FHA Publishing
& Communications
Pty Ltd ACN 103 136 778

Ph: + 61 2 9486 3308
Fax: + 61 2 9486 3409
Email: info@fhapublishing.com
Website: www.fhapublishing.com
GPO Box 5095, Sydney NSW 2001, Australia

THE HUMAN CONDITION

The impasse-breaking documentary series

Transcript of the DVD Pilot Presentation of Part 2 of a proposed 4-part series about the biology of the human condition.

The following is a transcript of the 'rough-cut' pilot presentation of Part 2 of a proposed 4-part documentary series about the biology of the human condition—humans' capacity for both 'good' and 'evil'.

This pilot has been made by FHA Publishing & Communications (FHA P&C) to illustrate the potential of the proposed documentary series.

FHA P&C is an Australian based organisation established to present information about the human condition.

We believe the human condition is the underlying issue in all human affairs, the stalling point in human progress and the subject that science must now address. The purpose of this documentary is to prise open debate about the human condition.

The title and content of the proposed 4-part documentary is:

THE HUMAN CONDITION

PART 1
God: The Question of God, Meaning and Purpose—and The Human Condition

PART 2
Soul: The Question of the Existence of Moral Instincts in Humans
—and The Human Condition

PART 3
Consciousness: The Question of Consciousness, What Is It
and How Did It Emerge—and The Human Condition

PART 4
The Human Condition: The Question of How to Reconcile and
Ameliorate Our Estranged, Alienated Human Condition

(**Note** : Detailed synopses of the four parts of the proposed documentary series, including a detailed synopsis of part 2, is available from <www.fhapublishing.com>)

Transcript of the DVD Pilot Presentation of PART 2 <u>Soul</u>: The Question of the Existence of Moral Instincts in Humans—and The Human Condition

1. Brief Preview

Narrator: Given the current state of the world it is a breathtaking proposition to suggest that our deepest human nature is intrinsically one of 'goodness' and being cooperative. Likewise, it would be amazing to think that all these ideals we are confronted with every day of justice, democracy, equality and fairness all have their origins in the highly cooperative social model of our very early ancestors. Moreover, that concepts such as our 'soul', 'conscience' and 'morality' are references to our human instinctive, genetic orientation toward cooperativeness fashioned all those millions of years ago.

This work of Miller and Griffith and others like them with respect to ideas like mate selection and the role of nurturing in our past presents itself as a compelling and interesting alternative to explaining our moral goodness. It stands to seriously challenge the view of Robert Wright, E.O.Wilson, Richard Dawkins and others that our moral behaviour is nothing more than a subtle form of selfishness—that true or unconditional selflessness or altruism doesn't exist. This emerging view is that in fact it does exist.

Having said that, it also leaves us with some confronting philosophical problems, first and foremost being: if as a species we were once gentle, loving and cooperative then why did we depart from that ideal state and become the extremely competitive, selfish and aggressive species we are today.

2. Overview Of the Issue of morality in humans

Narrator: Every day in the news there is evidence of the turmoil of the human situation today. There is conflict between individuals, races, cultures and countries. There is terrorism, starvation, mass displacement of peoples, genocide, environmental devastation, runaway diseases, drug abuse, depression and epidemic loneliness.

Despite all this disharmony could it be that our oldest and deepest human experience is one of living in a state of sharing, caring, harmonious togetherness? Could it be that our ancient primate forebears were not the 'red in tooth and claw' brutes, ruthlessly competing against one another for survival as has often been

asserted. In fact could it be that intrinsically we humans are ‘morally good’ creatures, predisposed in favour of selflessness and cooperation.

This is the second of a four-part series on ‘The Human Condition’. This part deals with the subject of Soul and the question of the existence of moral instincts in humans.

We want to set out to explore morality: What does morality mean? Where does it come from? How long have humans possessed it? Time honoured questions for the philosopher, the scientist, the theologian and lay person alike have included: What is the origin of our capacity for love, care and sensitivity towards others? Is this some divine dimension in us conferred on us by a transcendent, overseeing God? Alternatively, are our moral values something that we have created for ourselves during our cultural development? Or could a capacity for ‘goodness’ be part of our very nature; in fact part of our genetic make-up? Could it be that we actually have genes or instincts that give us a sense of morality, and that this capacity calls on us to behave in accord with it?

Every day, in every facet of human life we are surrounded by concepts of moral value and virtue. We are confronted from the world around us and from within ourselves with concepts of what is morally ‘right’ and ‘wrong’. Individually and collectively there is this set of ‘morals’ or ‘ideals’ by which we variously feel we should attempt to live our life. The virtue of doing so is extolled. We variously aspire to live our life in accord with these ideals.

Generally speaking from the youngest age we are taught in many different ways the simple religious proverb, ‘do unto others as you would have them do unto you’. If we look at the vast array of cultures around the world each have mythologies, stories, codes, rituals and ceremonies that contain dimensions of moral guidance.

The focus of the teachings of the great religions of the world is on morality. In Christianity for example there are the Ten Commandments. In more recent times nations have written ‘constitutions’ that are constructed around the simplest of moral values, such as ‘everyone is born equal’. Systems of justice and law have been established seeking to protect against discrimination, inequality, physical and other harm of persons and their property by others. There is the governmental process of democracy. There are charitable organisations and government support and welfare.

These are some of the institutions we have created that find their core objectives as being morally orientated. Is it possible that these systems of thought and their institutions are expressions of an innate, inner dimension to our nature? Could they be an expression of our instinctual or genetic make-up that has its origins in millennia past?

What do we mean by morality?

Narrator: Before exploring further how we might explain the biological origins of our human morality, it makes sense to put forward a definition of what is meant by 'morality'.

Moral 'virtues' or 'values' include the concepts of love, care, self-sacrifice, cooperation, fairness, honesty, trustworthiness, altruism, charity, kindness and empathy. More specifically, morality can be described as a sense that our behaviour is 'good' and right when we are behaving with kindness, fairness and honesty towards other humans, and a sense that we are being 'bad' when we are acting against these values.

What this program will explore is the possibility that humans do have an innate moral conscience that acts as an inner, intuitive guide in our decision making. After all, how could we have an inner sense of guilt and recrimination about unkind (non-ideal) behaviour unless some deeper intrinsic part of us felt at odds with such behaviour? Surely this must be evidence that there is something within us that is opposing, and calling us to account for such behaviour. If we do have a born-with, innate sense of morality then what are the biological origins of it? How could we have acquired such an aligning, sometimes accusing voice?

How have humans historically accounted for morality?

Narrator: Through the ages humans have sought to give some account for the origin of this moral side of ourselves. The oldest account has been that this capacity comes from outside of ourselves, from a divine source, a transcendent, overseeing God. More recently, over the last 3,000 years, a belief has developed that through the process of reasoning and logic all aspects of human behaviour, even the deepest, can be explained and comprehended in a rational way. This reason based account has argued that morality and ethics is an intellectual human construct that has evolved culturally and socially with modern man. These two means of accounting for morality have been described respectively as *transcendent* and *empirical*.

However there is new work in science that is suggesting there is a third option. This work advances the view that there is a biological explanation, origin and basis for our morality. Moreover, that our morality has its origins in our genes, that it is instinctive. To properly understand this line of argument we need to first look at how science has approached the issue of genetic selection, and our own biological evolution.

The Problem for Natural Selection was the existence of Good

Narrator: There is little doubt that science took one of its biggest steps forward with Charles Darwin's theory of evolution and natural selection, principally put forward in his 1859 book *The Origin of Species.* Darwin's work was the platform for Social Darwinists to actively foster the notion of all of life operating in a framework of

'survival of the fittest', 'competing to exist' with a 'genetic imperative to reproduce'.

The following extract from Part 2 of a 2001 documentary titled 'Testing God: Darwin and the Divine' (2001, Channel 4) takes up this discussion about the evolution of human behaviour.

Commentary: Before long, evolution was no longer seriously challenged as the basic explanation of our existence. The motor of this process was seen as the gene's simple and selfish determination to survive. But there was a problem. How could a selfish motor produce beauty, unselfishness, and the sheer complexity of human behaviour.

