

# God's First Fishermen

How a humble tribe of Beachwalkers  
conquers the world

Out of Africa *carpensis*

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To my children, Africa belongs to all of you.

## Paleoanthropology grows up

3<sup>rd</sup> February 1488. Bartholomew Diaz, the famous Portuguese mariner and explorer, jumps out of his small landing boat into the surf of Mossel Bay,<sup>1</sup> South Africa. The first European to round Africa's southern tip wades onto the stretch of white sand which we know today as Diaz Beach. The smell of shellfish, mussels and oysters, which are abundant on this coastline, fills the air. Through the shimmering heat of the distant sand dunes, a group of local Beachwalkers<sup>2</sup> shuffles towards the Portuguese landing party with an energy-saving, half-run, half-walk peculiar to this "newly-discovered" race. They are curious to meet the new people that the sea has just spewed up onto the beach.

Diaz, an intrepid explorer, has sailed halfway around the world. Expeditions by others over the previous ten years have failed to get this far. Diaz, as the first person to round the Cape of Good Hope, the sea route to India, is fully aware of the history of the moment. He is filled with the majesty of his achievement and looks down on these beach people with the arrogance reserved only for the colonial aspirant. Looking at these small brown people, their bodies covered in animal fat, entrails and ochre, like most Europeans of his time, he feels a sense of revulsion. If Diaz knew better, he would get down on his knees and worship his ancestors, the mothers of all modern humans!

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- 1 Mosselbaai is the correct Afrikaans word. This translates to Mussel Bay after the mollusks freely available on the rocks. I will use the bastardized terminology Mossel Bay. Originally called Bahia dos Vaqueiros by the Portuguese.
  - 2 The Dutch word *strandlopers* means "beachwalkers". Racial nomenclature is a sensitive issue in anthropology and particularly so in South African anthropology. These people have been called Hottentots, Bushmen, Khoisan, Bywoners, Coloreds. They called themselves "Bushies", but for now I will call them the Beachwalkers.

Get ready to rearrange the way you think about yourself and your ancestry. Over the next 300 pages I will show you how these Beachwalkers emerge less than 200 000 years ago from the southern tip of Africa to overwhelm all before them. The earth has been here for 4.5 billion years; we have not. Human history is a heartbeat in the evolution of life.

This story is a radical review of how we think of ourselves, drawn from the work of thousands of scientists contributing from multiple disciplines. Instead of having a diverse ancient and remote origin, modern humans are all part of a radical revolution that has a comparatively recent beginning. It is the Big Bang of human evolution and we are still in it today. This is the remarkable story of how these humble Beachwalkers changed the course of the Earth's history. It is also the story of how our Western intellectual arrogance has suppressed their story.

This is an African story. A story of lost civilizations, on a scale much older and grander than you have been exposed to before. The Third Reich fell in 12 years, the Roman Empire lasted barely 1000 years, the Egyptians lasted less than 5000 years. Our story concerns a 150 000-year-old civilization that is still with us today! It is ironic that the oldest story of our history is the one that is unraveled last. This story is not only hidden beneath the jungles and ancient stones of Africa, but is also obscured by our own religious dogma and racial myopia. This is not the story you want to hear and you will indeed need to unblock your ethnocentric preconceptions in order to believe the true story of our human origins.<sup>3</sup> For what reason are we here in the first place?

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<sup>3</sup> Ethnocentricity is our weakness to view the world's affairs from the bounds of our own culture. For example, we always think our own race should win the Miss World competition.

This is the search for the missing link and the search for the missing female G-spot. It deals with the central role of women in our lives. Hot blooded alpha males bash about on center stage, but the smell of fish dominates this story.

Five billion of you have never been to Africa. For you it is a dark and forbidding continent. However, no matter where you live, be aware that you are of African origin. Africa is where you come from and Mossel Bay is your unlikely home town. You may find some of the stories and events in this book foreign to you. Have no fear, some of us have already made the pilgrimage back to Africa. Strange, yes, but far from threatening. The spiritual gateway to our common ancestors is open, and Africa's children are welcome home.

Pilgrim, most books on paleoanthropology don't take into account that many people in the world believe in creation. According to a recent survey, 48% of Americans believe that man was created more or less as he is, less than 10 000 years ago.<sup>4</sup> If you are a modern Jew, Muslim or Christian we can still get through these pages together. Many books on the subject of human origins are completely dismissive of religious views, yet when you read these pages you will see that some of the ideas that are presented by professional scientists are themselves far-fetched. Some of you may find some of my conclusions offensive, but you will find them rational and backed by evidence. If you are versed in the philosophy of religious freedom, then you should have no problem with this process.

Most thinking people are concerned about human origins. There are as many theories as there are cultures. These theories can be very different and we will often have differences in opinion. On these pages we solve these differences with scientific debate. Here we place little value on human testimony or faith. Unfortunately there is no middle ground for truth; only one of us can be right.

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4 Richard Dawkins, *The God Delusion*.

You should also not be surprised that I view your most holy sacraments with little more regard than you do my lack of reverence. If you find my conclusions offensive, you are welcome to blog on [www.philipcopeman.com](http://www.philipcopeman.com) and give me your views. I am always open to change and willing to revise my position if you have a superior interpretation of the evidence presented.

The mechanism of evolutionary theory is a contentious and complex process. Fortunately, we can defer this debate. Theologians and scientists tend to have very different approaches to this methodology. It is not necessary in these pages to take on the debate of the fundamental processes underlying evolution. We are interested here only in the evidence of modern human origins. If you have religious convictions, but are not fundamentalist, then you most likely fall into the group that rationalizes scientific and religious contradictions by stating, up front, that evolution is acceptable and that the areas covered by science and religion do not intersect. Alternatively you could fall into the large group that thinks that the Bible is subject to interpretation, although we are still living in a world driven by Intelligent Design.<sup>5</sup>

I am a scientific realist and follow the rules developed by the scientific method. At any time I am willing to change my atheist model given scientific proof, but I am not an agnostic, waiting for delivery of someone else's theology. If giving an atheist a fair hearing is offensive to you, it is best that you stop reading right now. You would be far better off to light a candle, bow to the east, slaughter a cow or a sixteen-year-old virgin and pray for my forgiveness. No amount of logic or revision of the facts is going to cover the gulf that exists between us.

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<sup>5</sup> Intelligent Design is the great modern Christian movement, sweeping American science and placing God in the driver's seat, right at the center of the evolutionary engine room.

If you are able to recognize that my philosophy, scientific realism, is rooted in humanism and goodwill and is open and capable of dealing and coexisting with different views, then read on.

Scientific thinking will lead to questions of theology. For most religious people, dealing with atheist philosophy is anathema. Similarly, for non-religious people theology is a strange mistress. We can still learn about each other and can tolerate the good parts of each others' cultures. There are precedents. Vaughan Williams, a known atheist, wrote large parts of the Anglican hymn book. I myself find religious choral music wonderful and appreciate it without religious conviction. *Belief*, for scientists, has a very different meaning than for theologians. We will take a position and turn 180 degrees the moment a viable alternative is presented. So everything you read here can be taken merely as hypothesis and everything is subject to revision and open to reversal.

My personal take on Intelligent Design is that it is a place where atheists like myself, who have doubted the Word of God, are sent when they die. It is for all those that did not heed the word of John 16, "No one comes into the Kingdom but through me." The day-to-day workings of evolutionary design are dirty work, but someone has to do it. The punishment for atheists is an eternity of tinkering away in the Intelligent Design workshops keeping the daily grind of evolution going. Intelligent Design must be an enormous place and the sprawling campus would dwarf the organizations that we are used to on earth. Intelligent Design will need an enormous network of computers to track all that paperwork. The Old Man is going to need thousands of us working on this, for in every corner of life on this planet alone, millions of species are daily committing hundreds of billions of DNA decisions to determine where life is going. The office politics at Intelligent Design must be a nightmare. A battle for supremacy is raging under every leaf and billions of sperm race daily

to the jackpot hoping to be the next big thing. Intelligent Design gives evolution a purpose, a direction. I call it the Vector of Evolution. It takes an army of professionals to field the billions of incoming calls, asking for a ruling on the next mating decision.

Creationist proponents of Intelligent Design should warm to the Out of Africa *carpensis* theory.<sup>6</sup> As opposed to the multiregionalists, who propose a long evolution through extended natural selection, *carpensis* advocates a latter-day, rapid development of man. In my opinion, *carpensis* represents the creationists' best shot at a single-day creation for man. Like Stalin and Hitler in 1941,<sup>7</sup> for the short winter of these pages we can hold an unholy truce on the nature of the evolutionary process. We can hold off on the mass killing until we have finished this story. Human origins are not really affected either way by whether you think God put them there or they got there by themselves. However, Pilgrim, if it is God's work that you are looking for, prepare yourself for a spiritual rollercoaster ride, for He truly works in strange ways indeed. This may not be quite how you have interpreted your own ancestry to date.

Religious fundamentalism is gripping the world today. We are in an escalating world war that is fueled by religious prejudice. Both sides are convinced of their own God-given right to victory for their side. It is a classic misinterpretation of who we are and how small our differences are. This is a not a fight to extinction, this is a difference within a family. A small step, a gesture to tolerate the intolerable, that someone else might have another point of view, is all that is required to stop this conflict.

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6 Out of Africa 1 was the hypothesis that *Homo erectus* left Africa approximately 2 million years ago. Out of Africa 2 is the hypothesis that modern man, *Homo sapiens*, left Africa 60 000 years ago and colonized the world. OOA *carpensis* is my name for an African start to *sapiens* in the Cape.

7 The German–Russian treaty of 1941, which carved up Poland and the Baltic Countries, was known as an Unholy Alliance and was spectacularly broken by the Germans in June of the same year.

It is ironic that fundamentalists, the very people that can benefit most from reading this book, will probably put it on their banned list. Not all fundamentalists want to fly airplanes into buildings or invade foreign countries; most fundamentalists I have met are kind and unselfish people. You meet them every day out shopping and at parent school meetings. With fundamentalists it is great fun to have a cup of tea, solve computer problems or play football, but it starts to break down if you discuss politics, sex or religion. Don't take them on a pub crawl or with you to score dope, and don't introduce them to your parents or children. They are a real drag at a party and usually leave before the orgy starts. It is best we keep human origins out of the relationship.

If you are a true fundamentalist, I am surprised you have read this far. Obviously you have not asked your rabbi, priest or imam for permission to read this. What we will discuss here is going to rock you to the core of your beliefs. To stay with me on these pages you are going to have to do what most fundamentalists really struggle to do: give atheists a fair chance to express themselves. If you do want to get this story and you are worried about being turned into a pillar of salt, think of this book as science fiction, like you would watch *Terminator* or *Die Hard*. That way you can get through the story without having to worry about the compromising issues.

Through these pages I keep visiting the topic of racial prejudice. If you are sensitive about who you are and what people call you, some of you may take offense here. The fault is probably with you. South Africa, where much of this story takes place, is a country with a strong mix of different races. We are confronted daily with people of different races and cultures, and have had successive governments determined to define us as separate and to keep us separate. The tone of this book is that race is largely a cultural perception. There is very little genetic or morphological difference between races.

Throughout this book, keep foremost in your mind the difference between racialism, where we recognize small differences and use this positively and racism, where we close off options and use this negatively.

The topic of human origins has always been looked upon from the prejudiced eye of the beholder. No other scientific observation carries the same emotional baggage. It is the Heisenberg uncertainty principle of biology.<sup>8</sup> Who we are impacts our core self-image and our view of ourselves perverts truth on the altar of our own self-esteem. If you are a student of human origins, you will probably have a completely different view of other races from that of the average Joe.

*According to the Kinsey report,  
Every average man is not,  
When the thermometer goes right up,  
It's too darn hot.<sup>9</sup>*

The differences that are emphasized between us daily in all forms of media play to a world ignorant of the real story of humanity and completely miss how really close, rather than different, we are. Once we know who we are, it becomes a lot easier to accept who others are. From there, it becomes easier to build beautiful things.

South Africa is a cesspool of tribal racism and religious fundamentalism. Right here in the Cradle of Humankind, you will find that the majority of people believe that we began in a European or Middle Eastern Garden of Eden and our first mistake was letting the blond bite the apple. Most South Africans will simply kill a snake without thinking, the moment they see it. They certainly believe a snake to be an embodiment of evil.

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<sup>8</sup> Heisenberg's uncertainty principle is a theorem in quantum physics that says that nothing is truly measurable.

<sup>9</sup> With apologies to Cole Porter.

Most South Africans would not even read this book and would denounce it as demonic. That's the good news. The bad news is that those who do read the book are not going to like the conclusions reached here. However, these are not my personal ideas, they are simply the reduction of the reality that lies revealed in front of us. God's work, to those who must have a Creator in the story. Some of you may not like this. It may run contrary to the prejudices which are now second nature to you and you may wish it were otherwise, but you will struggle to fault the logic or refute the evidence. All of this I will recant at the first suggestion of being stoned to death or burned at the stake. Please no *fatwas*. Don't shoot me, I am just the messenger.

South Africans have a history more closely intertwined with human origins and overt racism than any other country on the planet. Genetically we are a mixed race, but even today we package ourselves as a rainbow nation, separate races living in harmony, having put 350 years of racial conflict behind us – the miracle of peaceful transformation. However it is the rare exception to find a South African who thinks of themselves first as a South African and then as a citizen of the world. We see ourselves first as a member of our tribe. How we live is how our tribe fits into the world.

The ruling party of our government is the ANC, the African National Congress. This is a party that endorses racial classification, albeit in the name of affirmative action and racial equity, and governs with a constitution which defines a citizen first and foremost by racial group. Racial classification is perpetuated in an act of parliament. That this is still so in the year 2008, particularly given our late 20<sup>th</sup> century institutionalized racial history, is perplexing.

However this is not a book about politics or sociology, but rather about why the true story of human origins has been suppressed for so long. This background on modern thought serves only to explain why a story about a tribe of fishermen who came to dominate the world

would not fit comfortably into the white European structure of superiority, the New World Fundamentalist Order or the emerging Black African Nationalism. What should be so obvious is so obnoxious to us.

In South Africa, our black religious groups are dominated by an African franchise of the mainstream Christian churches, a bush-drumming Catholicism. African whites are usually reborn evangelicals or apostolic Calvinists. Islam is the fastest growing religion and strongest among the Cape Coloreds. You can add as much crushed ice as you like, but this cocktail mixture is not easily shaken or stirred into a secular society that can look at human origins subjectively, even one with beginnings right here in our own backyard. Anthropologists, along with atheists, Jews and homosexuals, are looked upon with suspicion and a sense of pity, and at best a patronizing tolerance.

