very difficult to imagine, as an archaeologist, what it means to live in a material culture that is entirely shared, where you know that your neighbors have the same daily physical interactions with the material world as you do. That is what ethnology reveals. And this has something to do with ritual, because when you try to transform little initiates in the same way that you transform pieces of wood, it is because the material world is the first that allows us to think. I am going to quote F. Sigaut, not to conclude, but just to think of him. F. Sigaut wrote, almost on his deathbed: “techniques are the prototype of the effective relational system”. If it's not the right hammer, not the right nail, not the right board, nothing happens. And it is because material culture and techniques provide us with the prototype of a physical system, of a system of relationships that works, that we tend to think of some of our social relationships the same way we think of technical actions.

**F. B.:** What struck me while listening to the ethnographic examples is the question of what it's like to have a constant feeling of fear, knowing that you might be struck by an arrow at any moment. Personally, I recognize that

philosophically speaking, I don't believe that man is by nature violent. I may be wrong, but in any case, I have no proof of it and you have not provided any. Therefore, I think that living in a society in which violence is thus permanently latent must have essential social functions. And that is exactly what you were saying just now: I think that the question of the gender relations in this case is essential; you illustrated it, but somewhat indirectly. The key question is how certain individuals come to dominate others, perhaps specifically, those who are capable of killing. Living in such constant stress entails a very high social—and even biological—cost: it is not insignificant that people are constantly being killed, what is more, young men and women of reproductive age. In Darwinian terms, it is not an efficient system at all. The social cost of such stress is considerable. I imagine life at Jebel Sahaba: fetching reeds from the banks of the Nile must have been a perilous task, knowing that you could fall into an ambush at any moment. So what social purpose did it serve? You've suggested some new ideas, it's true, like the idea that conflict represents the Janus of cooperation. How can conflict be a ferment of social functioning, which means that we are paying the price of taking a bullet in the head at any moment because it serves fundamental social rules? That is very interesting.

**P. L.:** Women must not take back power, because for the people I work with, it's the cornerstone of everything. It's explicit. When I wrote this 500-page book that you probably won't open, M. Godelier said to me, "Kid, you forgot something. A guy once said to me: 'We stole power from women, and if they take it back, things will turn really bad.' In Anga societies, that belief alone is enough to keep you on the borders or wherever, scared to death, because otherwise, the women might take back the power. It's not implicit or hidden." P. Bonnemère, for example, is currently working on what happens in the world of women when boys are initiated. A lot of things happen: "My little boy is going to become a future warrior", things like that. But the answer is simple: we do all this because if we don't build a society of warriors with male initiations, things will really go badly for us men.

**N. T.:** Isabelle [Crevecoeur] alluded to it just a moment ago, but it comes up every time the subject is raised. Jebel Sahaba is the last glacial maximum and the territory is shrinking. It is a kind of oasis on the banks of the Nile and perhaps many people want to live there. At this period of the Paleolithic, sedentarization was almost happening, and there is agreement on the existence of a demographic increase. What role do you attribute to this variable, to the relationship between population density, competition for sustenance, and the phenomena of collective violence?

**I. C.:** I haven't given it much thought, but I want to add something to what you're saying because this idea of demographic pressure is indeed tempting. In any case, that's what we see in the distribution of sites. The article by R. Kuper and C. Köhler shows these developments, these incredible pulsations, in the archaeological sites of the Nile valley. To respond to this idea of temporality, I wonder what the effect of population density is, high

or low—100,000 years ago, the density was much lower on a global scale. For there to be conflict with the other, the other must exist, he must not live very far away. But perhaps these encounters with the other were not so easy and so frequent. That is something that is difficult to perceive.

**N. T.:** In any case, over time, we clearly see that among *Sapiens* there were increasingly more long-distance exchanges, which implies more contacts and the development of cooperation.

**J.-M. P.:** To continue on this point while returning to what François [Bon] and Sandrine [Costamagno] were saying. Yes, indeed, there was fear because you never knew if you might be attacked by an arrow or a spear. The answer to this was alliances. I don't think there was any group on bad terms with all its neighbors, otherwise the problem would be resolved very quickly by itself. Each existed in the within a mosaic of other groups. Some relationships were very hostile, others were more neutral. Then there were potential or actual allies, who came to their aid or protection, with whom they could form a coalition against others. The incentive to build alliances came from internal group cohesion, xenophobia, rejection of others, but also the need to not stand alone against everyone else. This is where, in relation to what Sandrine [Costamagno] was saying, it is not contradictory to imagine societies with collective violence, at the same time networks of exchange over hundreds of kilometers that show that these people, in one way or another, transmitted and exchanged goods, or even possibly circulated from one group to another. And I think that here too, that side of things counts. You can't survive alone against everyone. You need allies. This necessity, too, must have played a structuring role, at least as much as everything else.