Anita Lasker-Wallfisch: There's something that I remember, it's a very trivial story, but I was in a tram, and Jews weren't allowed to sit down, they had to stand up outside, et cetera, and I saw the mother of a school mate of mine, I'm going now back to the school where we are still mixed Arians and Jews, and she saw me and got up - she was sitting. She got up, and stood next to me, never said anything, but it was a silent gesture of 'I don't agree with this.' I mean, with all the things that I have lived through and seen, this is something that stuck in my mind, so it must have been an important message to me at the time, that not everybody is on the side of the Nazis.

Commentary: This was the real dilemma at the heart of evolution. If the problem with God was the existence of evil, the problem with the selfish gene was the existence of good. In the Bronx district of New York, this paradox is clear. Amid poverty and deprivation, goodness clearly survives. People were willing to acknowledge evolution, but not its apparent corollary, that unselfishness was just a distortion of our true selfish nature.

Rev. Martha Overall, St Ann's Church South Bronx: The gospel of John says, can anything good come out of Nazareth? Well, Nazareth is very much like the South Bronx. They're both poor communities full of outcasts, people who aren't treated very well by society, and the rest of society looks at the South Bronx and says, can anything good come out of the South Bronx? Well, yes, a heck of a lot of good can come out of the South Bronx.

Everyday experience tells me that basically human beings are good at the outset, and children, when they're dropped from heaven are good. It's just the sophistry of the world that messes them up, that makes people feel that it's totally acceptable to step on other people in order to get themselves ahead.

Commentary: So the good side of human nature became a problem for evolutionists. If they wanted people to understand that they were not the product of God's design, they had to explain how a species driven only by the need to survive could create notions of morality.

Narrator: That extract from the 'Testing God' documentary makes clear the seemingly irreconcilable problem that biology ended up confronting itself with, namely how does the 'selfish gene', 'survival of the fittest' theory reconcile with evidence of 'good' in humans, with our capacity for emotions such as love, care and charity. In the turmoil of the human situation there *are* acts of human goodness. How does biology explain this? And it poses the question of how could a selfish motor create a sense of caring, selfless morality in us? It rightly suggests that biology must one day be able to explain this anomaly, and it has begun to try and do just that.

3. The view that our morality is due to selfish reciprocity

Narrator: Some 10 years ago a new school of thought emerged in biology that claimed to take account of this problem.

In 1994 the American biological theorist Robert Wright's book *The Moral Animal: Why We Are The Way We Are—The New Science of Evolutionary Psychology* was published. As the title suggests, this book, which the *New York Times Book Review* named as one of the 12 best books of 1994, seeks to explain the biological origins of human morality. In 1998 the renowned Harvard biologist Edward O. Wilson's book *Consilience: The Unity of Knowledge* was published. In it Wilson developed upon Wright's thesis about the origins of our morality. An extract from *Consilience* published in the April 1998 edition of *Atlantic Monthly* was titled **'The Biological Basis of Morality'**, and it was introduced as follows: **'Philosophers and theologians have almost always conceived of moral instincts as being transcendent or God-given. Is it possible, though, that ethical reasoning derives not from outside but from our very nature as evolving material creatures?'** .

Significantly this new field of evolutionary psychology acknowledged that humans do indeed have 'moral instincts', that traits for selflessness, kindness and cooperative behavior are embedded in our human genetic make-up. Further, the work acknowledged that selflessness was a product of our biological evolution.

Significantly, while biological theorists like Wright and Wilson acknowledge that humans have cooperative instincts, they claim that these cooperative instincts derive from biological situations of either reciprocity or kin selection. The situations of reciprocity being referred to are those where animals cooperate for mutual benefit—'if you scratch my back I'll scratch yours'. And the situations of 'kin selection' are where individuals care for others who are related to them in order to ensure the reproduction of their own genes that their relatives share.

What Wright and Wilson are doing is attributing a cooperative inclination in humans, our **'moral instincts'**, to subtle forms of selfishness because that is what reciprocity and kin selection are. The selflessness is not unconditional, altruistic selflessness because the genes are selfishly ensuring their own reproduction—'I'll look after you but only on the condition that you look after me'. Wright and Wilson are saying that any acts of selflessness by humans are from our gene's point of view actually acts of selfishness. In so doing they remove the problem of how the apparently selfish motor of genetic evolution produced what we understand to be our selfless morality.

This thinking argues that humans don't have *truly* 'moral', unconditionally selfless, altruistic instincts. Wright and Wilson are proposing that human 'good' can be accounted for under the umbrella of selfishness. They are dismissing our moral instincts, in fact our 'soul', as merely a refined form of selfishness.

4. The emerging view that we do have genuinely moral, altruistic instincts

Narrator: This proposition that humans don't fundamentally have a capacity for altruism has been protested vigorously by some who believe such ideas undermine human commitment to morality as an ideal. For example, Randolph Nesse, Professor of Psychiatry and Psychology at the University of Michigan, has said: **'The discovery that tendencies to altruism are shaped by benefits to genes is one of the most disturbing in the history of science…**[because] **Understanding this discovery can undermine commitment to morality—it seems silly to restrain oneself if moral behavior is just another strategy for advancing the interests of one's genes.'**
(Mentioned in *The Origins of Virtue* by Matt Ridley, 1996.)

But if Wright and Wilson are not on the right track then what other alternatives are being offered by biology? A very different, and in many ways exciting new account of our human nature is actually emerging, as the work of the following two scientists from opposite sides of the globe shows. Both these researchers present a biological explanation of human morality and goodness that *doesn't* portray our morality as a subtle form of selfishness. Their thinking argues that humans *do* have unconditionally selfless, genuinely altruistic instincts.

Geoffrey Miller, Senior Research Fellow at the Centre for Economic Learning and Social Evolution at the University College London, is a young scientist who is

challenging much of the conventional wisdom about the origins of morality. Author of *The Mating Mind: How Sexual Choice Shaped the Evolution of Human Nature,* which was published in 2001, Miller is one of a new breed of evolutionary psychologists.

The following is another extract from the 2001 documentary 'Testing God: Darwin and the Divine'.

Geoffrey Miller: I think a way in which human nature got over-simplified was this phrase, 'survival of the fittest', was viewed as the only legitimate explanation for human nature. So everything that was of interest, you had to find a 'survival value' for it. For many of the most interesting aspects of human nature, like consciousness, or poetic language, or a sense of humour, or the moral virtues, it's very hard to find survival pay-offs for those things.

Rev. Martha Overall: I don't think we can possibly afford to ignore the good side of people, because that's basically what the truth is, and we get carried away with theories based on incidents, and - and a few statistics, and they're a very superficial factual analysis. The real truth is the goodness in the hearts of people, especially the hearts of these children, of mothers who will go out and - and save somebody who's homeless and drunk and addicted, who's in trouble out on the street simply because in their words, I'm a mother too. That kind of relationship to another human being on the basis of nothing more than their humanity and their basic goodness, one to another, is far more truthful than a bunch of numbers.

Commentary: And the more we unravelled the constituent elements of our genetic make up, the more puzzling became the very things we valued about ourselves. With God, it was simple. The nature we'd been given had goodness and altruism within it. But selfish genes, what could they give us but selfishness.

Geoffrey Miller: It was fashionable to take a sort of evolutionary, reductionist view that said there really isn't any such thing as genuine altruism. What that was reflecting was the relatively simple state of evolutionary theory at the time. At the time, basically the way that you explained kindness was either people are kind to their genetic relatives with whom they share genes, so they're really promoting copies of the same genes, so that's why parents are kind to kids, and why you're kind to your nieces and nephews as well. Or you have sort of short term trading relationships, reciprocity relationships, and you can explain those, and everything else tended to be pigeon-holed in to one of those two categories, either it's nepotism, or it's short term reciprocity. There was a tendency to say everything sort of kind and gentle and spiritual about human nature is a sort of facade, is a sort of gloss on selfish genes that are ticking away underneath.

Rev. Martha Overall: I think it's the exact opposite, I think selfish, nasty and brutish is learned behaviour.

Geoffrey Miller: I think it's actually more scientific to say altruism is real, kindness is real, romantic love is real, how do we explain it, rather than to sort of sweep it under the carpet and say, oh, that's just culture.

Narrator: This line of thinking by Miller has common ground with the work of Australian biologist, Jeremy Griffith. Author of a number of books about the biology of human nature, Griffith is Director of the Foundation for Humanity's Adulthood, an independent organisation established to specifically investigate the biology of the human condition, humans' capacity for good and evil. While Griffith agrees with Wright and Wilson that cooperative behaviour is in our instincts he strongly disagrees with their explanation for it. Like Miller, Griffith argues that humans have genuinely altruistic 'moral' instincts—that our moral instincts are not just a facade for selfishness as Wright and Wilson would have us believe.