The idea that we are all very recent descendants of a small group of Hottentot *Strandlopers*,<sup>10</sup> who have rapidly colonized the world, is a heresy that does not sit easily with any of these power groups and does not make for a story that promotes their ideals of racial separation and tribal promotion. But science, like God, is not interested in petty racial squabbles. Science seeks a truth irrespective of political correctness. This lack of political correctness is primarily why the story of the Beachwalkers has not been told to the world. Human emergence was neither black nor white, it was cream and toffee.

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<sup>10</sup> Hottentot Beachwalkers. Historically Afrikaners have looked on the Coloreds as a second rate race. Not as bad as the blacks, only half as bad.

I am a member of the white English Settler tribe.<sup>11</sup> On my paternal side is a line of Anglican priests and on my maternal side converted German Jews. Our ancestors come back to Africa in the mid-1800s and settle in the Eastern Cape. Besides small forays into colonial control and civil wars with the Xhosas, Zulus and Afrikaners, Settlers are secondary players in the political battle for control of South Africa, which is a two-way fight between the Afrikaners and the Xhosas. More about them later. My ancestors settle first as cattle farmers in the Eastern Cape, but very soon give this up for the comforts of commercial careers in the towns and cities of the colony. My family patriarch, Philip Walker Copeman, performs the first christening at Alexandria in the Suurveld area in 1851. Settlers have come to spread the Word of God to the heathen masses and to give our interpretation of the world and human origins.

With the opening of the diamond and gold mines in the Northern Cape and Transvaal, the Settlers move north. We live as priests, shopkeepers, accountants, academics and golfers. In the latter part of the 19<sup>th</sup> century, Cecil Rhodes, a British Settler, becomes the richest man in the world from his dealings in diamonds and gold. Settlers dominate the field of science and technology in South Africa, and our relative freedom from religious dogma enables us to become leaders in the fields of geology, evolutionary biology, genetics, applied statistics, archeology and human prehistory. We build the premier university in South Africa, the University of the Witwatersrand. Many of the central players in this story come from Wits. Anthropology is the study on modern humans. paleoanthropology is the study of early human beginnings, which is the two-hour traffic of our stage.<sup>12</sup>

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11 The colonial English are a late arrival in Africa, coming from 1795 onwards. They bring with them a colonial savagery not seen before. The monuments and wealth of London and England are built with materials stolen from Africa and India.

12 With apologies to William Shakespeare.

At school in the 1960s and 1970s, we are fed an oily gruel called Christian National Education. This is the apartheid government's broth of Dutch colonial history, white civil wars and a smattering of European history. Black Africans are spectators to South African history. We are taught of the undoubted superiority of the white race. Biology is a dry description of body parts and plant cells with lots of Latin names. Religious education is the backbone of the teaching. We live in a world created by the Almighty, where Adam and Eve emerged from the Garden of Eden, and Ham, their poor cousin, is the water-drawer and the ancestor of all black people. God is on our side and we give thanks to him every year for helping us defeat the Zulus at Blood River in December 1836. We are fortunate indeed to be members of God's ruling race. We sing out every morning:

*Oh God our help in ages past,  
Our hope for years to come.  
Our shelter from the stormy blast,  
And our eternal home.*

If you grow up in the south of the USA or in East Germany in the late 20<sup>th</sup> century, you live a childhood similar to mine. American colonial history has many similarities to South Africa. East Germany in the late 20<sup>th</sup> century has a similar history to our experience. I have spent much time in these two countries and find the people and circumstances similar. These are societies with real racial issues to solve and people living in the making of history. Loss of life is actually relatively small and victory is attained with little bloodshed. This is not out of disrespect to those who die in these countries to set us free, but out of respect for those who negotiate us through to peace with minimal force. Without leadership, South Africa could easily be Yugoslavia, Cambodia or Rwanda.

In Intelligent Design terms, the Old Man deals me a picture card. No matter how hard we make it out to be, it really is not that difficult being white in apartheid South Africa or in today's Africa. We lead a life of privilege. It is true of white South Africans that they would rather die in their beds than make them.<sup>13</sup>

We grow up under a totalitarian regime, but we also grow up in the golden age of sex, after the collapse of prudishness and before college students invent Herpes B simplex or pretty girls start passing on HIV. We grow up in the Cradle of Humankind during a period of relative world peace. We do go to war against the East Germans in Angola, but it is hardly Stalingrad. The closest I get to danger is riding a motorcycle to camp each day. The civil rights movement of the American South is a great inspiration to us, as is East Germany. I am proud to be a part of the movement that stamps out the burning crosses and pushes over the wall in South Africa and even more excited about what we find underneath – fossils of early man.

As a boy I believe in Adam and Father Christmas. In dreams I see Jesus at the foot of my bed. At school, the subject of evolution is taboo. Anthropology is studied by the leftists, the *kaffirboetjies*<sup>14</sup> and traitors to our race. Christian National Education is vehemently creationist. Anthropology is part of the “total onslaught”<sup>15</sup> against apartheid South Africa. This is a world before The Internet, before *Newsweek* publishes the monumental African Eve cover story in 1988. We share information in dour papers and cheaply printed journals, which we read furtively at home. I am isolated from my friends and my family. It is not as bad as Billy Elliot learning ballet, but it is a

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13 Afrikaners point out that it is only Settlers that can't make their own beds.

14 “Brothers of the blacks”, the derogatory name given by Afrikaners to those who did not accept white superiority and harbored feelings of kinship with black people.

15 This was the term for the activities of all those outsiders who questioned our right to white rule.

solitary, introverted journey. The more I read, the more I find myself slowly but inexorably turning to the dark side.

I first become interested in paleoanthropology in the sixties as a prep school scholar. Christopher Copeman, my father, works for the SABC, the national broadcaster. He produces a series of programs on the heroes of the field, Raymond Dart and Robert Broom, entitled *The Dawn of Man*. He brings home the program manuscript and my interest in paleoanthropology begins. Other boys put up posters of soccer stars and guitar players in their rooms. I have a poster of the human tree.

In the early seventies paleoanthropology is a confused field with horrendous terminology like *Australopithecus africanus*<sup>16</sup> and *Pithecanthropus erectus*. We defend Darwin, but are grappling with the confused images of our origins. We are always apologizing to the religious right. Every doubt that is ever expressed about the chain of human development will be jumped on by the fundamentalists claiming that there is no firm link from ape to man. And it is true – paleoanthropology cannot provide it. The obsession is finding the “missing link” and for a schoolboy in Johannesburg, knowing that the site of “Mrs Ples” is a short distance from my home puts me at the center of the search for human origins. For 30 years, I devour every new book on the subject. In the army, the rest of the platoon find it strange that I don’t believe in God and that I think we come from monkeys. On Sundays they go to church and I lie alone in the bungalow reading Louis Leakey.

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16 If you are not used to reading books on biology, each species has a two-barreled Latin name, the first being its genus and the second its species. There are a number of ways of representing this and I fluctuate between them. So *Australopithecus africanus*, *A. africanus* or my casual *africanus* are the same thing, a short bipedal ape ancestral to man that lived in Africa between 4 million and 2.4 million years ago. I also refer to some species by their English names, e.g. humans or Neanderthals.

For most of the last 50 years, the East Africans have dominated the search for human origins. Every few years a new specimen is found and the ancestral tree is rearranged. This brings up exotic names like *Zynjanthropus*, *Australopithecus boisei*, *Homo heidelbergensis* and *Homo ergaster*. Once we have gotten over the religious objection that we could not possibly have descended from monkeys, the debate becomes about the shape of the tree of human evolution, rather than about the existence of a tree at all.

The eighties see the debate come down to a battle between the “lumpers” and the “splitters”. In the most extreme form, lumping asks if there is even a difference between chimps and man.<sup>17</sup> We share 98% of our genes with chimps, and under a microscope it is tough to tell us apart. The splitters are the diggers, working in the field. Splitters need new species and for these species to keep flowing and to keep getting earlier. This is how they motivate their research grants. In the extreme form of splitting, its proponents create new species almost every time there is a new find. The lumpers are the guys in suits working in air-conditioned university offices, looking at computers. Lumpers’ field trips are to London, Las Vegas and Hanover, and our idea of roughing it is slow room-service. Lumpers vs splitters is a classic case of the suits vs the dungarees, and as always happens, the suits win. After all is said and done, there is a lot more said than done. Once religious dogma is peeled off, the human tree, from the split with the chimps six million years ago to the “Out of Africa 2” exodus 60 000 years ago, is finally revealed as a straightforward series of events.<sup>18</sup>

In the nineties paleoanthropology almost splits into two sciences. The bone collectors rush around South and East Africa, developing a culture of their own in which science seems to play a minor role to the more important game of politics and finance.

<sup>17</sup> Not quite, *Pan troglodyte* is definitely a separate species.

<sup>18</sup> It is agreed today that chimps and man share a common ancestor around six million years ago that is yet to be discovered.

Donning Indiana Jones style bush hats, they chase around the ancient sediments and look for the early link between man and chimp. The other branch is the geneticists who take the search for modern man into laboratories. They have their own turf wars about who owns the genome. By analyzing how human diversity has been revealed, we can infer the processes that led us here.

At this stage I should reveal myself as a super-lumper. Lumping is more of a necessity than a philosophy, brought on by the fact that the Latin names for each split are confusing. I don't collect hominids myself and have little time for those that would immortalize themselves by adding a new branch named after them to the phylogenetic tree. The line of human descent is simple: Common Ancestor, *Australopithecus africanus*, *Homo habilis*, *Homo erectus*, *Homo sapiens*.<sup>19</sup> Simplified, we get out of the trees, walk on two legs, build tools and colonize the world, first by organized hunting, then by farming, and finally by the division of industrialized labor. For much of the last five million years there is more than one hominid present at any time. In the end only one species makes it through, *Homo sapiens*, and we likely killed our nearest cousins in a global fratricide. To the lumper, the side experiments of evolution and arguments about comparative anatomy seem trivial.

Where the boundaries of a species and group are placed is called taxonomy and was started by Linnaeus, a French biologist. In humans, taxonomy is emotive and subjective. Primates formed around 55 million years ago as part of the explosive adaptive radiation of mammals into the gap left by the dying out of the dinosaurs 65 million years ago. Primates have separated thumbs that can be opposed to the other four fingers, clavicles that allow lateral shoulder movement and a centrally placed hole in the base of the skull, the foramen magnum. This is how we keep our heads up straight.

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<sup>19</sup> This would be bitterly disputed by those to whom these names are important.

Apes share a common ancestor with monkeys and are part of the Anthropoid branch, Prosimians include lemurs and bushbabies. Apes have migrated southwards from Europe and/or Asia into Africa to avoid the cold, eating bananas, poking the harem and basically going nowhere for 15 million years.<sup>20</sup> In the great Intelligent Design plan, they have been penciled in for a climate change extinction and destined to be a footnote in the Great Library of Evolution. While the Old Man is out for lunch on the sixth day, someone in the mailroom gets the packages confused, messes up on the paperwork and the monkeys' fortune swings the other way. God himself proves the old adage, if you want something done properly do it yourself.

Chimpanzees, *Pan troglodyte* and the hominid line share a common ancestor who swings about in trees in East Africa six million years ago. In a cooler drier period, trees become sparse and some climb down and walk over the savannah from tree to tree. The long grass makes it a whole lot safer to walk on two legs and get a better lookout for predators. The walkers go on to found an evolutionary dynasty, the swingers stay in the trees, evolve into chimps and are forever confined by the extent of the forest and zoo cages. Every now and then they see a delicious piece of fruit propped up in the bush, step on a shiny circle and get caught in a wire snare.

Their 300 cc brain can never figure a way out. After a while a hairless ape arrives and helps to free them. If they are lucky they end up in a zoo. More likely they become lunch in a bush meat market.

Around four million years ago, *Australopithecus* first begins walking, possibly somewhere in modern Ethiopia, walks all the way through East Africa and down to South Africa. The exact location of the start of *Australopithecus* is still a source of great competition between East African paleoanthropologists, who call each other really

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<sup>20</sup> The jury is still out on this one too. It is possible that even apes developed prior to the Miocene in Africa.

nasty names, block each others' work permits and steal each others' bones. From the rich pickings of South Africa's human origin sites, this looks like impoverished natives squabbling below the poverty line over reducing budgets and hominid rations in the desert. Any moment now these scientists will be hacking at each other with *pangas*.<sup>21</sup>

With a bipedal lifestyle, *Australopithecus* has free hands, which he begins to use; he adapts his separated thumb less for hanging in trees and more for working in the kitchen and playing a now defunct style of rockabilly guitar. Of a few evolutionary experiments, the most notable is *Australopithecus robustus*, 2.6 million years ago, with a thick ridge on his head and big vegetarian molars.<sup>22</sup> The dominant player is the more gracile version, *Australopithecus africanus*, who evolves into *Homo habilis* about 2.3 million years ago and increases the use of tools with his free hands. *Homo habilis* evolves into *Homo erectus*, who is very successful working as a hunter scavenger. *Homo erectus* evolves the ability to adapt his body to varied climates and over the next 1.8 million years *H. erectus* spreads from Africa right through Asia and into Indonesia. Splitters love to debate each other about the details of this transition. There may still be a few revelations here, but they are unlikely to affect our final destination. If this was any other species, the blanks would have been filled in and accepted by everyone. With the exceptions of a few scuffles about the shape of toes and teeth, this period of the science of paleoanthropology is pretty much done and dusted.<sup>23</sup>

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21 The genocidal tool favored by technologically challenged East and Southern Africans. A cross between a pirate's cutlass and a garden scythe, best used in a hacking action.

22 First discovered in South Africa and credited to the East Africans.

23 Some East African paleoanthropologists, supporters of Lucy, *Australopithecus afarensis*, would launch a thousand ships to bury the conclusions of this paragraph.

The jury is still out on the cause of the event and creationist proponents of Intelligent Design should hold on to Out of Africa 2, for it is here, 200 000 years ago, that *Homo erectus* grows his brain dramatically and becomes *Homo sapiens*, thinking man. In creationist terms, man walks out in God's image, created in an evolutionary instant. This process of growth in brain size and thinking ability is called *encephalisation*. Human brain size under the management of *H. erectus* remains almost static for 1.8 million years. In a separate exercise, Neanderthals develop large brains in Europe. In a dramatic burst, African brains grow from 900 cc (*erectus*) to 1400 cc (*sapiens*). Around 100 000 years ago *sapiens* challenges for the world title and *H. erectus* is knocked out, with the Neanderthals going down a few rounds later.

To see who won the fight, check the scorecard. *Sapiens* 6 billion – Other Hominids 0.<sup>24</sup> The entire balance of other primates could fit into the Superdome, with lemurs getting the corporate boxes and free drinks.

When the Americans discover human origins in the eighties and nineties, things begin to move quickly. Paleoanthropology moves from the fringe science of a few bone collectors to the massive multi-disciplinary industry that it is today. Dating techniques, DNA analysis and computer models have simplified a vague landscape into a clear picture of our origins. Competing theories can be tested from independent starting points. Modern man spreads quickly from Africa to Asia 60 000 years ago, getting to Australia 50 000 years ago, Europe 40 000 years ago, North America 13 000 years ago and South America 10 000 years ago.