**S. L.:** What you have just pointed out is interesting. I think the mechanism may be the same. It is quite possible to create entities on a larger scale than that of one's group. These entities might be created around shared emotions, a common language, a shared deity, etc. People find something common ground. Then, does this commonality lead to hostility, opposition or competition with other groups? That is a different question. In fact, the mechanisms are the same on a smaller and a larger scale. Moreover, my colleague L. von Holstein has just published a paper in *Nature*—it's about modeling. There has also been interspecific competition. Our species has long lived alongside other species, whether Neanderthal or Denisovan. It all depends on population sizes, migration rates, etc.

**I. C.:** I think that, compared to more recent periods, our vision of these ancient times is biased. That is the problem, and we find it very difficult to grasp. If we simply consider the last 100 millennia on the African continent, the number of human remains found in archaeological sites is extremely small. Our understanding remains very fragmented.

**C. D.:** Time is running out, and I don't know if this will be the final word, but I wanted to comment on the issues of conflict over resources, demographic pressure, etc.

among hunter-gatherers. I have mentioned this several times, and even among farmers, I don't think that this is something that is found, at least not in an obvious way, in the ethnographic data. When people fight, they don't say it's because they are facing a shortage, that they lacking something they want to take—or if they do, it's quite rare. On the other hand, they fight to seek revenge. I am not saying that this disproves any role of demographic pressure. However, I am saying that even if this explanation comes to us spontaneously and seems obvious because we live in a world dominated by the economy and the lure of profit, I am not at all certain that it is wise to assume that it is always and everywhere the right explanation. The second aspect is that we should always be cautious of the tendency to attribute a will to societies. We are quick to say that society “decides” something. But in reality, it doesn't work that way. People don't get together and say to themselves, “How should we do this?” More precisely, they sometimes get together and decide what they are going to do, but in circumstances they have not chosen and with often limited means of action. When you live in a stateless society, whatever it may be, one of the problems to be solved is that if anyone gets the idea of using violence, a priori they are in a position to do so, because they have the means. And so, overall, same solution emerges everywhere: everyone defends themselves, with the help of their relatives, friends, or possibly larger groups. But in all cases, given the absence of the State, violence is available. That doesn't mean that everyone is constantly murdering everyone else. But if there is, say, one murder every three or four years within a group, that is enough to create a certain atmosphere and to make it a problem that must be managed. W. L. Warner, among the Murngin of Australia, had calculated that out of a population of 3,500 people and over a period of 20 years, there was an average of ten violent deaths per year. Ten violent deaths per year out of 3,500 people does not prevent people from living, but it does create a certain climate. From then on, indeed, even to go to urinate, one is constantly on one's guard. And when society is confronted with this, people cannot get together and say: “Let's build the State to prevent feuds”. It doesn't work like that! So, people just live with it...

**J.-M. P.:** Regarding the explanations in terms of pressure on resources, and thus, ultimately, environmental determinism, since environmental changes are supposed

to be the cause, one thing has always bothered me: this argument is used in multiple, sometimes contradictory ways. In the course of my reading, I have seen situations where an increase in visible violence in the archaeological record coincides with an increase in aridity, and therefore a scarcity of resources. Therefore, it is the pressure around scarcer resources that explains the violence. I have also read about an increase in violence coinciding with an improvement in environmental conditions, and therefore more abundant resources, and that this abundance had led to population growth, an increase in population density, and at the same time more opportunities for conflict and an increase in violence. Thus, the same factor is used to support opposite conclusions: it turns inside out. So, what is causality and what is mere correlation? If these environmental situations are often very prevalent in prehistory, it is because, in fact, they are always available. We don't always have human remains or bone tools, but we always have environmental data. And as these events took place in the Quaternary period, the environment often changed. So, in the end, the statistical probability that these modifications are correlated with social changes is not that low. Don't we tend to assume too quickly that the two are linked? I am reacting because we also encounter this kind of reasoning about hunting techniques: if people changed weapons, it is because they must have switched from more collective hunting to more individual hunting and that this transition is linked to environmental changes. In other archaeological cases, the opposite explanation is offered, both justified by changes in local fauna. It is therefore a prehistorian's self-criticism: in general, I find that we use this variable a little too quickly as an explanatory factor—which does not mean it plays no role at all!

**F. B, I. C.:** Jebel Sahaba is a very special case. Imagine a situation where, in the space of a few centuries, huge areas suitable for living turn into deserts with only a few oases left, forcing populations into a narrow, fertile strip of about 50 m wide along the Nile. Imagine the tensions that this must have caused: space must have been extremely precious!

#### NOTE

1. *A stone age aristocracy ?*, Musée National de Préhistoire, Les Eyzies, 2019.