Jeremy Griffith: I think it was a significant step for biology when biological theorists like Wright and Wilson acknowledged that we humans do have inclinations towards goodness and morality embedded in our genes. But to say that that sense of goodness and morality is nothing more than a subtle form of selfishness, is selfish selflessness, is I think quite disturbing. In fact I would say it is an act of evasion and denial of everything that we intuitively know about ourselves as human beings. What they have done I believe is deliberately try to find a way to hide the existence of genuinely altruistic instincts in humans because of the confronting implications that flow from such an acceptance. To accept that we have selfless, loving and cooperative instincts begs the question, 'why do humans behave in the opposite way now, namely selfishly, aggressively and competitively?' It leaves us confronted with the dilemma of the human condition, the question of our corrupted state. But there comes a time in the human journey when we need to be honest and confront the truth about ourselves—because only by doing that can we put ourselves in a position to find understanding of ourselves. You can't find the truth from a position of lying or, more precisely, psychological denial.

I believe that biology can provide an explanation for the origins of our morality that is consistent with what we know about ourselves, an explanation that accounts for our genuinely loving, cooperative, unconditionally selfless, altruistic instincts. I also believe there is a very sound biological reason why humans haven't been able to behave ideally since this early time in our primate past.

Narrator: Parts 3 and 4 of this documentary series will look at this question of why humans departed from the utterly selfless, fully cooperative ideal state.

5. The role of mate selection in developing altruism

Narrator: So Miller and Griffith find common ground in believing that Wright and Wilson have not yet arrived at the full picture about ourselves. The work of Miller and Griffith also has an overlap in their explanations for the origins of our altruistic moral capacity. Firstly to look at Miller's explanation for our moral instincts.

Again we return to an extract from the 'Testing God' documentary.

Commentary: Geoffrey Miller is one of a new breed of evolutionary psychologists who are trying to show that evolution need not view the good side of us as something outside biology.

Miller's argument is that the survival of the fittest is only part of our evolutionary story. Our ultimate raison d'etre is to reproduce. So it's not just natural selection between predator and its prey that shapes us, but sexual selection as well.

Geoffrey Miller: We think survival of the fittest couldn't go the whole distance in accounting for human nature, and we think there must have been something else to fill that gap, and I'm saying sexual selection is what fills the gap, because it's capable of noticing anything that we can even talk about. If I notice that somebody else has a rich consciousness and I sort of wonder, why do they have that, my capacity for noticing that contains the answer, it says, I noticed that, that might influence a sexual choice I make with regard to that person, it might make them more attractive to me, and just by admitting that you're saying that's subject to sexual selection.

We have this amazing window into the minds and souls of other people that other animals don't, because we have language, because we have rich social lives. And that means sexual selection has the power to reach in to these moral virtues and these spiritual interests and to shape them in a way that it couldn't do in any other species.

Commentary: According to Miller, this is the crucible of human evolution. The sexual tension between men and women is what has driven our evolution and shaped our natures.

Geoffrey Miller: When I think about how sexual attraction might have worked among our ancestors, as they were sort of going through the final spurt on the way to becoming modern *Homo sapiens*, I tend to think of them as conspicuously displaying their capacities for sympathy and kindness, so anything that would have been sexually attractive, would have been subject to sexual choice, sexual choice could have amplified these traits, made them more elaborate, more

conspicuous, more easily displayed. It is an argument for runaway kindness in the same way that runaway sexual selection can explain the size of the peacock's tail. In our species it explains the size of our hearts and our capacity for romantic commitment, and I think the sort of intricacy and depth of our consciousness as well.

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6. The role of nurturing in developing altruism

Narrator: Griffith agrees with Miller that mate or sexual selection played a critical role in giving humans altruistic instincts, however he believes that mate selection is only part of the story. Griffith's view is that nurturing of infants also played a crucial role. He points out that most animals have to look after their offspring if their offspring are to survive and he says that it is this maternalism that had the potential to train offspring in unconditionally selfless, altruistic behaviour and thus produce an instinctive orientation toward such behaviour.

Jeremy Griffith: Most species of animals have to nurture their offspring, give them food and shelter, otherwise their offspring die. Maternal instincts ensure the continuation of species. What is interesting about maternal instincts or traits is that to an observer they appear to be selfless while actually being selfish. The mother *appears* to be giving her offspring everything for nothing in return. She is giving them nourishment, shelter, warmth and protection but receiving no apparent reward for herself for doing this. However while maternalism looks like it is selfless behaviour the truth is that because the offspring carry the mother's genes, by selflessly fostering her offspring the mother's maternal genetic traits are actually selfishly ensuring their own reproduction. Maternalism is a form of kin selection.

So while maternal traits appear to be selfless they are in fact selfish, which genetic traits normally have to be if they are to reproduce and carry on in a species. An unconditionally selfless trait, such as to give your life for others, normally can't become established in a species because being self-sacrificing the trait doesn't tend to carry on. The fact is maternal traits *are* selfishly fostering their own reproduction in the offspring but they nevertheless do *appear* to be selfless. The offspring appears to be being given everything for nothing in return.

It is this *appearance* of maternalism as being selfless behaviour that is I believe so significant. It is significant because from the offspring's point of view, from its viewing brain's point of view, it believes it is being constantly treated in an unconditionally selfless way. Even though the maternal treatment is actually genetically selfish the offspring only sees and experiences the treatment as being selfless. What this means is that all day long while it is being nurtured the offspring is being taught that the way you should treat others is selflessly. That is the offspring's experience of life—basically, to 'love one another'.

The point is that while maternalism is genetically selfish it trains the developing minds of infants to be selflessly behaved. What this means is that an opportunity exists in maternalism to train infants to behave selflessly towards others and thus to grow up and treat others in a selfless way.

How ants and bees and the cells in multicellular organisms became totally cooperative

Narrator: Griffith believes that nurturing was a way for animal societies to become as cooperative as ant and bee societies are, or the cells and body parts of multicellular organisms are.

Jeremy Griffith: I think this device for nurturing cooperative behaviour is so effective that it is a way for animal species to become as cooperative as ants are, or as the cells in our body are. If I pull out a hair from my head and throw it away my body carries on, the hair gave its life for my body. All the parts of my body have subordinated their individuality to the good of the greater whole.

Our body and ant colonies became totally cooperative, fully integrated wholes or units or collectives or colonies or societies by elaborating the reproductive unit. The individual ants, or individual cells in our body, deferred their sexual reproduction so that the colony or body is still only one sexual individual. Deferring their own sexual reproduction eliminated the divisive competition amongst the individual ants or cells to reproduce. Their reproduction was ensured through their support of the sexual queen in the case of ants, or the sexual parts of our body in the case of our body cells.

The problem for large animals is they can't employ this device of elaborating the reproductive unit for developing a fully cooperative, integrated colony because it means too great a loss of variability. For example, if you had one reproducing queen zebra and 10 sacrificial, non-reproducing offspring dedicated to protecting her, and this became a common practice amongst zebras, then the genetic variety of a population of 1,000 zebras would be reduced to only 100. This is a drastic drop in variability and species need genetic variability for adapting to change. Ant colonies are only small in relation to their environment and so ants have developed a colonial way of living without any significant loss of variability. But for large animal species developing colonies by elaborating the reproductive unit is not a viable option. Large animals had to find another way to form fully cooperative colonies or societies and I'm saying nurturing was the means by which they could do that.

So in terms of what was explained earlier in Part 1 of this documentary series about the meaning of existence being to develop the order of matter on Earth due to the influence of negative entropy—animals that were small in relation to their environment were able to become integrated by elaborating the reproductive unit, while larger animals had to employ nurturing and mate selection.

Primates preconditioned to develop nurturing

Narrator: While nurturing, Griffith believes, can develop unconditionally selfless behaviour in large animal species, he points out that few animal species could afford to leave their infants in infancy for very long and thus be able to develop this means for training infants in selflessness.