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24 There has been a recent move to refer to our sub group as “homonins”, to reflect the close relationship between chimps and Man. I use the old-fashioned “hominid” to refer to species close to the human line.

Christianity develops, is reformed and is exported to North America. Christians who die rich leave their money to a plethora of foundations dedicated to disproving the evolutionary story. American colonial history is well documented and propagated in the mass media. It is remarkably similar to South African history.

A sparse indigenous people (Native Americans / Khoisan) is overwhelmed by two groups of invaders (Africans and Europeans). The invaders battle each other for control of the country and the original people are sidelined and murdered. Colonial history tells of a succession of wars against the local people. These are little more than slaughters, based on trumped-up charges, with the underlying aim being the occupation of land. Both countries fight Britain for independence and then have a civil war for local control. Waves of European immigrants continue to dominate right up to the present and bring with them technical innovation, gold rushes and European religion. Both groups, right up to the present, see themselves as separate races and the irony of 300 years of assimilation is lost on both sides.<sup>25</sup>

Sprawling over seven continents, *sapiens* is undoubtedly one of the most successful expansions in the evolution of life. There have been others, but none with this scope, speed and total dominance over the environment. Cattle, dogs, chickens, domestic cats, rats, poa anoa<sup>26</sup> and cockroaches are clear winners. Mammoths, saber tooth tigers, giant sloths, spitting cobras, flightless birds and pelagic fish are the losers. The jury is still out on Ground Zero and the first three minutes of this Big Bang.<sup>27</sup>

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25 Mathematical models show that when two groups meet, even at low rates of intermixing, genes pass quickly between them in a few generations.

26 Water grass, a plague that infests almost all golf courses.

27 Physics terminology for the epicenter of the explosion and the expression of the early moments of the universe.

The hypothesis put forward by this book is that this starting point is the Southern Cape. This is Out of Africa *carpensis*. Proving this is what the rest of this book is about.

The ethnocentric nature of human beings means that, predictably and emotionally, we all root for the home team. We would all like to believe that humanity started in our own backyard. I am sure that you feel a lot like I do, that I am an ideal model specimen of humanity. If God was going to make the human race in his own image then surely we would all look like Philip Copeman and orchestras would be led by bass players.

Surely each of you has a beautiful place that you know, that is very special to you. For me it is Bassas da India.<sup>28</sup> You may know an awesome lake setting on the south side of Chicago and it may look, to you, like the obvious place for the cradle of humanity. Don't worry, you are not alone in this egocentric thinking. When God delivered the tablets to inspire Joseph Smith to start the Mormon church, he didn't leave them, like the first time, 5 km away from where Moses happened to be camping at Mount Sinai, but conveniently dropped them off in Pennsylvania in 1827.<sup>29</sup> When the Jews invented the idea of the coming messiah, they did not have him landing in Rome or Tokyo; wonder of wonders, he was to be born right in their own backyard in 4 BC Bethlehem, a rural backwater 100 meters from the center of the universe! *Mazeltoy!*

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28 Bassas da India is an uninhabited, roughly circular atoll enclosing a lagoon about 10 km in diameter. It is located in the Southern Mozambique Channel, and the surrounding sea life is bounteous.

29 Smith said that an 1823 visitation from a resurrected prophet named Moroni led him to a long-buried book, inscribed on metal plates. It told the story of the long lost history of the Israelites in America. Smith was more reluctant to show anyone the plates than Tim White to show us the original skull of *Ardepithecus*.

The stakes for claiming the starting site of human origins are high. It is not democratic to claim a single starting point for modern humans, therefore the multiregionalists<sup>30</sup> will have us believe that the exact location of modern man's beginning is not a contest. Multiregionalists see a long history of the development of man, with interbreeding on three continents. This would mean that we do in fact all come from the same stock and that we have all been happily interbreeding for millions of years. This would make us all one happy family with no real starting point for humanity. It is a cute bedtime story, guaranteed to avoid nightmares, but unfortunately in the cut and thrust, winner takes all, world of evolutionary biology it is simply fantasy. The Old Man does not pussyfoot around with this kind of thing. He will have his chosen race. It just may not be the one that you want.

It is a revelation for us to discover, as late as the 20<sup>th</sup> century, that rather than being near the center of the universe, we are actually orbiting around an ordinary star in a very ordinary part of a very ordinary galaxy. When you look up into the Milky Way you are not looking at the center of the galaxy, but rather at a minor side tail of the rotation.

Similarly, unless you are a Cape Colored, or one of their close cousins, the Afrikaners, San, Tswana or Xhosa, you are going have to come to terms with the fact that it is not you but an impish race on the southern tip of Africa that is the chosen race. This truth is going to annoy publicists for TV celebrities, paparazzi for world royalties and praise-singers for tribal chiefs.

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<sup>30</sup> Multiregionalists are paleoanthropologists that still choke on the Out of Africa 2 hypothesis and the awful thought that we all descend from Africans.

No matter what the surface characteristics that make our appearances different or whatever your priest or shaman tells you about how your precious congregation is *the* vital cog in *the* Divine Plan, chances are that you are like me and the other 5.95 billion, who merely descend from a slim indirect branch of the original tribe. You should take solace in the fact that this descent is very recent. We are not far removed from these Beachwalkers and while this is their story, it also our story

– the story of all of us.



## God is an Englishman

15<sup>th</sup> February 1908. Charles Dawson finds part of an ancient hominid skull in a gravel pit near Piltdown in Sussex. This is checked and verified by Sir Arthur Smith Woodward of the British Museum. Soon the world applauds *Eoanthropus dawsoni*, named after its renowned finder. Piltdown Man's large brain and apelike jaw perfectly fit the collective psyche of the British elite. They see a big-brained man, but early enough to have ape-like features, living in Sussex, as proof of the central role of England in the destiny of the world. If God is going to create man in his own image, then Sussex is an appropriate place to do it.

Every mainstream book on human origins which I have read includes a chapter on the hoax of the Piltdown man. So shall it be here. It is usually recounted as a detective mystery, set in the smoky streets of London, with the reader and writer seeking out Jack the Ripper and the Piltdown Perpetrator. Here we seek a different angle. For our purposes, the Piltdown story is a lesson on how a gullible, ethnocentric society is so willing to see reality favoring their preconceived ideas, that they will believe anything but the truth. It is 40 years before the Piltdown fraud is uncovered and huge damage is done in the interim. The true southern origin is buried for 50 years beneath a prejudice convinced of European superiority. For our purposes, the entire British race is guilty of the Piltdown fraud. Arrogance is the smoking gun.

Today a human cranium with an ape's jaw is considered to be extremely implausible and far-fetched. We now know the brain to be the last major organ to develop.

One hundred years ago, anthropologists were imbued with the Eurocentric cultural prejudice which considered man's big brain as his ticket to rule, the main evolutionary feature that made it possible for man to develop all his other unique features. Britain in 1900, at the zenith of the Empire, is not ready to accept that we are all descended from Africans.

Foreshadowing their modern counterparts, British scientists model the facts to confirm their theory. This is a lesson for us all, that information always reaches us through the strong filters of culture, hope and expectation. Humans are a selfish species. This is true of any genus.

Self-preservation is a characteristic of any group of life. Species preservation is hard-coded into our genes. We humans, however, have elevated this selfishness to a new level. With consciousness, we have the ability to formulate, inscribe and propagate ideas of self-preservation and we go about it shamelessly. We have always looked at the world around us through the tinted glasses of our own self-interest.

The movie business shows us how prehistory is always presented through the eyes of the beholder. In the Hollywood case, this is the eyes of the West Coast movie makers. They cannot escape the inclusion of monotheistic spirituality and the idea that *Americanism* or *Europeanism* has always been a part of our make-up. These are in fact modern concepts that have arisen only in the last few thousand years. *2001: A Space Odyssey* depicts early man as God-worshipping apes. The idea that early man was a person just like us who happened to arise in Africa, is a road too far for the Eurocentric imagination. *Quest for Fire* puts a white tribe in Africa fighting off the savages, who happen to be black.

10000 BC put Clovis people,<sup>31</sup> the early Americans, back in Africa organizing mammoth hunts and carrying out North American Indian rituals, a very American pastime. It is difficult for Europeans and their American descendants to view Africa objectively. It remains a scary place for them – like Transylvania or the wild Boreal North.

Believe that individuals and the groups they live in will work more for self-benefit than search for truth, and you are halfway to understanding why it takes us 2000 years before we start getting a clear picture of our human origins. For much of the last 2000 years, the Catholic Church, based in Rome, has held an iron fist around religion and scientific thought. With the kind of cash and prestige involved, you can imagine that adopting new theories that could unsettle the status quo would not really have been encouraged in the God Business – *Spiritus Sanctus*.

When God speaks to Moses, he doesn't tell him to help the Egyptians, nor is his message to Mohamed to prop up the Roman Empire or restore the Jews to their former glory; his message to Mohamed is help himself and his Muslim followers. It is not surprising then that we still place ourselves at the center of the universe, the pinnacle of evolution, God's chosen species. God follows this up by sending us prophets that confirm his divine plan – *Allah Akbar*.

The Catholics have a working model. God creates the world in seven days and on the sixth day he creates man. Man keeps wanting to behave like all the other beasts and sinfully does things in his own self-interest. God sends a message to wash away the sins of the world. God sends this message with someone he can really trust. He doesn't send a squirrel or an owl, he sends a man, a Jew.

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31 Clovis people are the early Americans, who lived around 10 000 years ago, known primarily for their stone tools, used to perpetrate the mass killing of the major fauna of the Americas. That they were the first Americans and they were killers is disputed.

Personally I think a talking owl would have been more effective than a talking Jew. This would have worked for me. I would more easily follow a talking owl around the Cape of Storms than a talking Jew. A talking owl would indeed be a miracle. Anyway, the ungrateful Jews make a deal with the Romans to have the Son of God removed and unwittingly create our first mass market martyr<sup>32</sup> – *Oih Veh*.

Now follow 2000 years in which millions will die in God's name before the sins are expunged, but the Catholics have a great carrot-stick system for keeping themselves at the center of the universe and being God's sole franchise on earth. They shore up this position with economic alliances, torture and political intrigue. To tend with the annoying problems that reality does not quite seem to fit the exact words of the Bible, they begin to develop a science of their own. For a thousand years, they are the sole guardians of this science. Successive popes turn to Aristotle and Augustine to give them an independently verified view that the world is an earth-centered one with Rome pretty much at the epicenter. Man, particularly men like themselves, ordained by Gods indomitable will, is at the top of that pile – *Hallelujah*.

Around 1250, Thomas Aquinas comes up with a mathematical proof that God the Creator exists. It is based on five ways to prove the existence of God: motion; causation; contingency; goodness; design.

The reasoning is:

- Today there is something moving
- Everything that moves is put into motion by something else.
- The series of preceding movers cannot reach back infinitely.
- Therefore, there must be a first mover – God.

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<sup>32</sup> The *Unriddling of Christian Origins* makes an interesting point that it was Saul of Tarsus and not Jesus that actually first came up with the Son of God concept. It is a fascinating discussion, beyond the scope of this book.

Man is created by something, and that something is in turn created by something else. Keep following the causal link and eventually you have to get to the point that the first thing that created something is God. Genesis is mathematically proved – *Amen*.

It takes 500 years before Georg Cantor invents transfinite mathematics and Kurt Godel the inconsistent axioms theorem that disprove Aquinas' logic. If you have ever tried to read Godel or Cantor, or even the translations from German, you quickly get an idea why, of these two, the greatest mathematicians of the 19<sup>th</sup> and 20<sup>th</sup> centuries, one dies in a mental hospital and the other commits suicide. This explains why they don't make it into mainstream thinking. In dealing with the concept of the infinite, it is easy to be duped. Right up to today, most people will believe that Aquinas has a pretty good point. Thomas Aquinas is still the driving intellectual force behind Intelligent Design. Pilgrim, as we will see later, the world is not always as we would like to see it.

It is easy to get caught up in paradoxical thinking. A tortoise and a hare enter a race and the hare runs ten times faster than the tortoise, so we give the tortoise a 100 m start. The race begins and the hare runs the first 100 m. In that time the tortoise runs 10 m. The tortoise is in front. The hare runs another 10 m while the tortoise runs 1 m. The tortoise is still out in front. The hare runs the 1 m, but the tortoise runs 0.1 m and still keeps the lead. Stay with this logic and the hare can never overtake the tortoise. Pilgrim, what I am getting at here is that to travel with me to the Garden of Eden and understand human origins, you are going to have to pack away your preconceived ideas, open your mind and avoid closed thinking.

Living in our self-centered world of human privilege, it is really difficult even to entertain the concept that the most intelligent men to roam the planet may actually have come and gone. *Homo erectus* is not racing down a life path trying to become like us.

*Homo erectus* is simply trying to make ends meet in the 'hood, get himself a burger and get laid as often as possible. He isn't sending off his résumé to the best colleges or trying to learn to *walk like us, talk us and learn to be hu-uman to-oo*. He choses to live scavenging on the beach, hanging out with babes and taking mind-bending drugs.

Even for a working scientist it is difficult to get away from seeing the world in an egocentric manner. From the Greeks to Copernicus we have believed that the earth is the center of the universe. This makes perfect sense.

When you get out of bed, you feel yourself pulled towards the earth. The sun rises from the earth in the morning and sets back into the earth in the evening. Over 2000 years, using the best of Greek, Indian and Arab mathematics, by the 15<sup>th</sup> century the best we come up with is a curve-shaped disk, with all the heavenly bodies moving around us. Lief Eriksen gets to America by following the continental shelf around Greenland.<sup>33</sup> Compared to the Polynesians who spread throughout the vast Pacific, the Europeans do not have the ability to navigate in the open sea until the 1400s. In 1488 the biggest fear for the crew on Diaz's ship is that they will fall off the edge of the world!

It is little known that from the time that Copernicus, Kepler and Galileo first put down their thoughts of a sun-centered universe, it is 400 years before even the scientific community universally accept their theories. The reason is that the earth-centered Aristotelian model, with the added adjustments and concentric orbits, makes better predictions of planetary movements. If you drop any object it is sucked towards the center of the earth. Such are the limits of our egocentric thinking that something as obvious as Copernicus is scientifically rejected.

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33 The Vikings from Norway and Denmark sailed to America 500 years before Columbus.

It doesn't help that the Catholic Church, with their Augustinian doctrine of God's work, makes it a heresy, punishable by death at the stake, to question the creation-based ideas of the Bible.

