

## Sex and War: How Biology Explains War and Offers a Path to Peace (Book Discussion)

Wednesday, February 11, 2009 Woodrow Wilson International Center for Scholars

## Edited Transcript—Ann Gibbons

I enjoyed that. I have to say, first off, I live in Pittsburgh. I'm in the Steeler nation, so I know a little something about coalitional -- male coalitional aggression.

The night the Steelers won the Super Bowl there was pillaging in the streets, damaged buildings. It was quite interesting. I also write about human evolution for *Science*, which, as my brother-in-law who's in the audience said is sort of the type specimen, if that means anything for you -- to you, for aggression in the sciences. It's the field where there's sort of the most competition -- one of the fields where there is intense competition for access to fossil sites and it brings out very aggressive behavior, so first-hand observation.

Malcolm Potts I wanted to say has made for me reading his book, which is really interesting, a very good read, really well written. I enjoyed it. Lots of good stories from your travels around the world, wonderful tidbits about things like the origin of the word bereavement. It came from the Reavers. These were armed raiders in northern England that had scrimmages with the Scots so there are wonderful bits of where some of the origins of our words have come from in our current language from aggression.

The book is not only a good read, but for me it was steeped in really good, high-quality research on primate studies and human origin studies and the fossil record. He makes a very strong case that men have inherited a predisposition to band together to wage battle. Call it the Genghis Khan effect. It means that they get to spread a few men who are better at taking over new territory, get new resources. They get women and more food. Their genes spread farther and, as he showed us again, this is not necessarily true for women. It's just a redistribution of resources. It doesn't help the entire community.

As a writer who is focused on human evolution for many years, I've been drawn to the evolution -- writing about the evolution of human behavior, especially the dark side of





human behavior. Origins of cannibalism is one of the topics I've written about, and Malcolm documents this in his book as well. Humans are capable of incredible acts of kindness but also despicable acts of terror. We murder, slaughter, barbecue, and even eat our own species, and we've been doing it for a long time. And just how long is one of the central questions of the book and several lines of research for different researches I write about.

Cannibalism has now been documented to go back at least 800,000 years ago in Atapuerca, Spain, where an ancestor of humans and Neanderthals, juveniles have bones that have been processed like animal bones, marrow smashed open as if they were eating them, and this has become a science that has very -- a man at Berkeley, Tim White, has established criteria for deciding if a fossil has been processed for cannibalism, not just carnivore cut marks.

There's a skull from Ethiopia about 600,000 years old, possibly older fossils. I was just in the field with a researcher who does this work in Ethiopia and there are some possible signs of earlier signs of cannibalism. It's been found in Neanderthals in France. The first archaeological evidence of warfare doesn't appear until much later, and Malcolm writes about that in his book, probably more with the advent of city states after agriculture began 10,000 years ago so somewhere between 8,000 and 5,000 years ago when we have much more complex societies and division of labor and a few people dominating power we begin to see much more organized warfare and strong evidence and then very quickly it becomes rampant and widespread in every culture.

So it's all over. Some researchers, as I said, have been pondering whether humans, whether this is inherent. Is this an ancient behavior we inherited from a very early ancestor or is it more recent, and, again, that's in the book. Potts talks about some of the intellectual heritage just briefly. There's been sort of the Rousseauan view: the French philosopher Jean-Jacques Rousseau along with other researchers such as Ashley Montague thought that our ancestors lived in a peaceful world, this sort of innocent natives view.

Others, notably the English philosopher Thomas Hobbes argued that warfare is the norm. That inherently every culture will return to warfare. That we're violent by nature. This pessimistic model influenced some of the early work in human origins. When Darwin first predicted that we arose from ancestors in Africa in 1871 in his book *The Descent of Man*, there was no fossil evidence that he knew of. There was a Neanderthal that had been discovered, but his friend -- he was told: "Don't worry. It's not a hominid."



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To make a long story short, the first fossil didn't come from Africa until 1924, the Taung Child, and Raymond Dart would call it the killer ape, because it had these massive jaws. The killer ape and there was all sorts of projection of very violent behavior. Well, now it turns out the research on the killer jaws: these were nut -- they would eat nuts, hard nuts, and that's just the kind of massive jaw that -- it's a dietary adaptation, not necessarily something being done for violence.