Jeremy Griffith: The difficulty for most large animal species in developing this nurturing opportunity to train infants in selflessness is that they can't afford to leave their infants in infancy for very long and thus develop much training in selflessness. For most species their infants are too helpless and weak and thus vulnerable to predators and other dangers to be left in infancy for very long. A zebra foal for example has to be up on its feet and largely out of the vulnerable, totally dependent infant state within minutes if it is to survive.

It turns out I believe that only the primates were sufficiently pre-conditioned to develop nurturing to the level where selfless training could be fully developed. Because of their tree living lifestyle primates were already semi-upright from having to swing through branches. This is significant because being semi-upright meant their arms were relatively free and available to hold and look after a helpless infant. It was the freedom of arms to hold and carry infants that was crucial and why it was amongst primates that the ability to develop nurturing and thus training in altruistic, unconditionally selfless behaviour was able to be developed.

Incidentally this need for arms to be free from walking to enable nurturing of selflessness means that upright walking must have occurred early on in our primate past and indeed studies of recent fossil discoveries are showing that upright walking came early in our primate past, not late in it as had previously been postulated by many anthropologists.

The 'Golden Age'

Narrator: Griffith believes that it was this nurturing opportunity to develop training in selflessness that was taken up in our particular primate ancestor. The result, he says, is that our primate ancestor became instinctively orientated to behaving in an unconditionally selfless, altruistic and thus totally cooperative way. Most species can only develop a degree of cooperation because they have to be to some degree selfish; they have to compete with each other for food, shelter, space and a mate. If everyone is only looking out for themselves then there can be little cooperation and thus unity. Put simply, selfishness is divisive and disintegrative, while selflessness is unifying and integrative.

In summary Griffith maintains that our ape ancestor wasn't brutish and aggressive, as has often been claimed, but gentle, selfless, loving and cooperative. He believes the philosopher Jean-Jacques Rousseau's idea of the 'noble savage' was right. In Rousseau's 1755 book *The Social Contract* he wrote that **'nothing is more gentle than man in his primitive state'**.

Jeremy Griffith: What I'm suggesting is that it is nurturing that made us human, that gave us our instinctive orientation to behaving kindly and selflessly towards others; in fact, that gave us a gentle, loving instinctive self or 'soul' with its ideal-behaviour-demanding 'conscience'. I'm proposing that there truly is a biological base for our long recognised 'soul' and its 'voice' within us, namely our 'conscience'.

What happened is that this training in selflessness eventually became instinctive behaviour in our forebears. Once the nurtured training in selflessness was developed to the point where it was reoccurring generation after generation then gradually natural selection would make that behaviour instinctive. Genes will, as it were, follow and reinforce any behaviour and make it instinctive, as long as the behaviour continually occurs. For example, when our conscious mind takes us in a direction of its own choosing, such as in its development of high technology today which has led to a much speeded up and thus stressful world then gradually there will naturally be occurring adaptation of our species to stress. Individuals that happen to have a genetic make-up that copes with stress will survive better. Genes will always naturally follow and reinforce any development process—in this genes are not selective. The difficulty was in getting the development of unconditional selflessness to occur, for, once it was occurring, it would naturally become instinctive over time. The problem prior to this nurturing opportunity to develop cooperative individuals was that only selfish behaviour was occurring. There was no unconditional selflessness reoccurring to become instinctively reinforced.

So I maintain that Rousseau's idea of the 'noble savage', of an instinctive time in our past when we lived cooperatively, in a state that was free or, if you like 'innocent' of selfishness, competition and aggression, was right. All the great mythologies of the world in fact recognise a 'golden age', a time when humans lived in a harmonious, sharing, gentle, trouble-free, cooperative state. In Christian mythology for example there is The Garden of Eden state of innocence that humans are supposed to have lived in. Hesiod, the 8th century BC Greek poet, wrote in his poem *Theogony:* **'When gods alike and mortals rose to birth / A golden race the immortals formed on earth…Like gods they lived, with calm untroubled mind…Strangers to ill, their lives in feasts flowed by…Theirs was each good; the life-sustaining soil / Yielded its copious fruits, unbribed by toil / They with abundant goods 'midst quiet lands / All willing shared the gathering of their hands.'** And William Wordsworth wrote evocatively in his wonderful poem *Intimations of Immortality* that **'trailing clouds of glory do we come'**.

Narrator: The obvious question occurs, if we were once, in our primitive past, gentle and cooperative why did we depart from that 'innocent', 'pure', 'ideal' state and become the highly competitive, selfish and aggressive species we are today? What is the biological reason for our 'non-ideal' state? In religious terms what was the reason for 'the fall'? What is the origin of 'sin'? What caused us to be thrown out of The Garden of Eden? This question, and related questions like why is nurturing so difficult for humans today, will be addressed in Part 3 of this series, titled 'The Question of the Emergence of Consciousness, What Is It and How Did It

Emerge—and the Human Condition', and in Part 4, titled 'The Question of How to Reconcile and Ameliorate Our Estranged, Alienated Human Condition'.

Jeremy Griffith's account of the role of mate selection

Narrator: To complete this Part 2 of the series, 'The Question of the Existence of Moral Instincts in Humans', we have yet to hear Griffith's account of the part he sees mate selection as playing in this idea of nurturing giving humans an instinctive orientation to behaving cooperatively.

Jeremy Griffith: To explain the role of mate selection in this nurturing process we have to look more closely at what was going on. If we think about it, there is a problem with developing training in selflessness through nurturing. At a certain point selflessness begins to defeat itself. While nurturing of infants is strongly encouraged genetically because it ensures greater infant survival, the side effect of training infants to behave selflessly as adults is that the selflessly behaving and even self-sacrificing adults don't tend to reproduce their genes as much as selfishly behaving adults. The genes of exceptionally maternal mothers don't tend to endure because their offspring tend to be too selflessly behaved, too ready to put others before themselves. More aggressive and competitive individuals take advantage of their selflessness, in particular they take any mating opportunities for themselves. It's that old joke, 'the meek will inherit the earth if that's alright with you blokes', in other words 'You've got fat chance of that ever happening mate while we tough men are around.'

Clearly while substantial unconditional selflessness is able to be developed through nurturing due to the greater initial survival of infants who have been well cared for, there was a limit to how much it could be developed genetically. It was at this point of limitation that mate selection was able to come to the rescue. Our ape ancestor began to consciously support the development of selflessness. Our forebears began to recognise the importance of selflessness and as a result began to actively select for it. This could be done by consciously seeking out more nurtured, cooperative individuals to mate with. As Geoffrey Miller described it: **'sexual selection has the power to reach into these moral virtues…and to shape them in** [us]**.'**

The physical appearance of humans today

Narrator: In his three books, *Free: The End of The Human Condition* published in 1988, *Beyond The Human Condition* published in 1991 and *A Species In Denial* published in 2003, Griffith describes how this sexual selection that accompanied maternal training in selflessness resulted in the physical appearance of humans today.

Jeremy Griffith: It makes sense that the more selfless individuals would have been those who had experienced a long infancy, had exceptionally maternal and assertive mothers and

were also closer to their memory of infancy, that is younger. The older individuals became the more their infancy training in selflessness wore off and our ape ancestor began to recognise this—recognise that the younger an individual, the more selfless and cooperative he or she was likely to be. Our ancestors began to idolise, foster and select youthfulness because of its association with cooperativeness. The effect over many thousands of generations was to retard our physical development so that we became infant-like or neotenised in our appearance as adults. Neoteny is the retention of juvenile characteristics into adulthood. This explains how we came to regard the neotenous features of large eyes, dome forehead, snub nose and hairless skin as beautiful. The physical effect of this neotenising process was that we lost most of our body hair and became infant-looking compared with our adult ape ancestors.

These pictures that are reproduced in my first two books dramatically evidence this. Firstly these pictures, which originally appear in Stephen Jay Gould's 1981 book *The Mismeasure of Man,* [from p.49 *Free: The End of the Human Condition* and p.89 *Beyond The Human Condition*] show an infant common chimpanzee and below it an adult common chimpanzee and you can see very clearly how extraordinarily human-like the infant is. This next picture [from pp.90-92 *Free: The End of the Human Condition* and pp.56-57 *Beyond The Human Condition*] shows the skulls of the ancestors of humans from four million years ago to the present, and you can see very clearly the skull shape becoming more and more neotenous or infant-like. Finally this picture [from p.91 *Beyond The Human Condition*], which is reproduced from Adolph Schultz's 1969 book *The Life of Primates,* shows a common chimpanzee foetus at seven months of age. It shows body hair on the scalp, eye-brows, borders of the eyelids, lips and chin, exactly where we humans retain body hair today, the inference being that we have become neotenised right back to this very early stage of development.