In 1654, using scripture, the Bishop of Armagh, James Usher, calculates that the world began at 9 am on 23 October 4004 BC. In the 19<sup>th</sup> century we still believe that the world is a very young place. So it is logical that the first fossil bones turning up in the layers of rock strata are taken as proof that the reach of Noah's flood extended to England. But soon this thinking becomes untenable. The fossils are pointing to a much older beginning for the earth, and the fossil finds are so consistent that people begin naming geological periods after the counties in which a particular group of fossils are found. The Cambrian, Devonian and Silurian ages are named after the first areas where these rock structures are identified.

Pilgrim, you must by now feel that this is like a book on theology. Not so, the point is merely to show you how self-interest and ethnocentric thinking affects our abilities to determine reality in science. For much of the last 1000 years, we have been tied to the rack of creationism and the inquisition has been there to enforce it. Catholic France and Protestant Germany cannot break the bond of fundamentalism.

The Protestants break away politically, but institute an even harsher retribution on scientific thought. The witch-hunts of 18<sup>th</sup> century New England in the USA are conducted by Protestants, not Catholics. Witch-hunting is still a practice in Limpopo, South Africa, today. Collecting old skulls is one sure way to get yourself pointed out as an agent of the Prince of Darkness.<sup>34</sup> That is why Mormon Joseph Smith, out digging in the woods in 1827 Pennsylvania, finds metal tablets and not human skulls.

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<sup>34</sup> The name for the Devil, who seizes men's minds and makes them think the unthinkable.

My university applied maths professor, Paul Hahn, himself a creationist, teaches us that God has laid down the fossil record just to challenge Darwin, in a kind of pillar of salt game, like he did with Lot, Job or Abraham. It is a Danish priest, Nicklaus Steno, who first draws our attention in 1650 to the fossil world. He is forced to explain the seashells stranded on the surrounding mountain tops. From fossilized sharks' teeth, *glossopetrae* or tongue stones, he plots for us a world that was not always as we see it today. The Guys at Intelligent Design are having a field day confusing the early fossil hunters as to exactly how far Noah's flood reached.

While the best fossil finds of early man are made in the German Neander Valley and the French Cro Magnon caves, it is the British who are the first to fully break free, openly challenge the Catholic Church and make headway in the theory of early man. We have all heard of Charles Darwin. His *Origin of Species* and the later *Descent of Man* are groundbreaking works. Darwin picks up all credit, but he might have stayed a odd figment of society were it not for his conspirator in the theory, Thomas Huxley. Huxley, known as Darwin's Bulldog, bears the brunt of the establishment's dismissal of the preposterous idea of monkey ancestors. It takes 30 years of debate before the theory of evolution is seriously accepted as core philosophy by the Royal Society.

In the end, the evidence of evolution is overwhelmingly laid out in front of us, but without the tireless effort of Huxley and his ability to withstand enormous social ridicule, we could still be looking for the Garden of Eden under the apple orchards of Tuscany or the Tigris Valley and searching for Noah's Ark in Turkey. Americans still spend more resources looking for Noah's Ark in Asia Minor than looking for early man in South Africa. I guess when they find the Ark, they will doubtless find evidence of all the species radiating from that Holy Middle Eastern mountain top.

My high-school headmaster, himself a white supremacist, holds that Darwin recanted his heresy on his deathbed. That is South Africa in the 1970s. Nineteenth century England is even more fertile ground for fairy tales.

Huxley is also the inventor of the term “agnostic”, meaning “against Gnosticism”, the first century incarnation of Christianity. Agnosticism is both a boon and a burden on the atheist movement, because it gives people an easy way out of the unpalatable but logical conclusion of atheism, the denial of the Creator himself. Agnosticism has become synonymous with belief requiring proof, and so is in many ways a precursor to the modern scientific thought of questioning evidence and always withholding final judgment. It fits our story, because you should not want simply to believe that man comes from South Africa, you should want you to see the proof for yourselves.

The South African Settler tribe carries a proud tradition of paleoanthropology. We were there right from the beginning. Our 19<sup>th</sup> century contribution comes from the unlikely source of the Bishop of Natal, John William Colenso. Colenso is a controversial figure who was important in the setting-up of the British colony of Natal, now an east coast province of South Africa. His missionary work amongst the Zulus includes setting up a mission at Bishopstowe, outside Pietermaritzburg, and translating and printing the New Testament in the Zulu language. Colenso also works as an amateur geologist in the midlands of the colony of Natal.

Our interest in JWC comes from his book *The Pentateuch and the Book of Joshua Critically Examined*,<sup>35</sup> where he tries to remove points of doctrine which men of the mid-nineteenth century find impossible to believe. Colenso’s work on African geology and the questions put to him by Zulu converts cause him to rethink his position on the Bible.

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35 The Pentateuch is the first five books of the Bible, ostensibly written by Moses under the direct command of God.

For Colenso, the problem centers on the right of the minister to free thought, a right which is denied “by [the] law to believe in the historical truth of Noah’s Flood, as recorded in the Bible, which the Church believed in some centuries ago, before God had given us the light of modern science.” For Science, the blows of the geologist’s hammer are decisive.

In 1863, a convocation of the bishops and archbishops of the Church of England is held. They meet to protest and censor the heresy of Colenso concerning the Word of God. They issue the following statement:

*All our hopes for eternity, the very foundation of our faith, our nearest and dearest consolation, are taken away from us if one line of that sacred book, the Bible, be declared unfaithful or untrustworthy.*

This is the position of the Bishop of Cape Town, Robert Gray, who takes it upon himself and moves to excommunicate Colenso.

Bishop Colenso is led to the conviction, painful to himself, that the Pentateuch, as a whole, cannot personally have been written by Moses, or by anyone personally acquainted with the facts which it professes to describe, and further, that the narrative, by whomsoever written, is not the revelations of the Divine Will and Character and cannot be regarded as historically true.

To feel the force of these words and to understand the anguish they both cause and relieve, it is necessary to realize how widespread is the view quoted by Colenso.

*The Bible cannot be less than verbally inspired. Every word, every syllable, every letter, is just what it would be, had God spoken from heaven without any human intervention.*

The consequence of breach is clearly laid out for every believer, Revelations 22.

*For I testify unto every man that heareth the words of the prophecy of this book, If any man shall add unto these things, God shall add unto him the plagues that are written in this book. And if any man shall take away from the words of the book of this prophecy, God shall take away his part out of the book of life, and out of the holy city, and from the things which are written in this book.*

Sobering words indeed.

The Catholic Church and even the Protestants and Church of England do not treat internal dissent with the milk of human kindness. They regard dissent from their own as treasonable heresy, as Giordano Bruno finds out in 1600. He burns at the stake for merely suggesting that the world may not be as we see it. Galileo can count himself as fortunate. He saves his own life, by having the good sense to agree that the world is flat.<sup>36</sup>

There is no respite by avoiding Christianity. Christianity promises a supernatural punishment for non-belief. The Koran delivers a far more immediate threat, “Guard yourself against the fire prepared for disbelievers, whose fuel is of men and stones.” So much for simply living in glasshouses and not casting first stones.

Contrary to popular opinion, Darwin was not a senior member of the Church; he was a lowly theological student and had no real career in the Church. Colenso, on the contrary, was on a path to the highest office.

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<sup>36</sup> Not quite. Even though the Bible states that the world has four corners, the issue between Galileo and the Church is not about shape, but about the earth being at the center of the universe.

If you are reading this book and you regard yourself as a Christian, then you owe a debt to Colenso. Prior to the 19<sup>th</sup> century there is no compromise, the Bible is taken as the Word of God, rather as the Islamics regard the Koran today. There is no mercy for the infidels. Any discussion of secular alternatives is regarded as heretical.

An atheist, like myself, is not even able to testify in a 19<sup>th</sup> century British high court. How can you, after all, trust the testimony of someone who can not swear it on the Bible, so help me God? There is no room for interpretation. Saying things like, “Maybe it wasn’t actually seven days, they ... er ... meant seven weeks,” or “Noah didn’t exactly take 750 000 species of beetle with him on the Ark” is sure to lose you your promotion, turn heads at the club or lose you brownie points with your father-in-law.

Defending the absolute word of God becomes a losing battle. From Isaac Newton onwards, in the 17<sup>th</sup> century, things start to go pear-shaped for the fundamentalists. Dyslexic, insomniac, atheists all over the Empire are lying in bed awake at night thinking about Dog. Bishop Colenso gives members of his flock a way to nod off at night by counting sheep and accepting that science and religion work, without contradiction, in two independent spheres.

This is great news for Darwin, Huxley and the rest of us who want to sue in court. Bad news for some dishonest priest who won’t pay his bar bill. The news does not go down well at Canterbury, and in Cape Town moves are made to gag Colenso.

Colenso’s views polarize the Anglican Church. He also participates in contemporary anthropological debates, resolutely emphasizing the humanity and dignity of the Zulu and rejecting the emerging social Darwinism that seeks to assign them to an inferior stage in the evolution of the human race. Ironically Colenso finds more support in England than South Africa. A number of prominent Unitarian ministers and laity defend Colenso’s right to remain Bishop of Natal,

and the public also offer support through articles and reviews of his work in the Unitarian quarterly, *The Theological Review*. Not so back home in Africa. In 1863, under duress from Robert Gray, the Bishop of Cape Town, Colenso is excommunicated *in absentia*. Coincidentally, he is represented by a lawyer, Dr Wilhelm Bleek, who is credited with being the first person to coin the term “Bantu”.<sup>37</sup>

The famous atheist philosopher Bertrand Russell notes that there would be far more public atheists if it were not for the fact that men protect their incomes. So is it in colonial South Africa. Bishop Robert Gray controls the purse strings of anyone that would support Colenso against him. Colenso lives his last years in poverty in Natal. Support in Natal for Colenso is large, but private. My tribe, the Settlers, has produced many great men, but in keeping with our lower middle class upbringing, a yellow streak of cowardice runs through all of us, and we often choose the easier route than the road of truth.

Colenso finds few public supporters amongst his own people. Philip Walker Copeman goes about his business of converting Xhosas and ministering to the Settler faithful. His monthly stipend arrives on time from Cape Town. The Settlers show this gutlessness again in 1948, we stand aside and watch the Afrikaners roll out apartheid, while we take tea and cucumber sandwiches.

Without Colenso and his Unitarian allies, evolution’s flight path into mainstream Christian thinking would be more bumpy. Even today evolution is still not fully embraced by the uneducated, the myopic and the crazies, who today, just happen to be the majority in most western countries.

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<sup>37</sup> The name used by the apartheid government to define South African blacks. Anything associated with apartheid is controversial. Anthropologists use the term Bantu to describe all Eastern and Southern Africans with genetic origins in Cameroon. No offense intended.

Colenso is a brave man indeed, who stands up to the conventional thinking of his peers, with little to gain and much to lose. Two hundred years earlier and he would surely have been on the wrong end of an exclusive *braaivleis*.<sup>38</sup> John William Colenso, a proud member of the Settler tribe.

1900 sees England at the zenith of her power, the period when the sun never sets on the British Empire. Hunters are discovering human fossils everywhere, but not in the Empire. They are finding fossils of early man in Germany's Neander Valley, the Levant and Java, but they are crude creatures with thickset features and enormous eyebrow ridges. Descendants of brutish beasts is not at all how the British see themselves. Britain is a country on the warpath with Germany, and England desperately needs an early man of her own. For a "nation of shopkeepers" that has conquered the world,<sup>39</sup> it is easy for the English to be convinced that their little island truly is the center of the universe. To a drum roll and 21-gun salute, Charles Dawson strides onto center stage with the Piltdown hoax.

This is a period in which many scientists are either gentlemen with private incomes or well-heeled amateurs. A huge status is achieved by fossil finds – instant fame and invitations to the most exclusive clubs in England. The story of the fraud has been told with embellishment many times, but essentially in 1908 Dawson mixes an orangutan jaw with a stained human skull and drops them into an open roadworks in Piltdown, Sussex, where they are found, to be duly endorsed by Sir Arthur Smith Woodward, Britain's leading fossil expert. Piltdown man bursts onto the world, a big-brained creature, a good-looking hunk with all the modern characteristics that overshadow the crude findings of the ancestors of the surly Germanic races in the Neander Valley.

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38 The Afrikaans word for a barbecue. Hundreds of thousands of people, mostly Jews, met their deaths by burning in the name of Christian purity.

39 Napoleon's derisive words of the British as unlikely to give him trouble in battle, probably derived from Adam Smith.

Dawson and Smith Woodward are hailed as heroes of the Crown and Defenders of the Faith. They show the world what we have known all along, that God is an Englishman and has put down his early human ancestor on the hallowed island. It all makes sense to the chosen race. Charles Dawson saves the Guys at Intelligent Design the hassle of dropping off another confusing fossil.

The Piltdown hoax is a scientific disaster of the first magnitude. Piltdown “confirms” hypotheses about our early ancestors that are wrong – specifically, that the brain case develops before the jaw. The early *Australopithecus* fossils found in South Africa in the 1920s look like monkeys and fail to receive the attention due to them for this reason. Prominent anthropologists waste years of their lives exploring the properties of what turns out to be a fake. The lingering suspicion that one of them might have been involved in the forgery will cloud reputations forever.

The entire reconstruction of the history of the evolution of humanity is thrown off track until the 1950s. Hundreds of articles and memoirs are written about the Piltdown finds before the hoax is exposed, all wasted effort. Likewise, articles in encyclopedias and sections in textbooks and popular books of science are simply wrong. An immense amount of derivative work is based upon a relatively small number of original finds. For many years the Piltdown bones are a significant percentage of the fossils used to reconstruct human ancestry. It is a black mark on science that it takes 40 years to expose a hoax that obscures human origins. Creationists are not slow in pointing to the hoax, the erroneous reconstructions based on the hoax, and the long time it takes to expose the hoax, as criticism of the whole scientific process. This allows the credibility of the creationists to survive long past their sell-by date. Their absurd arguments, continue play havoc right up to the present.

In 1943, Kenneth Oakley, working in Cambridge, knows that fluoride in the soil is absorbed by bones as a function of their time in the ground. The quantity of fluoride is never large, and needs complicated analysis, but by 1948 a satisfactory procedure is in place and Oakley decides to test the Piltdown bones. The figures are published in March 1950, but by then the fire has gone out of the belly of the few remaining old protagonists and it does not have the explosive effect it would have produced 35 years before.

There it might have rested, had it not been that at a social function in July 1953, a chance remark by Oakley prompts Joseph Weiner, an anatomist working in Oxford with Professor le Gros Clark, to think laterally about the puzzle. Weiner figures that if Piltdown Man is not as old as has been thought, and if the jaw belongs neither to the skull nor to the rich diversity of nearby bones, then natural explanations could be eliminated and Piltdown is a set-up, its examination by men of high academic and ethical repute notwithstanding. As Basil Fawlty would have said, “Weiner stated the bleeding obvious”.<sup>40</sup>

Weiner examines the teeth, with le Gros Clark. The abrasions on both the original and the plaster casts are all too obvious. More refined fluoride tests are done, showing that the jaw is not long dead and the skull only slightly older. Worse comes when they recognize that some of the remains have been stained with potassium bichromate and are actually painted with bituminous Van Dyke dark brown paint to match the Piltdown gravel. Careful examination shows the tooth canal has been opened by the abrasion and become blocked with paint. Earlier experts, never thinking they could be tainted with such a barefaced deception, had not looked.