So which view is correct? What is the ancestral state? Although there were many different kinds of human ancestors over the last -- we evolved in the last four to six million years in Africa and there were many different ways to be human. It's very different to meet all the different types of human ancestors. There are no other human species alive to show us different models for male aggression. We just don't have them, so we have to one, look at the fossils. Look at DNA and see what's been selected for, and also look to our closest relatives, the chimpanzees and gorillas, to see -- what are their social models? What are the males doing there?

And I should say it's an auspicious time for us to be thinking about this because tomorrow on Darwin's 200th birthday there's going to be a major announcement of -- researchers in Germany have sequenced the Neanderthal genome for the first time: the entire genome and I can tell you it won't be long before researchers -- they have to analyze it. They've just started looking at it -- before they start looking for differences and traits such as traits, testosterone, regulation of aggression. I'm sure that will come out at some point. That's not -- there hasn't -- I don't know how well tied the research has been defining the underlying genetics of aggression, but you can bet that they'll be looking for behavioral differences in the Neanderthal genome.

Really interesting to me is the notion that there were many different ways to be a human ancestor, but there's variation between species but also within species. So as I write about the past fossils, I'm curious. Were males always so aggressive and were every species as aggressive? Did Homo erectus bands go out on raids? Did Australopithecines? We don't really know. So one of my questions here is -- I'm going to skip ahead here.

Dr. Potts has sort of found -- it talks about research that Richard Rangam did and some other researchers on chimpanzees looking at Pan troglodytes, which is the chimpanzee that you're probably most familiar with, the common chimpanzee, and in these groups the males band together, as he said, to murder chimpanzees from other groups, to get access to new territory





and more resources. They have intense competition for food and resources.

Curiously though, there's no team aggression among the males in Bonobos, which is Pan paniscus, another species of chimpanzees. We see more balance of the sexes. The females are more empowered. They actually use sex to do that, to bond very closely, so it's harder for the males to break them up, and the females are more quickly -- they'll get meat. They have more power in all different ways, so they're showing us a different model, and I think one of my questions is -- many of us assume the more aggressive model might have been what came from the common ancestor we share with chimpanzees, but Bonobos are showing us another model. There was probably variation in aggression in the ancestral populations that gave rise to chimpanzees and humans and variation in the populations of early human ancestors.

In fact, a very interesting trait shows up in the first fossils in the human lineage. One of the defining traits of being a member of the human family rather than chimpanzees is upright walking. Another one is a reduced canine in males, a smaller canine. You get a big, dagger like canine in chimpanzees. One thought is there is a change in social structure, less fighting, less biting between males. Now that could also mean they got better at teamwork.

So these are interesting questions. What do those social models look like? And one thing that we can't do but would be so interesting, and we were talking about this at lunch today: What if you took a chimpanzee and put it in an environment where it had less competition for resources like a Bonobo, more readily food? Would we see over time an evolution to a different kind of social structure? So I say that only because I think it's an interesting -- we have to be careful about assuming how deep -- what the ancestral condition was there.

So where are we going? This is the other question. We are still evolving. One of the really interesting discoveries of the last three years are researchers, when they look at the human genome Project, the HapMap project, mapping human genes, have discovered there are many, many genes that have come under natural selection that have evolved in the last hundred thousand years, since modern humans spread out of Africa. And you have to think of all these different populations that went off into different parts of the globe, and they evolved differences.

So there's variation in diet, response to illness, perhaps in aggression, and it would be interesting to see: are there any cultures -- have you come across any cultures where there are men that are less aggressive? Where there's been selection for that? Or today, are we seeing,





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in our sexual selection mates being chosen -- they're a little less aggressive. I mean, it would be interesting to think that we are still evolving. The story isn't over yet.

Finally, we get to solutions. How do we -- you know, in the face of this genetic predisposition to be very aggressive males -- I'm all for empowering women. I won't fight against that, but also treating the conditions that allow violence. I think you've got that.

I guess the one last question I have about that is certainly you see cycles. It's almost a biological response where young males seem addicted to violence. You know, you think of the IRA or Bosnia and Serbia. What do you do when there are negotiations and they do everything they can to destroy that peacemaking? Do you give up on that older generation? Do you put all the resources in the young? I mean, that was another question for me in how you proceed in the future. So I think I'll stop at that.



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