Switch from patriarchy to matriarchy

Narrator: Since nurturing was the prime mover or main influence in the development of humans in Griffith's account, it means this early ape ancestor period would have been matriarchal or female-role dominated. But Griffith believes females also played a leading role in mate selection and in the overall containment management of competitive and aggressive behaviour.

Jeremy Griffith: Since historically primate males were preoccupied competing for mating opportunities females must have been the first to select for selflessness by favouring selfless rather than competitive and aggressive mates—and studies are showing this to be the case. In her study of baboons for example Shirley Strum records that **'Male newcomers also were generally the most dominant while long-term residents were the most subordinate, the most easily cowed. Yet in winning the receptive females and special foods, the subordinate, unaggressive veterans got more than their fair share, the newcomers next to nothing.'**

In fact in pretty much all areas of behaviour the females would have had to take control of the situation, assert their influence, make sure that aggression and

competitiveness—especially male aggression and competition for mating opportunities—didn't break out and regress the situation back to the old, 'each-for-himself', divisive, competitive, aggressive, 'you've-got-no-chance-mate' state.

Why should our particular ape ancestor have been the one that succeeded in developing unconditional selflessness?

Narrator: If what Griffith is saying is right about our origins the question arises, why haven't all primates taken the opportunity to develop nurturing to achieve the fully cooperative state?

Jeremy Griffith: While freedom of arms from walking was I suggest the key factor in developing nurturing there are other requirements. Ideal nursery conditions would be necessary. If the available food, shelter and space was limited, or other difficulties and threats such as from predators were excessive then we can expect that there would have occurred a strong inclination to revert back to more selfish and competitive behaviour. In fact I believe you can grade the various primate species in terms of how cooperative they are by assessing how ideal their environment is for nurturing. The less ideal the conditions for nurturing the less cooperative the species will be.

For example all the evidence is that the bonobos or pygmy chimpanzees or *Pan paniscus* as they are scientifically known, who live in the rainforest south of the Congo or Zaire River are by far the most cooperative primate species. In fact I consider that they are a species living on the very threshold of the metaphorical 'Garden of Eden', 'golden', utterly cooperative state that I believe we humans once lived in. Interestingly bonobos were only identified as a separate species in 1929.

In terms of our human origins, for our ape ancestor to have become totally cooperative, as I have asserted occurred, then necessarily it must have lived in ideal nursery conditions.

7. Evidence from bonobos (pygmy chimpanzees)

Narrator: To suggest what our evolutionary path has been Griffith makes an intriguing comparison between the common chimpanzees and bonobos–or pygmy chimpanzees as they are sometimes called.

Jeremy Griffith: Common chimpanzees are found in equatorial Africa north and east of the Congo or Zaire River. The social model of the common chimpanzee is patriarchal or male dominated. Although there is a focus on the young by common chimpanzee

mothers, the environment in which they live is often disturbed by males aggressively competing for mating opportunities with the females. Further, the drier and more sparse environment of upland open forests where many of them live, where food is in relatively short supply, puts the social bonds under great pressure. It also results in fierce inter-group confrontation. The common chimpanzees also regularly hunt and kill colobus monkeys as a source of protein.

This social model of common chimpanzees is very different to that of the bonobos living in their food-rich rainforest world south of the Congo or Zaire River. In the bonobos there has been a gender reversal in the social dynamic of the group. Bonobo females form alliances and dominate social groups—both male roles in common chimp society. Bonobos are matriarchal and the entire focus of the social group does seem to be on the maternal or female role of nurturing and caring for infants. The new born stay in a state of infancy and are totally dependent on their mother for a very long period of time. They are weaned at four (sometimes as late as six) and are carried for another year. Bonobo females have one offspring every five years. Also of particular importance is the bond between the mother and her son. The son will maintain his connection with his mother for life and will depend upon her for his social standing in the group. The son of the dominant female, who is the strong matriarch that maintains social order will rise in the ranks of the group. In this way there is a perpetuation of the most cooperative individuals in the group.

In their behaviour bonobos are much gentler than their common chimpanzee cousins. In fact physical violence almost never occurs in bonobos yet is common in common chimps. While infanticide is not uncommon amongst common chimps it appears to be non-existent amongst bonobos. In fact even orphan bonobos are taken care of by the group in bonobo society, something that doesn't happen in common chimp society. Social groups of bonobos are much more stable than social groups of common chimps. Indeed bonobos can come together in groups of up to 120 individuals. Anthropologist Barbara Fruth, who spent nine years studying bonobos in the wild, says that **'up to 100 bonobos at a time from several groups spend their night together and that that would not be possible with common chimpanzees because there would be brutal fighting between the rival groups.'**

(Article *Bonobos: The apes who make love, not war* by Paul Raffaele, from the Last Tribes on Earth.com website.)

Bonobos have more slender upper bodies than common chimpanzees, there is less size difference between the sexes, are more arboreal, have a greater tendency to walk upright and are known to share their food. While common chimps restrict their plant-food intake to mainly fruit, bonobos eat leaves and plant pith as well as fruit, a diet more like that of gorillas. While they have been known to capture and eat small game they are not known to systematically hunt down and eat large animals such as monkeys, as common chimps do.

In a moment we'll show you some footage of bonobos from documentaries about them but before showing that I'll just show you some still pictures. This is from a book, *Bonobo: The Forgotten Ape* by Frans de Waal and Frans Lanting, and it's a picture of a bonobo walking upright called Lana, it's powerfully evocative of

humans, and you can see Lana's well developed breasts. Amongst the primates incidentally, it's only bonobos that have well developed breasts like humans have.

These three photographs give you a snapshot, just a little window into how incredibly nurturing these apes are. That's one showing a mother bouncing a baby on her feet. Another bonobo mother playing ring-a-rosy with her baby and this is a photo reproduced in my book of a famous couple of bonobos, Matata and her adopted son Kanzi which all give you a feeling for just how nurturing they are as a species.

Narrator: Griffith has assembled extracts from various bonobo documentaries. These documentaries are all recent, made in the 10 years prior to the making of this documentary, which is being made in mid 2004, and the reason they are so recent is because little was known about this very rare and extremely threatened primate until recent times. Griffith maintains these documentary extracts bear out all that he says about the role of nurturing and mate selection.

Jeremy Griffith: The following are descriptions of bonobos from various documentaries. I'm certain none of those involved in the making of these documentaries were aware of this nurturing explanation for primate development, so the comments in the documentaries are completely impartial.

I believe what you will hear and see will dramatically evidence all that I have been saying about the nurturing, mate selection process. We are looking for evidence of the following:

That bonobos live in ideal nursery conditions, a warm climate, an environment which has ample food and, with the safety of the jungle trees for sleeping, travelling and shelter, that they have few predators. That females are extraordinarily maternal and look after their infants until they are five years old. That their societies are matriarchal or female-dominated, controlled and led. That male aggression has been tamed, in fact, unlike other great apes, there is little size difference between males and females. That physical violence almost never occurs.

What you will see is that even sex has been employed by bonobos as an appeasement tool for subsiding conflict and tension. You will see that bonobos are relatively placid, peaceful and egalitarian, exhibiting a remarkable sensitivity to others and live in large harmonious, stable groups. You will see that they share their food.

That they are largely vegetarian and don't hunt other animals like common chimpanzees do.

That bonobos often walk upright, in fact they are by far the most upright walking of the great apes. It has long been claimed that it was the move to savanna and the need to see over tall grass that led to upright walking, but the bonobos live in the jungle so it must be some other influence that is selecting for upright walking and I'm saying that influence was the need to develop nurturing.

You will see that in their physical features bonobos are exceptionally neotenous. If you look at these 3 photographs [from p.128-129 *Beyond The Human Condition*—also a version on p.51 *Free: The End of the Human Condition*], the first is of an adult common chimpanzee, the second is of a juvenile common chimpanzee and the third is of an adult bonobo. You can see how much the adult bonobo looks like the infant common chimpanzee. You will see that the neoteny of bonobos is acknowledged in these documentary extracts.