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40 Words of Jim Leavesley presenting the radio show *Occam's Razor*. Basil Fawlty is the famous television comedy character played by John Cleese.

The case of the Piltdown Fraud is never fully solved. There could even have been a number of them. My personal theory is that it is a reverse play by the Guys at Intelligent Design to muddy the waters. It is all an office joke at Charles Dawson's expense. Now that he works at Intelligent Design even Dawson can see the humor in it. To make up for it, the Old Man puts Dawson on female gynecology, which is a lot better than being in microbial mutation, which is where the thankless hard graft at Intelligent Design is done. Daily, billions of variations are worked through in microbes and the whole department gets absolutely no public recognition for it. Most of the species are not even recognized, let alone named. This has been going on for two billion years. Some of the worst characters in history work for eternity in microbial mutation.

Piltdown is not the only attempt to claim the site of human origins, but it is the most successful. Galley Hill man in England, the Olmo remains in Italy, and the Calaveras skull in the United States are shown to be recent intrusions. Nebraska Man is named in 1922 from a human-like tooth which has been found in Nebraska. Harold Cook, a rancher and geologist from Nebraska, finds the tooth in 1917, and in 1922 he sends it to Henry Fairfield Osborn, a paleontologist and the president of the American Museum of Natural History. Osborn identifies it as an ape, and quickly publishes a paper identifying it as a new species, which he names *Hesperopithecus haroldcookii*, Harold Cook's Western Ape Man.

The idea of the ancient cowboy is soon discredited. As creationists tell the story, evolutionists use one tooth to build an entire species of primitive man, complete with illustrations of him and his family, before further excavations reveal the tooth to belong to a peccary, an animal similar to, and closely related to, pigs.

The creationists have a field day and Dr. Gish says, “This is the first time a pig makes a monkey of an evolutionist.”<sup>41</sup>

What is amazing about Piltdown is not that there are fraudsters out there, but that it takes 40 years, the destruction of two world wars and American interference in all three events before the hoax is unraveled. The damage is that research money is diverted from Africa where it is needed and misplaced into framing the European model of human origins. This is still relevant to us today, as you will see later. We still suffer under a Eurocentric approach to our origins. The later attacks come firstly through the over-emphasis on the importance of Neanderthal man and secondly through the misplaced importance given to the multiregionalists; more about these later.

For 50 years the English unwittingly carry on a tradition upheld by the Catholic Church, of suppressing the true story of our human origins. For now, what this tells us is that in the paleoanthropological world they will believe anything that is not the obvious truth, that the first humans were not from a romantic English country Garden of Eden, but are from an unlikely place and an unlikely race that is still alive and thriving today.

Settlers regard paleoanthropology as our personal domain. Our disputes over human origins are brother against brother, parochial arguments between colonials and mother-country loyalists. This is a recurring theme whenever enthusiasts of this science meet. We can beat them at rugby and cricket relentlessly, but the one thing that the Poms simply just don't get is that modern humans did not originate in Westminster, they began in the Southern Cape. Their direct geographical descendants don't speak English, they speak Afrikaans!

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41 Gish is a modern, self-styled spokesperson for the creationists.

## Southern Apes and Madmen

28<sup>th</sup> November 1924. Raymond Dart is an unknown Australian anatomist from Toowong,<sup>42</sup> but things are about to change dramatically for him. In 1920, Dart goes to the University of London, where he studies under the anatomists Grafton Elliot Smith and Arthur Keith. Dart would still be unknown if not for a falling-out with Elliot Smith that sees him banished to South Africa to start the School of Anatomy at Wits, and if not for the delivery to his home that Saturday in 1924 of a strange-looking monkey skull blasted out of the rocks of the Taung lime works. This is one of those fossil bones mischievously put into the rocks to confuse us. Dart pronounces this to be the skull of a baby apeman, an early form of man. So, in a reference to the penal colony from which he comes, Dart names the species *Australopithecus africanus*, Southern Apeman of Africa. The Guys back at Intelligent Design think this one is hilarious and take the rest of the afternoon off to go watch cricketer Don Bradman knock up 254 at Lords. The Old Man only interferes once by having him spilled at second slip while still on 14.

At the turn of the century, there is little scientific movement from Africa, gripped in the vice of creationism. It is ironically an Afrikaner, Eugene Marais, who gives us the first glimpse of the science of human origins. Nearly a century before Jane Goodall and Dian Fossey study chimpanzees and gorillas in the wild, Marais studies white ants and baboons. He writes the *Soul of the White Ant* in Afrikaans, and in so doing unwittingly starts the science of ethology.

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<sup>42</sup> I went to Toowong, once a town, but now a suburb of a growing Brisbane, which is filled with Asian immigrants. It is the butt of Australian racist jokes – “Toowongs don’t make a white”.

Although Marais studies white ants in the 19<sup>th</sup> century, the modern science of ethology is usually considered to have arisen as a discrete discipline with the work in the 1920s of Dutch biologist Nikolaas Tinbergen. Ironically, Marais is schooled in London, but gets caught up in the Anglo–Boer War and goes on to be the defining poet of Afrikaans literature.

He is so bitter after the war, that not only will he not write in English, he will not publish in English. His work, produced in Afrikaans, is lost to a world unable to understand him.

In his work on white ants, Marais sees termites for the first time as all members of a colony, with the termite itself forming what is essentially a single living organism. The various castes in the society have the functions of the body's organs, with fungus gardens acting as the digestive tract, soldiers and workers as the cells of the blood, and the queen as the brain and the reproductive organs, with even the sexual flight executing the function of sperm and eggs. The "soul" of the termite, the psyche, is the property of the entire society.

Marais' work is not unnoticed by the Flemish, the one nation on earth that can understand Afrikaans. His book *Die Siel van die Mier* is plagiarised by Nobel Laureate Maurice Maeterlinck, who publishes *The Life of the White Ant* in 1926, falsely claiming many of Marais' revolutionary ideas as his own. Maeterlinck is able to do this because he is Flemish and therefore understands Dutch, from which Afrikaans is derived. Maeterlinck is one of the few people in Europe who read Marais' original texts.

By now Marais has become a bitter, introverted figure, hell-bent on personal destruction through the abuse of morphine. He withdraws from daily life to the Waterberg. He becomes absorbed in poetry and writes a monumental work, *The Soul of the Ape*, which is not completed and is only published posthumously 30 years later.

Marais' theory is that, unlike termites, baboons have the ability to memorize the relationship between cause and effect. They can therefore vary their behavior voluntarily. While termites are instinctive, the mind of baboons is based on "causal memory". The reason for this difference, according to Marais, is natural selection, which is not, as Darwin has insisted, "the survival of the fittest", but rather "the line of least resistance". Those species best able to adapt to their specific environment survive, while those not able to become extinct. Natural selection, therefore, has the tendency to both localize and specialize species.

This is remarkable thinking for this time. It is more so if you understand the soul of the Afrikaner, a half-caste nation, alone on a dark continent, driven by the conviction of Calvinist creationism. Marais is a self-confessed pantheist, in itself a radical disposition for the times. He jokes that the only time he enters a church is for weddings. Marais becomes the symbol of Afrikaner intellectualism and this drives him even more into his shell and his drug habit.

There is not a happy ending for the world's first ethologist. In 1936, deprived of morphine for some days, he finally borrows a shotgun, places the end of the weapon in his mouth and pulls the trigger. This occurs on the farm Pelindaba, belonging to his friend Gustav S. Preller. For the dark moods of certain of Marais' poems there is a black irony here. In Zulu, *pelindaba* means "the end of the business".

Marais writes the defining poem of Afrikaans literature, *Winternag*. I translate it here into English. I am unable to capture the melancholy, insomnia, depression and feelings of isolation that will play havoc with the Afrikaner nation for much of the twentieth century. Marais is given no credit for his input to ethology and Afrikaners shun the search for human origins.

*Winter night*

*Oh cold is the wind in the night.  
It shines naked in the half light.  
A God's mercy is shadowy wide  
Starlit veld lies with nowhere to hide.  
High in the mountainous breeze  
Sprayed in the waving seas,  
The grassland is moving  
Like hands waving with ease.*

*Oh sad is the voice  
of the East wind's friend,  
like the song of a maiden  
love lost with no choice.  
In each grass blade fold  
a shiny dewdrop takes hold,  
and swiftly it bleaches  
to frost in the cold!*

The Afrikaners take the bit about the Settlers rounding up the soldiers of the Empire to bully, batter and murder the Boer women and children very seriously. Their cries fall on the deaf ears of the merciless English, save for those of Emily Hobhouse, a Hanoi Jane figure who fights for the rights of Boer women. Hobhouse gives my grandmother, an intern at an English concentration camp, an autographed copy of her book *The Brunt of the War*.

Back in Settleville things are much more relaxed. Dart relates how two boxes of fossils from Taung are delivered to his house one afternoon in 1924, just as he is dressing for a wedding, at which he is to be the best man. Unable to contain his curiosity, he wrenches open

the boxes in the driveway. The first does not seem to contain anything of interest. But when he looks into the second, he feels a thrill of excitement. On the very top of the rock heap is undoubtedly an endocranial cast or mold of the interior of the skull. Had it been only the fossilized brain cast of any species of ape it would have ranked as a great discovery, for such a thing has never before been reported. But this is no ordinary anthropoidal brain. Here in lime-consolidated sand is the replica of a brain three times as large as that of a baboon and considerably bigger than that of an adult chimpanzee. The startling image of the convolutions and furrows of the brain and the blood vessels of the skull are plainly visible.

Taung is not big enough for primitive man, but even for an ape it has a big bulging brain and, most important, the forebrain is so big and has grown so far backwards that it completely covers the hindbrain. Dart ransacks feverishly through the boxes to find a face to fit the brain. His search is rewarded; he finds a large stone with a depression into which the cast fits perfectly.

This is certainly one of the most significant finds ever made in the history of paleoanthropology. Is this to be the instrument by which Darwin's largely discredited "missing link" theory, that man's early progenitors probably lived in Africa, is revived? The daydreams are interrupted by the bridegroom himself tugging at Dart's sleeve. "My God, Ray," he says, "you've got to finish dressing immediately – or I'll have to find another best man. The bridal car should be here any moment." Dart resumes the social engagement. A great day for science and a terrible day for badly prepared wedding speeches.

For the next month Dart patiently chips away the matrix from the skull, using his wife's sharpened knitting needles. Then, two days before Christmas, the rock parts and the face of a child emerges, with a full set of milk teeth and permanent molars in the process of erupting. Dart writes: "I doubt if there was any parent prouder of his offspring than I was of my Taung baby on that Christmas of 1924."

Dart's child from Taung, presented as the "missing link" from Africa, meets a chilly reception in Europe. Englishmen and anthropologists dismiss it as, at best, a relative of the chimpanzee or gorilla with little relevance to human ancestry, stressing that until an adult specimen is available, the matter is hardly worth discussing. This attitude prevails even though Dart takes the specimen to Britain in 1931 and exhibits it at scientific gatherings.

Racist thinking about Africa is dominated by British and German philosophy. David Hume, England's poster boy on liberal thought, writes in 1768:

*There never was a civilized nation of any complexion than white nor even any individual eminent either in action or speculation. No ingenious manufacturers among them [Africans], no arts, no science.*

George Hegel, the big bratwurst in 19<sup>th</sup> century German philosophy, writes:

*It is manifest that want of self-control distinguishes the character of the Negroes. This condition is capable of no development or culture, and as we have seen them at this day, such have they always been ... At this point we leave Africa, not to mention it again. For it is no historical part of the world. It has no movement or development to exhibit.*

Colonials like Dart, Philip Walker Copeman and the rest of my tribe command little respect in the mother country. They come from the gutters of England and are sent to the colonies as one might send a disobedient juvenile to reform school. Europeans today may think that we have progressed in our thinking about Africa, but this book will surprise even the most liberal thinkers in revealing that we have

actually moved very little. Ngila Muendane, our leading Africanist, sums it up:

*The stories of their experiences in Africa, told to a curious audience back in Europe, evoked a sense of superiority and philosophers started brewing theories about Africans, which were based on their lack of understanding. All they saw were less than human creatures, whom when they were elevated from that status, simply became savages. Only two courses of action were possible within that mindset, to destroy or civilise them.*<sup>43</sup>

These stories still ring out. Today the thought of a truly African origin is as uncomfortable as monkeys in the bedroom was for 19<sup>th</sup> century creationists. Dart's offer is not only a touch of the tarbrush.<sup>44</sup> It is a touch of the hairbrush. Taung simply did not mix well with cucumber sandwiches, which are best followed by strawberries, cream and a game of tennis.

The English might struggle to be honest about their human origins, but they are impeccable in their manners and integrity. The Taung child has a Mowgli-style experience. After a night out, Dora Dart leaves the boy in a box in the back of a London taxi. After a prolonged tour of London, the box is opened by the taxi driver who, alarmed at seeing a skull inside, takes it straight to a police station. Here a distraught Dora is reunited with the child. 70 years later, David Campese and some boorish countrymen are out celebrating Australia's win of the Rugby World Cup. The beers flow and Campese leaves the William Webb Ellis trophy in the back of a taxi cab. It is duly returned the next morning by the driver.

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<sup>43</sup> I am an African, Ngila Mike Muendane.

<sup>44</sup> Settlers' derogatory terminology for cross-breeds like Afrikaners.

I had a similar experience on my first visit to Britain, when I dropped 1000 pounds in a wallet at Kings Cross railway station and it was returned in full. If Dora Dart had mislaid that box in Johannesburg, I am sure the Taung baby would today be propping up an ashtray.

The problem with *A. africanus* is that, contrary to the prevailing doctrine of the time, dominated by Piltdown thinking, this early man has a small brain and a small jaw bone. It does not fit. Dart has the perseverance and determination to stick by his ideas and go against the prevailing wisdom. Like his fellow countrymen in the bodyline Ashes series, Dart ducks a lot of outswingers. He withstands years of ridicule before he is finally vindicated. To Dart's credit, his determination to stick to his ideals makes him, after The Brad,<sup>45</sup> arguably the greatest Australian ever to have lived.

To our credit Dart becomes a South African hero and we completely forget and forgive him his unfortunate Australian birth. To some of us, he is number one, but to most he features just after Nelson Mandela in the list of the top 100 South Africans of the 20<sup>th</sup> century.

Not all of Dart's ideas have stood the test of time. His assertion that gazelle long bones found in association with *Australopithecus africanus* were used as tools is unproven and largely dismissed. Dart also originated the idea of the *killer ape*. Although some other anthropologists, notably Robert Ardrey,<sup>46</sup> defended and further developed the theory, it is still widely questioned. It seems that killing was not the domain of *Australopithecus*, but only later developed by *Homo erectus* and his descendants, yours truly. Without Dart, Stanley Kubrick's *2001: A Space Odyssey* would just not have had the same memorable beginning.

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<sup>45</sup> Donald Bradman broke all cricket batting records and set standards which stood for decades. Bodyline tactics, bowling at his head, were used to unsettle him.

<sup>46</sup> *The Naked Ape*, Robert Ardrey

Dart is attached to my alma mater, the University of the Witwatersrand, at that time little more than a mining college, but which becomes, through the Bernard Price Institute, the candle of paleoanthropology through the dark period of our apartheid history from 1948 to 1994. This period sees the production of our great paleoanthropologists, Raymond Dart, Robert Broom and Phillip Tobias, who are like monks keeping open the door of knowledge.

I have never been a field collector myself, but I married a geologist's daughter, and before I was divorced I pilfered some choice stock from his arculean hand axe collection. Chris Jennings was the world authority on San groundwater systems, and chose instead to chase around the diamond world looking for glassy pieces of baked carbon. Talk about getting life's priorities mixed up. While these ill-gotten artifacts make up some of my most valuable collectables, he didn't even miss those axes. Strange how we can think that a glassy crystal is worth more than a 200 000-year-old carving.

Dart did not find the Taung baby himself. Like Charles Dawson in London, he was just the suit who took the credit in Jo'burg. Finding a fossil like the Taung baby takes real exposure to the African sun. To get to Taung, first you have to go to Kimberley. From Cape Town, it is a long and thirsty drive up the N5 that seems to go on for ever. Three Sisters is the last beer for 500 kms.

Twenty kilometers short of Kimberley you should turn off the highway and stop to see the 1900 battlefields. This is where General Piet Cronje and his Boer troops defeat British troops under Lord Methuen. Two years earlier, in our finest hour, the English Settlers had picked a fight with the Transvaal Boers<sup>47</sup> and enlisted the help of 500 000 hitmen of England's empire to come out and help us sort it out. Queen and Country rise to our call and ride out to our rescue.

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<sup>47</sup> A word meaning farmers, name for the Afrikaners, a mixed race, descendants of Dutch, French and Khoisan.

There we are, backs to the wall, 40 000 against half a million, and man do we smash those 40 000. Magersfontein, however is not one of those happy places. Magersfontein is the Thermopoli of Afrikanerdom. In a precursor to 1915 trench warfare, Koos de la Rey and the Boers bed themselves in front of Kimberley, catch the unfortunate Khakis<sup>48</sup> in the open and proceed to pick them off in a turkey shoot. It pales in comparison to the June 6<sup>th</sup> 1916 slaughter on the Somme, but is at that time the biggest setback ever experienced by the British Army, and that at the hands of some rural half-castes.

After lunch at the Big Hole museum in Kimberley, get back onto the road to Taung. Take the main road towards Mafikeng, and after the Flamingo salt lakes take a left to Taung, go out to the Buxton lime works and start looking for some more *Australopithecus* skulls. I figure that if I find one of these, I can make myself famous without having to write a popular book about paleoanthropology. To the untrained eye, like mine, when you get to Taung it looks rather like you would think it looks in Hadar in the Ethiopian desert, where Donald Johanson finds *afarensis*.<sup>49</sup> It is not long before lumpers like me say, "Heck let's go grab a beer."

Soon comes the problem that I have, Dart had, and every other fossil hunter has had since the Taung baby find in 1924. There is absolutely no further evidence of *Australopithecus anything* at the Buxton limes works, Taung or anywhere else in the nearby barren veld. All that turns up is *rooineks*,<sup>50</sup> mosquito bites and a few baboon bones. This lack of supporting evidence is what gives Dart his problems of credibility.

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48 British soldiers in Africa in 1900 exchanged the red tunics of the Crimea for light brown khaki outfits.

49 The Haddar, Awash and Afar regions in Ethiopia are right at the top of the Rift Valley and are some of the harshest places in Africa.

50 The Afrikaans word for "redneck", a derogatory word reserved for the lowest form of humanity, Settler South Africans, who can't go in the sun without burning.

To the Piltdown-drenched Londoners, Dart looks simply like a madman in a far-off desert part of the Empire, mumbling obscenities in the sun. The Guys at Intelligent Design stay on for drinks in the Long Room after stumps and Australia wrap up the Ashes before tea the next day.<sup>51</sup>

It takes another 50 years for Lee Berger, our American first draft pick who plays paleoquarterback at Wits, to solve the mystery of the Taung baby's death.<sup>52</sup> Berger comes from Berkley, where he could easily have gone into an East African team. He comes instead to an unpopular Jo'burg and rises to the top position. It is largely thanks to Berger that the rich pickings of Sterkfontein are duly dusted off and categorized at Wits. Courtesy of Berger, who found a mark on the Taung skull, we now conclude that a eagle or large vulture swoops up the child at some other location and simply drops the half corpse off at Buxton, where is it found in the limeworks millions of years later.

I wish Berger had come up with this earlier; it would have saved on the after-sun tablets and I could have spent another day following economic history in the Kimberley diamond fields. Maybe there is something in Intelligent Design after all.

Fortunately some people do listen to Dart, in particular a Scotsman named Robert Broom, who makes himself famous as South Africa's premier fossil hunter by collecting reptile bones in the fossil-rich Karoo Basin.<sup>53</sup> Broom gets little recognition for this work. South African dinosaurs get very bad press. In the dinosaur business you have to find ever larger and more ferocious carnivores, or make movies where you use reconstructed DNA to drop them into context with good-looking women. Flying pterodactyls in *One Million Years BC* with Raquel Welsh is a cracker; *Jurassic Park* using raptors is a latter day exposition of the genre.

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51 The Long Room is in the hallowed members section at Lord's.

52 Berger is head of the Paleoanthropology Unit at Wits.

53 An old inland swamp, today a large semi-desert deposit of sedimentary rock in the middle of South Africa.

The problem with South African Karoo dinosaurs is that they are not fearsome. They are older, much smaller and walk around on all fours, more like lizards than *T. rex*. However what they lack in style they make up for in regularity. This old inland swamp provides a clear layer-upon-layer description of the dinosaur record for 150 million years. *Lystrasaurus*<sup>54</sup> and their veggie diet, *Glossopterids*,<sup>55</sup> give unchallenged proof on continental drift and how Africa, South America, Australia, India and Antarctica were once one continent, Gondwanaland. An unusual side story for Settlers, is how modern-day Wales and England was once Avolonia, a part of Gondwanaland that broke loose and bashed into Baltica, pushing up the Pennines.<sup>56</sup>

Described by Broom as the greatest fossil hunter ever, there emerges James Kitching. Kitching has a career less publicized than Broom, but produces far greater yields in the field. He becomes the first director of the Bernard Price Institute at Wits and develops one of the best fossil collections in the world. In 1977 Kitching recovers seven *Massospondylus* eggs that had been exposed by road-making operations in the Golden Gate National Park in South Africa. The embryos are so well preserved that they yield remarkable insights into dinosaur biology and behavior. Under a high magnification microscope the 190-million-year-old eggs, the oldest from a vertebrate animal ever discovered, suggest that dinosaurs nurture their young. The animals' undeveloped teeth suggest that *Massospondylus* hatchlings needed help in feeding.

I went to the site of the fossil eggs near the roadworks. The tour guide stops and says to us, "OK, who can see a dinosaur." You look down and all you can see are stones. He then tells that we are standing on one of the richest sites in the world. Almost every stone is a

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54 A four legged pre-dinosaur, about the size of a bear.

55 A seed-based plant that leaves a huge fossil record in South America, South Africa and Antarctica, not necessarily the actual diet of *Lystrasaurus*, just there at the same time.

56 *Trilobyte, Eyewitness to Evolution*, Richard Fortey.

dinosaur bone! It is a common theme in this book – splitters find fossils, lumpers work in offices.

An important part of Broom's work is finding early mammals from the Triassic and Permian periods, 250 million years ago, that prove that our mammalian history is long indeed. We did not come after the dinosaurs, we had been there living in caves all along. It was in fact our cave dwelling that got us through the Chixalub impact meteor that destroyed the nasty lizards. As a mammalian shrew, only a few inches long, with a tail, whiskers and claws, it is difficult to get good press.

While he builds a reputation in Karoo dinosaurs, Broom the alpha male builds a terrible mammalian reputation. Farmers lock away their wives and daughters when Broom comes to town. Broom is not alone in this pursuit; most students and readers of paleoanthropology, well at least the ones that hang out with me in bars, seem to have an above-average interest in female anatomy.

Broom learns from Taung that lime will lead to the bones and the old Transvaal is full of limeworks. In the limestone caves in Sterkfontein, north-west of Krugersdorp, Broom finally finds the woman he has been looking for. She turns out to be more beautiful than any of the Karoo farmers' wives. Mrs Ples is a 2.5-million-year old *A. africanus*, an ex-prom queen and the finest female specimen ever found. Robert Broom has arrived, *Australopithecus* has arrived, Piltdown is exposed. Arthur Kieth finally admits "Dart was right and I was wrong". My father takes me to Wanderers to watch a Jewish doctor from Jo'burg, Ali Bacher, lead South Africa to a 4-0 whitewash cricket thrashing of Australia. We all agree that God is an Englishman, but he likes to spend the summer watching cricket in Jo'burg.

Broom is finding a surprising new modern following in the paleontology departments of the US bible belt. Advocates of Intelligent Design love Broom.

In one of his later works Broom writes,

*I believe there is a plan, and though in the slow course of evolution there have been ups and downs, and what look like mistakes, the plan has gone on; and we may feel sure that it cannot fail to reach its goal... The evolutionary clock has so completely run down. In Eocene times – say between 50 million years ago and 30 million years ago – small primitive mammals rather suddenly gave rise to over a dozen very different Orders, hoofed animals, odd-toed and even-toed, elephants, carnivores, whales, rodents, bats and monkeys. And after this there were no more Orders of mammals ever evolved. There were great varieties of evolution in the Orders that had appeared, but strangely enough Nature seemed incapable of forming any more new Orders.*

Broom should not be commenting authoritatively about these periods; his expertise is 300 million years ago and two million years ago. Cretaceous and early Tertiary rocks are rare in South Africa. He continues to write to the very last. Shortly before his death he finishes a monograph on *Australopithecus* and remarks to his nephew,

*Now that's finished ... and so am I.*

The mid-20<sup>th</sup> century is hard times for the madmen who propose a southern beginning for man. The world sees Africa as a backwater; they are far more enamored with the civilized world of Asia and Europe as a source of human origins. The irony of the mass murders carried out by evolution's great successes, Hitler, Stalin and Mao, is lost on the Eurocentrics.

Britain still does not accept that they have lost their Empire in the mud of Flanders. They labor under the misapprehension of social Darwinism developed by Herbert Spencer.

Spencer has been thinking about ideas of evolution and progress before Charles Darwin publishes *The Origin of Species* in 1859. His ideas receive a major boost from Darwin's theories and the general application of ideas such as "adaptation" and "survival of the fittest" to social thought becomes known as social Darwinism: the strongest thrive in society and the economy. It is possible to argue that human evolution shows the benefits of cooperation and community.

The idea the social Darwinists put forward is to leave society to evolve toward increasing freedom for individuals, where the best of the race will naturally rise to the top. Wherever Spencer talks, officers of the Empire twirl their handlebar mustaches and nod approvingly that evolution has brought England to her natural position at the top of the pile and that they themselves are the archtypical examples of this selection process. Are you getting the drift of what Dart and Broom are up against?

Social Darwinism basically licenses the strong to misbehave in the name of progress. Along with social Darwinism comes eugenics, a social philosophy which advocates the improvement of human hereditary traits through various forms of intervention. The term is first formulated by Sir Francis Galton in 1865, drawing on the recent work of his cousin, Charles Darwin. History has not been kind to Galton. Eugenics is first taken up by the American right wing and later becomes a cornerstone of Nazi Germany. This of course has as little to do with Galton as the gulags or Pol Pot have to do with Marx.

Eugenics has been regarded by its various advocates as a social responsibility, an altruistic stance of a society, meant to create healthier and more intelligent people, save resources, and lessen human suffering. Early proposed means of achieving these goals focus on selective breeding, while modern ones focus on prenatal testing and screening and genetic engineering.

It is unlikely that developments in genetic, genomic, and reproductive technologies at the end of the 20th century would have got off the ground without the principles raised by Galton. Without the principle of eugenics much of today's biotech industry could not exist. Today we are examining new questions and concerns about what exactly constitutes the meaning of eugenics and what its ethical and moral status is in the modern era. Nevertheless until eugenics can shed Adolf Hitler as its leading practitioner, it is never going to be a popular term with Jewish Europeans and their diaspora.

The world that Dart and Broom face may be free from the shackles of religious dogma, but this has been replaced with a modern version. Europeans no longer think of themselves as the race chosen by the Creator, but one in which they have created themselves as a superior race. African paleoanthropologists lose all credibility when they propose an African origin. How can Africa with its backward technology possibly be the precursor to the marvel that is Europe, Asia and America? One wonders how these Social Darwinists would have viewed the 21<sup>st</sup> century, where the dominant human is represented by one billion disenfranchised Asian factory workers, grinding away with bad lighting and no air-conditioning, working for less than \$10 a day, making plastic goods? Intelligent Design indeed.

If this were squash racquets, we would describe Dart and Broom as not standing on the center-T. Asia has this position and the Africans are faced with the task of knocking them off. In the early 20<sup>th</sup> century there is a strong case for man originating in Asia. Java Man or *Pithecanthropus erectus* is discovered by Eugene Dubois in 1891 on a river bank near Trinil in Java. Its age is uncertain, but thought to be about 700 000 years. This find consists of a flat, very thick skullcap, a few teeth, and a thigh bone found about 12 meters away. The brain size is about 940 cc. Most scientists now believe the femur is that of a modern human, but 100 years ago, Java Man, renamed *Homo erectus*, is a powerful image to contend with.

In 1911, a revolution in China overthrows the last emperor of the Manchu Dynasty and sets up a Western-style republic under the American-educated Dr. Sun Yat-Sen.<sup>57</sup> In imitation of western nations, the Geological Survey of China is established in 1917 with a Swedish geologist named J Gunnar Anderson as its advisor.

Among the many tasks of the survey is a search for the source of “dragon bones”. This is a generic term for the fossil bones that end up in apothecary shops as medicines. They are still popularly used in a ground-up form for healing wounds and fractures and treating cramps and dizziness. Some older men in China use them as sexual stimulants, though they are being replaced by modern drugs such as Cialis and Viagra.