You will see that there is a lot of variance in features between individual bonobos indicating the species is rapidly changing, suggesting the bonobo species has hit upon some opportunity to rapidly develop and thus rapidly change.

You will see that bonobos are extremely intelligent, probably the most intelligent species on earth after humans. In the next, the third part of this series an explanation will be given for how nurturing liberated consciousness. That the bonobos have been able to develop such a high degree of nurturing and are also so intelligent will be evidence of this coming explanation for the origin of consciousness.

Footage extract 1 from "The New Chimpanzees" 1995, National Geographic.

Narrator: Chimpanzee's once thrived throughout the forests of equatorial Africa while Bonobos were restricted to the Congo Basin. Today both species survive in isolated fragments and are studied at a handful of sites. Gombe on the shore on Lake Tanganyika in Tanzania was where Jane Goodall began her study 35 years ago.

Fifi is the only chimp still alive from that time with six surviving offspring. Freud, her eldest is now the dominant male in her group while her younger son, Frodo, is the largest chimp at Gombe and working his way up the male hierarchy. Freud now leads the tightly bonded party of males that form the core of the group. Male chimps stay in the group of their birth and cooperate when there is common cause.

Every week or so the males form a para-military patrol to defend and test the borders of their territory. In single file and total silence they follow their leader in search of trespassing neighbours. Hair standing on end they listen for the voices of their foes.

Each community of male chimps jealously guard their territory and the females in residence. A stranger turns and flees. Though groups of males rarely engage in battle an individual caught by a border patrol is at serious risk. In the 1970's, Jane Goodall described a harrowing chain of events. Her study group split in two, and over the course of four years, the males of one group systematically hunted down and brutally killed every adult in the other group. Chilling evidence that warfare is a painful legacy from our primate forebears.

Gombe's steep slopes, the stage for all this high drama, tumble from open grassland to riverine forest, from the top of the great Rift to the blue basin of Tanganyika.

Footage extract 2 from "The New Chimpanzees" 1995, National Geographic.

Dr Craig Stanford: Frodo is the best of the Gombe hunters, he's 17 years old and yet he's killed 10% of the colobus population the last three years. It's really quite an incredible… *[Frodo walks past Dr Stanford]* animal and a great hunter. That was Frodo.

Narrator: All the hunters, including Frodo, will try to catch a monkey for himself. By joining forces the chimps hope to strand some monkeys in an isolated tree top with no route of escape except into the clutches of a chimp.

Dr Craig Stanford: Although we see elements of cooperation at Gombe what we think we are seeing mainly is individual selfish behaviour by male hunters done within a communal setting. It's a little bit like a baseball game in that baseball is a communal game in which individual players are doing their piece and in the end the end result is going to be success or failure. The more hunters there are the greater the odds of success and yet each individual hunter is performing selfishly.

Narrator: As the chimps climb up the colobus retreat to the highest branches too slender to bear a chimp's weight. The male Colobus stand their ground against chimps up to four times their size. They will even take the offensive, momentarily driving the chimps back. Holding his tail out of the chimp's reach this male buys precious time for the escape of the females and young. Excited by the cries of hunter and prey, females appear below. Eighty feet above the ground Frodo displays his daring technique, but this time he misses. With chimps climbing everywhere one monkey leaps into the arms of death. Even a rear attack by the defending colobus cannot save him.

Footage extract 3 from "The New Chimpanzees" 1995, National Geographic.

Narrator: Sometimes words won't suffice. Males perform displays, dramatic performances designed to establish their dominance and intimidate rivals. Fearless, Frodo sometime uses the human researchers to enhance his displays. Even Charlotte has fallen prey.

Dr Charlotte Uhlenbroek: He'll give me a whack. He'll just kind of add a little flourish by incorporating me but it's not directed at me. If he wants to hurt somebody he could have done it.

Narrator: Females and their young are dominated by this threat of force. But when the fruit crop is ample everyone feasts. A mother's care is the primary influence on a young chimp's life.

Footage extract 4 from "The New Chimpanzees" 1995, National Geographic.

Narrator: An infant chimp may seem secure within the bosom of his group but this is not always true. A male has stolen a baby chimp from its frantic mother who follows in desperate pursuit. In the Mahale Mountains south of Gombe, researchers have recorded this terrible event not once but seven times and are at a loss to explain it. The Alpha male is now in possession of the screaming infant. He actually beats back the mother with her own baby. Both mother and baby are members of this male's group and the infant was presumably sired by one of the group's members. Males have been known to kill babies sired by outsiders but this kidnapper could very well be the baby's father. The infant is killed by a bite to the face. Group members share in the macabre feast just as if it were a monkey. Infanticide and cannibalism.

Footage extract 1 from "Pygmy Chimpanzee: The Last Great Ape" 1997, BBC.

David Attenborough: In one isolated patch of the Central African Forest in a bend of the Zaire River lives one of the rarest and least known of all the continent's creatures. It's an ape, a chimpanzee. But this is no ordinary chimp. It's a bonobo. Bonobo's are found only here in the remote forests of Zaire. They are also called Pygmy Chimpanzees, though in fact they are just as tall as the common chimp but they are more slender and with flatter faces. They are a distinct species perhaps even closer to our own distant ancestors. This is our nearest living relative.

This group of bonobos includes a remarkable individual, a young male called Shijimi. His group has been studied for more than 20 years so we know that he is eight years old and that when he was three he lost his mother. He's an orphan. If Shijimi were a common chimp he would almost certainly be dead by now. In the cut and thrust of that society orphans seldom survive unless they are adopted by another female. But bonobo social life is very different, far more tolerant and relaxed. Friends can be male or female, young or old and groups are more closely bound together. This is a peaceful and harmonious society, one in which a motherless child has at least a chance. But when Shijimi lost his mother he lost more than a meal ticket.

In apes as in our kind, childhood is a long slow process of learning, getting to know the world around you and the rules of the society you live in. For a male bonobo a mother is especially vital. She is the key to his future status in the group. This young male is still at his mother's breast at six years old and he'll stay in her group for life. Without a mother Shijimi will have no one to fight his corner. Females are the dominant force in bonobo society.

So how has he survived and will he ever be more than just a social outcast. Remarkably he's solved his problem by befriending the group's full-grown males. There are three of them and Shijimi's gained their acceptance by grooming them. As well as helping to keep the skin clean and free of parasites, mutual grooming cements and sustains friendships. If Shijimi had a mother he wouldn't be making friends with full grown males until much later in his young life. He's had to grow up fast to fill the void left by his mother's death. Alliances with grown-up males are no substitute for a mother's tender loving care but if Shijimi's lost his childhood he does at least have friends and when the going gets tough, that can be vital.

Even in this peaceful society there are tensions. The males have a definite pecking order and the top male reacts vigorously to any challenge. Shijimi is bundled out of the way. If he gets caught up in this he could be hurt. Dragging branches around is a threat, a way of letting off steam. This may look violent but it's mostly bluff. Actual physical conflict is rare.

Bonobos have one means of defusing tension they use above all else—sex. Sexual contact brings the males dispute to a peaceful close. More even than in human societies, sex has become far more than just a means of reproduction. Everyone does it with everyone else. Males with males, females with females, adults with young. And they do it for all sorts of reasons. To greet, to appease, to reassure, to enhance relationships of all kinds. It's the social cement of bonobo society. The binding force that keeps the group together.

That togetherness is evident when bonobos set off to look for food. Unlike common chimps they usually travel as a large compact group and the leader's almost always a female. She decides when to move and where to go. Females have a great influence in bonobo society, another contrast with common chimps.

Footage extract 2 from "Pygmy Chimpanzee: The Last Great Ape" 1997, BBC.

David Attenborough: Fruit is high in energy so eating it gives the bonobos time for more social activities. But it doesn't contain much protein so they have to supplement their diet with other foods like leaves, stems or pith. By the time Shijimi catches up the others are already moving on. There's one fruit that's a particular favourite that makes bonobos go bananas. This is the cause of all the excitement, it's a fruit called Bolingo. At times like this the pecking order is very clear. The females have first choice. Even the top male has to wait his turn.

Footage extract 3 from "Pygmy Chimpanzee: The Last Great Ape" 1997, BBC.

David Attenborough: Common chimps are afraid of water. They'll go to any lengths to avoid getting their feet wet but for bonobos a stream holds no fears. They're looking for insect larvae, of dragon flies and the like. Though bonobos are more vegetarian than common chimps they do take animal food; caterpillars, earth worms, birds eggs, even small mammals.