The Rockefeller Foundation agrees to fund the work at Zhoukoudian. By 1929, Chinese archaeologists Yang Zhongjian and Pei Wenzhong, and later Jia Lanpo, take over the excavation. Over the next seven years, they uncover fossils of more than 40 specimens including six nearly complete skullcaps. Peking Man vies with Piltdown for the title of the missing link.

Excavation ends in July 1937 when the Japanese occupy Peking.<sup>58</sup> Fossils of the Peking Man are placed in the safe at the Cenozoic Laboratory of the Peking Union Medical College. Eventually, in November 1941, secretary Hu Chengzi packs up the fossils so they can be sent to the USA for safekeeping until the end of the war. They vanish en route to the port city of Qinghuangdao. They are probably in possession of a group of US marines captured by the Japanese when the war begins between Japan and USA.

Various parties try to locate the fossils but without result. In 1972, a US financier Christopher Janus promises a \$5000 reward for the missing skulls; one woman contacts him, asking for \$500 000, but she later vanishes.

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<sup>57</sup> This account is the description of Dennis O'Neil of anthro.palomar.edu

<sup>58</sup> Colonial name of the modern day Beijing.

In July 2005, the Chinese government founds a committee to find the bones to coincide with the 60th anniversary of the end of WW2. Still no show.

Peking Man and Java Man hold center stage with Piltdown. In this period the greatest force keeping *Homo erectus* off the human tree and preventing Asia being declared the site of the missing link are our unlikely allies the creationists. Creationists claim that Java Man is “bad science”. It is a rehash of the *Darwin recanting on his deathbed* argument. Dubois finds two human skulls at nearby Wadjak at about the same level and keeps them secret. Dubois later decides Java Man was a giant gibbon, and that the bones do not come from the same individual. Based on his own theories about how brains have evolved and wishful thinking, Dubois claims that Java Man was “a gigantic genus allied to the Gibbons”.

Creationists love to take the statements of 80-year-old publications and attack them as if they are the writings of today’s paleoanthropologists. Science doesn’t take a 2000-year-old book and stick to its literal content. The fact that science is a fast-moving, self-revising beast seems lost on creationists. It is a tough number to climb into the ring with someone like Tim White or Chris Stringer, our top scientists. It is a lot easier to pick on a dead Belgian. The creationists note that 100 years ago Dubois makes a retraction of his earlier claims that Java Man is an intermediate between apes and humans. Dubois also points out that *Homo erectus* was bipedal and that its brain size was “very much too large for an anthropoid ape”, and he never stopped believing that he had found an ancestor of modern man. It takes 60 years for the mainstream creationists to accept that Dubois’s finds render untenable the claim that the Java Man was just a large ape. Legitimate scientists come to the same conclusion in the 1930s, when other fossils similar to but more complete than the original Java Man are discovered.

The next generation show conclusively that the skullcap does not belong to a giant ape. It takes the discovery of the Turkana Boy fossil by Richard Leakey in 1985 to make this obvious even to creationists.

One “modern” creationist appraiser who has rejected Dubois’s initial claims and more recent assessments of his Java finds is Duane Gish. Gish has concluded, “We believe that the claim for a manlike status for *Pithecanthropus* should be laid to rest”. The dilemma of the creationists, of course, is the fact that their own preconceptions require them to categorize something as either ape or man. When the disciples of creationism actually encounter a creature that is in between, then they have to throw it in one or the other of the modern categories, and it is not surprising that a form with genuinely intermediate features should be randomly assigned to one of the only two possibilities they will accept.

So while mainstream creationists now accept *Homo erectus* as part of our family, sadly it now puts them back in the camp of the opposition to Out of Africa *carpenis*. Creationists need man or ape. They can’t have *apemen*. *Homo erectus* must either be modern man and evolve in a multiregionalist sense, or must be not man and have nothing to do with modern man. If the Guys at Intelligent Design did plant the *Homo erectus* fossils there just to confuse us, they must have worked overtime, because they are everywhere.

Kaye Reed of the University of Arizona State argues for the ape-like status of *erectus*. She points out that the analysis of the Turkana boy shows him to be 8 years old and fully grown. Also the key ingredient of the evolution of *erectus* is the move of females away from dimorphism to the current status of *sapiens* women.

The age of the South African fossils, one to two million years older than Java, inevitably wins out. The Sterkfontein area continues to produce more and more compelling evidence.

The chirping from South Africa rises with each specimen found in the Transvaal and particularly the Sterkfontein complex.<sup>59</sup> Eventually this becomes a roar and the world starts to refocus its eyes on South Africa as being the home of the missing link. The conversion of Arthur Kieth should be the final whistle. The age of enlightenment is upon us. This is the dawning of the Age of Aquarius.<sup>60</sup>

The Old Man is not finished with us. South Africa, about to be announced as the Cradle of Humankind, gets 1948 instead, the election to power of the Afrikaner Nationalist Government. The Guys at Intelligent Design spill coffee over the schedule of South Africa sporting results for the next 30 years. All bets are off; South Africa is banned from international sport and an academic boycott is started. No papers by South Africans are accepted. As any scholar of the search for our ancestors knows, the surrounding politics and characters are often more relevant than the human story itself. And so it is to be with South Africa. The kitchen of rationality is closed, bigotry blocks black customers at the front door and white South Africa prepares for the “total onslaught”.

The Boerewors Curtain<sup>61</sup> comes down and the lights start to go out. Reading material that is banned includes *Playboy* magazine, Andre Lloyd Webber, Robert Heinlein, Albert Camus and Marx. Adolf Hitler’s *Mein Kampf* and Jehovah’s Witnesses’ *The Child’s Guide to Evolution* make it onto the OK list. Not everyone has the special father that I have. He gets me an illegal copy of *Stranger in a Strange Land* and *Portnoy’s Complaint*!<sup>62</sup>

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59 The Sterkfontein Valley is now a World Heritage site and has been renamed the Cradle of Humankind.

60 The astrological cycles of 2156 years. Aquarius will bring “love and understanding”.

61 Boerewors is a style of sausage favored by Afrikaners.

62 *Stranger in a Strange Land* is a science fiction masterpiece commenting on religion and *Portnoy’s Complaint* is a vamp guide to masturbation.

A generation of South African academics is lost. Freidel Schellshop of the Nuclear Physics unit at Wits leads the world in isotope dating. In the time before nuclear accelerators, we isolate neutrinos two kilometers below the earth's surface down gold mine shafts. All of this is lost. Our scientists and intellectuals "pack for Perth", where they reemerge packaged as successful Americans, Australians and Brits. Evil rides in broad daylight upon the backs of giant black bats. These are dark times indeed.

Broom finds a whole new species, *Australopithecus robustus*, at Kromdraai. Louis Leakey in Kenya takes the credit. In 1949 it is again Robert Broom who finds fragments of early hominid fossils at Swartkrans, also part of the region called The Cradle of Humankind, this time associated with stone tools. The East Africans would have snatched this one too, if not for the intervention of Phillip Tobias. Later these remains are classified as belonging to *Homo habilis*. Over six hundred separate hominid individuals are taken out and categorized between Sterkfontein and nearby Kromdraai. They are stuffed away in boxes at the university. Research goes on ice.

Little Foot gets dug out by Ron Clarke, 20 years too late, not out of Sterkfontein, but out of an old box in a basement at the Bernard Price Institute. This is a fossil that could still beat Lucy and the Turkana boy. The Leakeys pick up the *National Geographic* contract. South Africa makes little to no contribution to the story of human evolution. Serious journals reject our articles and most countries ban the travel of South Africans. A new breed of racial eugenicists is installed in Pretoria<sup>63</sup> and they don't come from Wits. They have theology degrees from Tukkies and Maties.<sup>64</sup>

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63 Pretoria is apartheid's capital and has been subsequently renamed Tshwane.

64 The slang names for the University of Pretoria and the University of Stellenbosch respectively, who to their credit have today largely thrown off their apartheid past.

The Sterkfontein caves fill with water and the turn-off signs rust and become relics on the Tarlton Road to Sun City, a casino built using tax rebates from the apartheid government's plan to develop independent black states. The school trips to Sterkfontein stop and I go instead with my family to the opening of Sun City. The human tree poster comes off my bedroom wall and gets replaced with banned *Playboy* centerfolds. It is a long trip to Sun City so a consortium offers to build a new casino over Kromdraai. A mental hospital is built at Sterkfontein and over the next 40 years, it thrives.

## East Side Story

17<sup>th</sup> July 1959. Mary Leakey discovers *Paranthropus boisei*<sup>65</sup> at Olduvai Gorge in Tanzania, Louis Leakey presents it to the world to rapturous acclaim. Every shot in golf pleases someone. Sanctions against apartheid mean that coal imports from Australia increase, the Shah of Iran finds a new market for the oil nobody else wants to buy from him, Taiwan finds its first customers for personal computers and Paraguay gets to open a major new embassy. The East Africans present to the world the skull of a new species discovered 20 years earlier by Broom in South Africa. While South Africa falls apart, the opportunity for paleoanthropology is not missed by the Kenyans, or should I say the English Settlers in Kenya, or should I actually say – the Leakeys.

The Leakeys are the first family of paleoanthropology. From the early 1950s Louis Leakey and then Mary Leakey, followed by their son Richard Leakey and his wife Mauve Leakey, create a dynasty of human origins research in Kenya and East Africa. They write the book on the subject. They make famous the names of places like Olduvai, Laetoli, Koobi Fora and Lake Turkana. Richard Leakey, in particular, is a brilliant author. His books *Origins*, *The Sixth Extinction* and *Origins Revisited* keep me awake until 4 am. The soap opera story of the Leakeys alone, their political jousts, jealous misdemeanors and mammalian behavior with loose women, makes for exciting reading.

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<sup>65</sup> Boiseie, or Zinj, turns out to be nothing more than the same species found by Broom at Kromdraai in 1938. The Leakeys, with the help of the anti-apartheid movement, rewrite history to center on East Africa.

Center stage with top billing, Louis is the King Henry the Eighth of paleoanthropology and a string of wives and lovers make up the script. The side plot is the unfolding story of early man.

For Settlers, paleoanthropology is like a game of cricket. It is dominated by British ex-pats and colonial Settlers. Whereas in cricket South Africa plays against rivals Australia and in rugby we play against New Zealand, in paleoanthropology we play against Kenya. Think of us as the New England Patriots and Kenya as the New York Giants with Louis Leakey as coach and Richard as quarterback and you will start to understand the love that is lost between us.

For American readers that have lost touch with the gentleman's art of cricket, let me put it like this. South Africa vs Kenya is like the Red Sox vs the Yankees in the seven game World Series. We win the first two games with Taung and Mrs Ples. Then Kenya come back and win two with bipedalism and proving *erectus*' African roots. Courtesy of a last frame homer by Tobias, we snatch a game from behind with *habilis* and they draw level with Lucy.<sup>66</sup> While we are both taking a week off preparing for the decider, some expansion team from the little leagues in the US steals all the press with mitochondrial Eve. But all eyes are now back on Africa for the Bowl Game. It is winner takes all. One of us must pinpoint the source and timing of modern man. The world series of paleoanthropology will go to the team that delivers the Garden of Eden.

Field archeology has a sharp edged financial side. It is less about great academic intelligence and more about dogged perseverance and self-promotion. Diggings and the logistics of spending your life committed to field research is an expensive business. It is funded by French, British and American universities and popularist organizations like the *National Geographic* magazine.

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<sup>66</sup> *Australopithecus afarensis*, the earliest and most complete Australopithecus at that time.

Funding resources rely on results. You have to produce, skulls and new species and you have to find them in your sphere of influence. It makes no sense to be promoting archaeological places like South Africa or Java. You have to keep the action close at hand and inside the spending scope of your budget. Without this sufficient funding you end up like me, spending 30 years reading about what others have to say on the subject.

Controlling this finance and the keys to the office of two successive Kenyan presidents is what the Leakeys do with a ruthless and dedicated precision. For 40 years East Africa models itself as the Cradle of Humankind. For Mary's find in 1959, the question is whether it is a genus discovered by Broom in 1938, which Broom had taken not to be in the human line, or a different one. Ever the splitter, Louis, takes the high road and opts for "Zinj", a decision opposed by Wilfred le Gros Clark, but one which attracts the attention of the National Geographic Society. That contact results in an article in *National Geographic* and a hefty grant to continue work at Olduvai. Also in 1960 Jack Evernden and Garniss Curtis date the Olduvai fossil sites to 1.75 mya – million years ago. The world is stunned. Zinj is far older than anyone had imagined. Scientists swarm to Africa. Louis proves that Darwin was right about our African origin.

In 1960 Louis, his son Philip and Ray Pickering discover a dark fossil skull that he and Mary call "Pinhead." It is later included with *Homo erectus*. For many years Louis believed *erectus* was the user of the tools and *Australopithecus* was not. It is now conceded that both hominids used them.

In 1962, Ndibo Mbuika discovers the first tooth of *Homo habilis* at Olduvai. Louis and Mary think it is female and name her Cinderella, or Cindy. This is the same as the earlier finds at Swartkrans in South Africa. Philip Tobias identifies it and at Louis' request comes up with

the name *Homo habilis*, or “handyman”. It is seen as an intermediary between gracile *Australopithecus* and *Homo sapiens*.

What are we to make of this? Almost every new fossil find is given the name of a new species and then, over time, is categorized into *erectus*, *habilis*, *africanus* or *robustus*. The first half of the 20<sup>th</sup> century is constrained by British support of Piltdown – meaning we are looking in the wrong places. The second half is constrained because we are limited to the East African record. This blockage is only finally lifted with the entry into the field of the American geneticists and the coming of freedom to South Africa.

I once spent 12 hours on a flight from Johannesburg to Frankfurt with a Belgian paleontologist; I am embarrassed that I forget his name. He explained to me how he had spent the last 30 years of his life researching primate evolution in the period 55 to 50 million years ago. His primary interest was the development of the separated thumb, which led to lemurs, monkeys and apes. If you have ever injured your thumb, then you know that the ability to do simple things vanishes. You need a thumb opposed to four fingers or you can't wipe your ass, floss your teeth or even open a beer. Fact of the matter is that if we had not developed a separate thumb 50 million years ago, the mayor of New York would today have his office in the sewer with all the other rats. The rest of us would be trying to catch salmon with our claws and chopsticks would still be in the trees. The bare necessities of life would come to us. Instead we are the king of the swingers, the jungle VIP, we've reached the top and have had to stop, and that's what's bothering me. There is no Vector of Evolution.

The difference between Baloo and King Louis is all in the marketing. The one paleoanthropologist is a household name, goes first class to all the conferences and gets banging rights on all the girls in East African anthropology,<sup>67</sup> the other travels economy with a name

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67 My barb at Louis' famous infidelities, usually conducted from the comfort of his

I can't even remember and has to sit next to me for 12 hours, where he gets no action at all. I don't want to take away from the East Africans, particularly what the Leakeys did. Analyzing bipedalism does rank up there in importance with getting a new thumb, but they do make heavy weather of it.