Footage extract 5 from "The New Chimpanzees" 1995, National Geographic.

Narrator: It is in Africa's dark heart, the Congo Basin that we find the gentler tributary of our primate legacy. Takayoshi Kano has led the research here in Wamba, Zaire for the past 22 years. He comes here in search of the second, little known species of chimpanzee. Sugar cane is the sweet lure used to call down the elusive bonobo. Dr Kano and his associate Chie Hashimoto have discovered that bonobos are quite distinct from the chimps studied by Goodall and Boesch. At first glance they are different. Although they have been called pygmy chimps they're not smaller, just more slightly built. Hunted elsewhere in Zaire they're safe here but wary still. The sugar cane buffet proves irresistible. At ease on two legs as well as on four they simply rise up and walk so their hands are free to carry the cane. Eerily their

long shapely limbs and upright gait recall our own prehistoric forebears and their natural two legged gait is only the first surprise they have in store for us. An impressively stern female enters and snaps a young sapling. Once she picks herself up she does something entirely surprising for a female chimp, she displays, and the males give her sway. For this is the confident stride of the group's leader, its alpha female, whom Kano has named Halu.

Females play a very different role in bonobo society than they do among chimps. The reigns of power are shared equally between male and female held by a strongly bonded group of high ranking mothers and their adult sons. The son of a dominant female can take great liberties. High ranking females cooperate to dominate adult males and support their sons in social conflicts. Though tough with other adults bonobo mothers almost never discipline their babies, even when they steal the food right out of their mouths.

Footage extract 1 from "Congo: Footprints in the Forest" 2001, BBC.

Narrator: Bonobos are pygmy chimpanzees found only on the south side of the Congo River. Separated for two million years by this natural barrier, a smaller chimp species has evolved which is very like our own. These are new age chimps, caring, sharing apes. Bonobo males and females are of a similar size reflecting fairly equal roles in their society. They live together in closely knit clans and they take great care of each other. Psychologists say that mutual grooming like this may have led to a modern human equivalent: gossiping. Both reinforce social bonds, show that you care. Bonobos clean each other, we chat about our day to day lives. Both may be ultimately trivial but a good excuse for intimacy.

The young male bonobos stay with their mother right through to adulthood and this may help to explain why there is so little male aggression. The males have great respect for females altogether. These really are touchy, feely apes, very much at home with their feminine side. It's hardly surprising that feminists have taken bonobos to their hearts. Females dominate this culture, male aggression has been tamed.

Footage extract 2 from "Congo: Footprints in the Forest" 2001, BBC.

Narrator: One of the old assumptions about human origins was that we only learned to walk upright after we came down from the trees and took to the grasslands. But a closer look at our nearest relatives and especially bonobos suggests a simpler truth. Life in the trees is a largely bipedal affair already. Maybe this step in our evolution wasn't such a great leap after all.

Narration regarding "Ultimate Guide: Great Apes" 1996, Discovery Channel.

Narrator: For copyright reasons we are unable to include footage of bonobos from the 1996 documentary *"The Ultimate Guide: Great Apes"*. However, in it Dr Jo Myers Thompson discusses the differences between common chimpanzees and bonobos. Dr Thompson explains that the clearest differences can be found in the status of females.

She says a female chimpanzee's life is rugged. They have hardships just in daily activities. They are probably lower on the hierarchy, the social status, than males throughout the society and for instance males beat them up, chase them, bully them around and that doesn't happen in bonobo society. The female bonobos are not bullied and chased. Although there can be some male aggression, it's very minor. Female bonobos are never raped as far as we know, they have first choice at feeding sites. Their life is much more peaceful.

The narrator in this programme then goes on to say the physical difference between chimps and bonobos are quite telling. Bonobos have shorter, smaller faces and a more slender physique retaining many of the features seen in juvenile chimps. They're rather like chimps frozen inside adolescent bodies. Even their voices are high pitched and child-like. The male aggression that is so common in chimps is much reduced in bonobos and even relations between neighbouring groups are often peaceful.

Jo Thompson goes on to add, why do they need to be aggressive? They don't have to fight for food, they don't have to fight for sex, they don't have to fight for inter-relationships, they don't have to fight for space. Why would they be aggressive?

Footage extract from "Monkey in the Mirror" 1995, BBC.

Narrator: Unlike common chimps bonobos have never been seen to kill their own kind. This is truly an ape that makes love not war.

Footage extract 1 from "Kanzi: An Ape of Genius" 1993, NHK Productions

Narrator: Georgia State University's Language Research Center, Kanzi's home, is set among 50 wooded acres just 20 minutes from down town Atlanta. Researchers here study language development in human children by comparing it with language development in our close relatives, apes.

Kanzi working on word tests with Dr Rose Sevcik. *[Researcher saying words and Kanzi identifying them on the picture board]* Kanzi is distinguishing spoken words. First the researcher says a word. To answer Kanzi presses a picture symbol which triggers and electronic voice. These 256 symbols bear no visual resemblance to test words which include adjectives, verbs, even wishes and emotions. The board includes abstracts like good and bad. Some human adults working with Kanzi have taken a year to memorise these symbols and master the board. *[Kanzi doing more word tests with the picture board]*

Dr Rose Sevcik: Success! Good job. Good job. And then we'll get some more grapes, how does that sound! *[Kanzi and Dr Sevcik hooting with excitement]*

Narrator: Dr Sue Savage-Rumbaugh is one of several people who care for Kanzi at the Language Research Center. They often prepare their meals together.

Dr Sue Savage-Rumbaugh: Here's some cheese. You put that in your tummy this is going to be for our hot food. Okay I want you to go put the onions in your hot food. I got the onions in a bowl, lets go and put them in our hot food and we'll come back and turn the TV on. Get your onions right here and put them in your bowl. *[Kanzi puts onions in saucepan]* Look you spilled some of them.

Narrator: Savage-Rumbaugh has monitored Kanzi's language development since soon after his birth 13 years ago.

Dr Sue Savage-Rumbaugh: Let me get you a spoon to stir it with Kanzi. Stir it up please. *[Kanzi stirs the onions]* Will you wash this potato off for me? Could you wash the potato? With the water. You need to wash it in the water. That's very good. *[Kanzi turns the tap on and washes the potato under the tap]* Put some water in the pan for our noodles. *[Kanzi places pan in kitchen sink and turns on water]* More water, more water. Alright your noodles are going to go in here and you can have a few of them for your tummy. Kanzi could you turn the water off again please. *[Kanzi turns the water off]*

Footage extract 2 from "Kanzi: An Ape of Genius" 1993, NHK Productions

Narrator: Then there's Kanzi. Does he really understand what he hears? *[Dr Savage-Rumbaugh stands behind Kanzi so he can't see her and says 'Kanzi, see if you can find mushrooms' etc and Kanzi hands her the corresponding picture. Kanzi is successful in all tests]* Obviously Kanzi can choose correct pictures in response to Sue's voice, but how about other voices, unseen voices?

Dr Rose Sevcik: Kanzi come on. We're all set, we're ready. *[Kanzi takes a pair of headphones from Dr Sevcik and puts them on]*

Narrator: With Dr Rose Sevcik putting questions through a microphone Kanzi takes the test that Austin [a common chimp] failed. Will Kanzi still be able to distinguish words? *[Dr Sevcik says through the microphone in another room 'Kanzi, give Sue the picture of juice' etc and Kanzi hands Dr Savage-Rumbaugh the corresponding picture. Kanzi is successful in all tests]* Kanzi has picked up several hundred words, not through formal training but in daily life with Dr Savage-Rumbaugh and others.

1980 was the year of Kanzi's birth into the bonobo clan at the Language Research Center. He was less than a month old when this film was shot. Kanzi is the one being kissed by a nurturing female called Matata. In bonobo society infants are passed back and forth among adults. The whole community takes turns babysitting. But baby Kanzi was happiest with Matata. In the wild adults lavish affection on the young. Matata was born in the wild. Perhaps that is why she is so fond of baby Kanzi despite the fact that he is not her offspring. In the end Kanzi was raised by Matata.

Meanwhile researchers were trying to teach Matata words without much success. She had baby Kanzi with her all the time but they weren't teaching him. They thought him too little to learn. Then when Kanzi was about two and a half the unexpected happened. He would say 'apple' and 'chase', then he would go over and pick up an apple and look at the researcher with a smile on his face and start running around the room. So to everyone's surprise they found that Kanzi was learning language while they were trying to teach his mother and paying no attention to Kanzi. What was happening was that he had been learning by listening to what people said and observing what they did, much as a human child might. Kanzi amazed his researchers. Apes had been taught language before but he picked it up on his own.

Dr Sue Savage-Rumbaugh: Go get your ball.

Narrator: Kanzi understands long sentences as well as words. He's no good with lists but sentences present no problem. Sue dons a welder's mask to prevent him reading her expression.

Dr Sue Savage-Rumbaugh: I'm going to put on my mask and we're going to try a sentence for Kanzi okay. Can you hear me Kanzi? *[Kanzi squeals. Sue asks him to do different things like 'Put the key in the refrigerator', 'Could you take off Sue's shoe.' Kanzi is successful in all tests.]*

Narrator: What about objects he can't see?

Dr Sue Savage-Rumbaugh: Go get the ball that's outdoors *[Kanzi gets the ball.]*

Narrator: Sometimes Kanzi applies his own logic. Asked to put water on a carrot he threw it outdoors. Chided by Sue, he pointed to the rain, the carrot was wet.

A vocabulary of 800 words confers basic English skills. Kanzi has several hundred.

Footage extract 3 from "Kanzi: An Ape of Genius" 1993, NHK Productions

Narrator: Panbanisha, like Kanzi loves the woods. Over excitement can cause bad behaviour such as jumping on the dog *[Panbanisha jumps on the dog]*.

Dr Sue Savage-Rumbaugh: Oh Panbanisha! *[Sue makes Panbanisha look at the picture board while she presses the symbol for 'bad' over and over again]*

Narrator: Panbanisha knows she's being scolded. Is this the face of bonobo contrition? *[Panbanisha contemplates what has happened and then presses the symbol for 'good']*

Dr Sue Savage-Rumbaugh: I hope so. *[Panbanisha presses 'good' again and then 'milk']* You want some milk. I know you always want some milk when your planning to be good.

Narrator: As if to atone, Panbanisha goes to pat the dog she jumped on.

Footage extract 4 from "Kanzi: An Ape of Genius" 1993, NHK Productions

Narrator: On one occasion demands imposed by three months of filming caused human and bonobo tempers to flare. The producers asked Sue to put sentences to Tamuli to see if Kanzi would explain them to her, but Tamuli who does not understand language became frustrated. She began kicking Sue. Pound for pound apes are five times as strong as humans. Even Tamuli is stronger than Sue, let alone Kanzi. With Sue trying to convey that she had misbehaved, Tamuli sought Kanzi's help. To his credit Kanzi tried to arbitrate, keeping them apart. Tamuli is still unrepentant, and Sue?

Dr Sue Savage-Rumbaugh: *[To Tamuli]* I'm not going to have it!

Narrator: Kanzi steps between them, mediating with his bulk, but the storm was almost spent. Tamuli sat down and offered an apology. Sue, badly bruised was mollified. Peace was restored.

Footage extract 5 from "Kanzi: An Ape of Genius" 1993, NHK Productions

Narrator: Bonobos are highly intelligent and physically similar to human ancestors whose remains are found in this cradle of Mankind, the great Rift Valley of East Africa. In the mid 70's a three and a half million year old human skeleton was discovered in the Rift Valley. She was named Lucy for the Beatles song, 'Lucy in the sky with Diamonds' which happened to be on the radio at the time. The hominid Lucy and bonobos like Kanzi share a remarkable number of features. Their limb proportions and the way in which they walk are similar. Which returns us to Kanzi, the bonobo who shares features with our own human ancestors.

Footage extract 6 from "Kanzi: An Ape of Genius" 1993, NHK Productions

Narrator: Three and a half million year old Lucy shows that hominids walked erect even then. This posture held the key to human development in more ways than one. Lucy's structure and bonobo's, *Pan paniscus* to use Kanzi's scientific name, have been carefully compared at the University of California. Dr Adrienne Zihlman.

Dr Adrienne Zihlman: It's amazing how similar *Pan paniscus* is to Lucy who's one of the early hominids that lived in Africa about three and a half million years ago. If we look at their skeletons and compare them they're very similar in brain size, they're very

similar in stature, the length of the lower limbs and fairly similar in overall body proportions.

Narrator: Zaire, in Central Africa. A Japanese research team has been studying wild bonobos here since the mid 1970's. What bonobos make of humans we can't say. But humans learned a lot about bonobos. For example, in the wild they often walk upright. They walk like humans with straight backs and arms swinging at their sides, taking obstacles like logs in their stride.

Wild bonobos like the ancient hominid Lucy, can walk upright for long distances, even in rough terrain. A vertical posture leaves hands free to do more important things.

Footage extract 7 from "Kanzi: An Ape of Genius" 1993, NHK Productions

Narrator: A bonobo walks like this, essentially upright. Chimpanzees bend further forward making long distance walking difficult. In modern man the back is perfectly straight. A bonobo leans further forward than the ancient hominid Lucy but even so the bonobo resembles the hominid more closely than the chimpanzee does. If we compare their gait the bonobo is certainly the closest ape to Lucy. Walking upright left apes hands free to develop new skills.

Footage extract 8 from "Kanzi: An Ape of Genius" 1993, NHK Productions

Narrator: Kanzi, 'buried treasure' in Swahili. Not a month goes by without Kanzi revealing another facet of his character to those who know him best.

Kanzi, 'buried treasure', promises to teach us much much more about the journey of the human species from it's ancient bones and shadows to the historic land of apes.

Conclusion

Narrator: We have seen how Geoffrey Miller's belief that sexual selection for traits such as care and empathy resulted in **'runaway kindness'** intersects with the line of argument being put by Jeremy Griffith.

Jeremy Griffith: I am suggesting that in terms of our evolution, our human ancestors lived in a totally cooperative, integrated and loving state. This nurturing development of integration began some 12 million years ago and became fully developed in our primate ancestors some five million years ago before succumbing to the emergence of a very competitive, aggressive and selfish fully conscious ancestor some two million years ago. This period from 12 to two million years ago then is I'm suggesting what produced our sense of morality and our conscience, our innate sense of right and wrong. This period from 12 to two million years ago was our species' time in infancy and childhood where we lived in a metaphorical 'Garden of Eden' state of integrative cooperativeness.

Narrator: In support of this proposition that our earliest ancestors were cooperative rather than aggressive and competitive, renowned anthropologist Richard Leakey and writer Roger Lewin in their 1977 book *Origins*, say: **'We emphatically reject this conventional wisdom** [that war and violence are in our genes]**... the clues that do impinge on the basic elements of human nature argue much more persuasively that we are a cooperative rather than an aggressive animal.'**

Narrator: Given the current state of the world it is a breathtaking proposition to suggest that our deepest human nature is intrinsically one of 'goodness' and being cooperative. Likewise, it would be amazing to think that all these ideals we are confronted with every day of justice, democracy, equality and fairness all have their origins in the highly cooperative social model of our very early ancestors. Moreover, that concepts such as our 'soul', 'conscience' and 'morality' are references to our human instinctive, genetic orientation toward cooperativeness fashioned all those millions of years ago.

This work of Miller and Griffith and others like them with respect to ideas like mate selection and the role of nurturing in our past presents itself as a compelling and interesting alternative to explaining our moral goodness. It stands to seriously challenge the view of Robert Wright, E.O.Wilson, Richard Dawkins and others that our moral behaviour is nothing more than a subtle form of selfishness—that true or unconditional selflessness or altruism doesn't exist. This emerging view is that in fact it does exist.

Having said that, it also leaves us with some confronting philosophical problems, first and foremost being: if as a species we were once gentle, loving and cooperative then why did we depart from that ideal state and become the extremely competitive, selfish and aggressive species we are today. As has been mentioned, this issue is part of the subject matter of the final two parts to this four-part series.

All inquiries to
FHA Publishing and Communications Pty Ltd
GPO Box 5095, Sydney NSW 2001 Australia
Ph: +61 2 9486 3308 Fax: +61 2 9486 3409
Email: info@fhapublishing.com
Website: www.fhapublishing.com

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Narrated by Tim Macartney-Snape AM, OAM

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