The Kenyans take 50 years to reinvent what has already been done in South Africa. The academic boycott and subsequent lack of funding means that the South African research is ignored. The only South Africans welcome in Kenya are the ANC. This keeps back progress on many vital issues. Millions of people die without seeing the Garden of Eden, because once again we are looking in the wrong place.

To understand the extent of the problem, you have to realize just how sparse the East African hominid bone record is. They say that if you put together all the African hominid bones collected before 2000, they would fit on a single large museum table.<sup>68</sup> That little, for 60 years of work shifting bones from the sand. When Donald Johanson describes Lucy, *Australopithecus afarensis*, you would think he was looking at a detailed Egyptian mummy with organs intact. When you see Lucy laid out on a table, the most complete *Australopithecus* in the history of science looks a few beers short of a six pack.

This sparsity of bone material gives the splitters their day in the sun. Every fossil hunter who finds a bone announces a new species. Even before I find my skull chip at Taung or my tooth fragment in the Sterkfontein school excursion, I have already named it *Australopithecus philipi*, and it's not named after Professor Phillip Tobias, it is named after a far better looking modern specimen of Philip. I take the piss out of a lot of holy cows in this book, but my top drawer venom is reserved for splitters.

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Christian marriages.

68 I never did find out who first said this; it is clearly untrue. However the reality is not much better than this; the hominid record is truly sparse.

In the name of their own egos and own financial benefit, splitters drive the whole science of paleoanthropology into a bone-hunting and subspecies naming expedition.

Human history is really dead simple – walk bipedally, use hands, adapt to multiple environments, develop a big brain, adopt social skills, kill millions. The exact anatomical nature and number of species and the relative ratio of their occipital lobe to penis length is really is not that important. Paleoanthropology is packaged as a bone-collecting road show.

The Carnivore is a famous restaurant outside Nairobi. You can gorge yourself on a menu of 13 different types of game meat, giraffe and crocodile included. As a vegetarian I order a potato salad.<sup>69</sup> Paleoanthropology makes a 50-year East African banquet meal over what is actually a scientific snack. The tree from common chimp ancestor to modern man is really quite simple. *Australopithecus – habilis – erectus – sapiens*. Talk about African time! It is a dark taxi ride back from The Carnivore to Nairobi.

The academic boycott seeks to isolate South Africa by excluding it from the research community. In supporting the academic boycott, paleoanthropology almost loses the services of one of its greatest sons, Professor Philip Tobias of Wits. A gentle, effeminate man, who spends his entire life in research and education, can hardly have been further from a being a conspirator with the homophobic apartheid government.

Africa provides Tobias with a unique set of opportunities, including some severe non-scientific challenges. During his student days he is active in the leadership of the National Union of South African Students. Nusas is a front runner in criticizing the apartheid regime and is the frontline of resistance.

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<sup>69</sup> It is one step ahead of Germany, where even the potato salad has bacon chips.

Tobias is unrelenting in his pursuit of justice for all South Africans. He supports human rights and protests against unjust laws within South Africa. Much of his work is carried out at a time when South Africa is viewed as a pariah of the international community and although he is offered opportunities to work elsewhere he remains deeply committed to South Africa. He cannot see himself “as being party to handing on a series of shoddy and emasculated institutions to the future non-racial South Africa”.

Philip Tobias is well known for his campaign against the imposition of restrictions on the academic freedom of South Africans. This culminates in the exclusion of South African scientists and foreign nationals who work in South Africa from the World Archaeological Congress in Southampton in 1986. He will not accept the possibility of personal exemption from the boycott because of his own political record.

To Tobias, what is at stake is the integrity of the scientific process. Science is above politics. This is our religion and Galileo is our first prophet. Scientific truth is not beholden to the political correctness of the day. Science is carried out by individuals and individuals in science should be dealt with independently of their political stance or that of their governments.

For the majority of his career Tobias is the leading authority on pre-human anatomy. His breakthrough work, for which he is reluctantly recognized, is on *Homo habilis*, establishing the link from *africanus*. This seals the continuous line of evolution from three million years ago to the present. The Swedes should have given Tobias a Nobel prize, instead they have Oliver Tambo to dinner.<sup>70</sup> I have nothing against politicians and I sincerely appreciate what the ANC did for South Africa. Politicians are a very important part of our social system – clap, clap, clap.

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<sup>70</sup> Oliver Tambo is the leader of the ANC in exile, number two to Nelson Mandela.

After complements are duly delivered, politicians are simply everyday people who have a talent for after-dinner speeches. Politicians, even great ones, are found aplenty. Finding great paleoanthropologists is like finding *africanus* skulls. There are only one or two per century. It would make me proud to land at the Philip Tobias Airport. I learned more in a two hour lecture from Tobias than from reading all of Richard Leakey's books. No one who has ever seen Tobias do his *Australopithecus* walk can ever forget him.

Are Settlers pissed off at the Leakeys and the academic boycott of South Africa? Is the Pope a Catholic? Are the Kennedys gun-shy? Of course we are pissed off. If you are not versed with recent South African history, this may sound strange to you, but like many of my generation, I do not apologize for apartheid. I had little to do with it. Apartheid is history. I was five years old when South Africa declared itself a white republic. I could just as soon apologize for the holocaust or the massacres in Rwanda. From the moment I was able, I sided with the liberators. We are the first generation of South Africans to turn against our own fathers and disown 150 years of racial conflict. It is rather we who now feel aggrieved that the current South African government continues with racist policies into the 21<sup>st</sup> century. Louis Leakey of course has nothing to do with colonialism; after all he is an "adopted" member of the Kikuyu tribe.

"Nationalism is the measles of mankind" – words of our last great prophet, Albert Einstein. We are scientists first, *sapiens* second and then you can start bringing in your petty cultural divisions. Politics is the opiate of the masses. We are the priesthood of knowledge. Science is above politics. If a kid from North Korea cales a rational value for the square root of two, we don't hold Kim against him.

That is how we Settlers feel about the suppression of truth. The fat lady has not yet sung the *Australopithecus* aria. Today, finding the source of *Australopithecus* is like finding out that communism does

not lead to optimum economic output. It is not that relevant anymore, but do not be surprised to find out that this source is Johannesburg and not the Great Rift Valley. I may sound just like the Fascists that Einstein abhors, but this is not about a country, it is about getting to the scientific facts. These facts point to a southern beginning.

This is not to say that Settlers were out there burning down barricades in the political struggle. For the first years as a member of the PAC I meet no other white people in the organization. My own participation was confined to a Schindler<sup>71</sup>-style activity of computer espionage, shielding young white men from military service. Tobias's view that breaking down South Africa will not help resolve the conflict is by and large the Settler's position. It is certainly mine. It is a time of compromises. However, Nelson Mandela, the ANC and a succession of Afrikaner bureaucrats dragged out reconciliation 26 years longer than it should have taken. While they argued, South Africa may not have burned, but it certainly smoldered. If they had listened to a 15-year-old schoolboy with a passion for paleoanthropology, we could have sorted this out a whole lot faster.

White Africans do not "blend" into the background of Africa. We can't even play the music. I am a double bass player. I can play jazz at 180 bpm and play classical music at *molto allegro*. In any group of musicians playing I will soon be the one holding the beat. But this is not possible in African music, because the beat is not counted, the rhythm is felt with the soul. Africans will tell you that white people have no rhythm or soul. I once found myself *toyi toying* in a township with 3000 members of the PAC.<sup>72</sup>

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71 Schindler is the Nazi made famous by Stephen Spielberg, who saved Jews from the death camps by employing them in his business. Our situation was nothing like as bad as WW2. Ducking military service would get you arrested and fined, or imprisoned, not executed.

72 *Toyi toyi* is a South African hip hop dance style used at national occasions and protest meetings.

What made me stand out was not that I was the only one there with a white skin, but rather that I was the only one clapping in time, while the other 3000 dancers couldn't keep the rhythm. Don't go there Louis, it is not a pretty sight.

To a white African there is nothing more embarrassing than watching one of our own wear a dress and beads, talk a click language and pretend to be a pale black African. Settlers are proud of our race and our heritage, no matter what history has dealt us. Our claim to Africa is irrespective of our own culture. We are not black and neither are we Afrikaners and we regard ourselves as as different from Afrikaners as we are from black Africans. We are Settlers. Paleoanthropologists and most academics of this period are exclusively Settlers and almost universally opposed to apartheid. We may be too cowardly to stand up and be counted, but we are definitely *opposed*.

The Leakeys are Settlers like us. Louis Leakey worked for the Kenyan police as an informer against his own "adopted" Kikuyu tribe.<sup>73</sup> The East African paleoanthropologists know the politics of Africa, and particularly the role that Settlers are forced to play. Kenya functions for most of this period as a one-party state. Ethiopia has a shocking human rights record for most of the independence years. This never stops any expeditions taking part in those countries. It never enters the equation, because it is not in the interest of promoting the East African Hominid Road Show.

For Settlers, even something as inhumane as Afrikaner apartheid is a one-day game. The real test match is human origins. Paleoanthropology is not a supporter of apartheid, nor in general is the scientific community. Even though we fight the

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<sup>73</sup> My barb at Louis. I too have spent much time with black South Africans. You can be their friends, their lovers, their compatriots and teammates, but a white man is marked forever by his skin color in Africa. Your tribe, Louis, is Settlers and you best get used to it. "Adopted" – phooley – fostered maybe.

political battle from within South Africa, the Leakeys never make any attempt to help or lend credibility to the South African research community. The Leakeys and their backers regularly trash the quality of the South African fossils, while we in turn have no forum to answer their allegations. They dismiss Sterkfontein, the richest hominid site in the world, as an “unstructured dump”. Even in the blanket ban of apartheid, real men are able to see through and reach behind the curtain. It is a cold war and we all make compromises. Supporting paleoanthropology would have helped to break apartheid, not prop it up.

The harsh reality is that it suited the Leakeys to have a monopoly on human origins. To her credit, Mary Leakey, alone, breached that gap when she accepted an honorary doctorate from the University of the Witwatersrand in 1968. She must have felt much as I did lining up against 50 Nigerians in a Gridiron Football Game in 1988.

Tobias’ fears are realized in a way far worse that even he could imagine. Apartheid’s loss from the lost generation is not economic and social loss; we have already had partial recovery from that. The loss is the devastating spread of creationism. In 50 years of living in South Africa I have never met a single black South African that is strongly against creationism. Please let this change. Brother, if you are out there reading this, come forward because I long to embrace you.

Creationism and scientific ignorance is the true legacy of apartheid and the academic boycott of South African paleoanthropology.

From the 1990s a new breed of fossil hunter enters the East African race, well-funded American teams. They bring a renewed interest in the subject and today they dominate proceedings. They also bring with them a new style of academic politics that changes the way the game is played. Paleoanthropolitics reminds me of the desktop wars in the software business of the 1990s. It is a measure of the changing sands.

As money enters the business, fossil finds and the funds that flow from them take on a new importance that transcends the search for truth. The American teams scour the Rift Valley looking for new evidence to fill out the human tree. It is a storm in a teacup, because the real answer lies 5000 kms southwards.

Forty-eight percent of Americans believe that man was created more or less in his current form from less than 10 000 years ago. To most of us reading this book that is laughable. The bulk of East African research, and it is millions of dollars, goes to searching for the “missing link” between man and ape. The last 10 years are about covering the period four million years ago to seven million years ago. We are spending all this effort to cover the gap between chimps and man. Have we found the missing link? If you are still asking this question, then no amount of fossil bone is will do it for you.

The whole East African *paleoanthropology* seems dreadfully unpleasant. Researchers stake out their claims and restrict access to each other. Every find by another party is viciously attacked. Anything from South Africa is doubly attacked. Goals seem to be more about career reputations than the search for answers.

Tim White is the big enchilada in East African research. After Richard Leakey breaks his legs and abdicates his position, an American quarterback steps in to lead the East Africans. Up front White vehemently denies that there is any East African conspiracy against South Africa. So already *there is a war between those who say that there is a war and those who say that there isn't*.<sup>74</sup>

Tim White is the world's leading paleoanthropologist. He has a stunning record in the field and in the journals. He is integral to the Berkeley Department and influential in the fund raising and operations of the East African digs. He is vehemently loyal to his Ethiopian hosts.

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74 The words of Canadian poet Leonard Cohen.

White describes his colleague, Berhane Asfaw, as Africa's most successful anthropologist. He seems to have forgotten Leakey and Tobias, or perhaps he means that Jews don't qualify as Africans. There is just no getting away from it. It may not be a war, but we are in the world series now and South African and East Africa are in the finals. We like White like New Yorkers like Tom Brady. Admire White as much as we like, the fact is, he plays paleoquarterback for the other side. Simply put, we would rather see him on his ass than tossing the ball 40 yards downfield.

One of the things that make the NFL the greatest show on earth is that it is dynamic. The draft pick ensures that the weakest team in the league gets the best new college players. The Americans have brought this culture to African paleoanthropology. South Africa, the weakest team in the '80s, gets Lee Berger. He comes as a free agent to an unpopular destination, but rises quickly to take the retiring Tobias's position as head of Wits School of Paleoanthropology.

Lee Berger has been responsible for driving much of South Africa's post-apartheid boom in paleoanthropology. White describes this as "a new era: one of smoke and mirrors, in which style triumphs over substance". He goes on to attack South African paleoanthropology as being dominated by whites and having no black doctorates. At least there we are in agreement. Human origins has always been a Settlers game and is likely to be so in the near future.

The door to paleoanthropology is open to anyone to join, but Afrikaners and black Africans generally don't. They suckle on their European God and ancestor worship. If the American

paleoanthropologists spent more time in Africa, they would understand just how much of a heresy the paleoanthropological models are to the majority of Africans. This is the legacy of the East Africans from their time with the monopoly on human origins.

Tim White may be our leading latter-day prophet, but he is not perfect. His power base is Berkley and the Ethiopian Awash deposits. He makes political moves that are alien to me. He releases a list of recommendations to students including statements like: “Do not purchase fossils”, “Do not bribe officials,” “Do not steal another person’s site,” “Do not let ambition distort your ethics. If your career goal is to make a fortune, go to medical school, become a knee surgeon and practice on suburban soccer players.”

White turns away researchers who have flown all the way to Ethiopia to see his fossils, because he thinks they might be “salon anthropologists” or “trying to profit from the industry”. White announces *Ardipithecus ramidus* and then won’t reveal the fossils for inspection for ten years.<sup>75</sup> He is particularly scathing of “careerist” anthropologists, who spin stories about human origins. I guess that this writes me off for a look at the fossils.

Given our respective backgrounds we should get on like Borat and the Jewish Women’s club; however, White remains a dedicated scientist and is without peer the current leader in the field. I have never met him, but more than any of the other experts that I have approached, he is responsive and engaging and passionate about the African story.

What is written about Tim White is that he brooks no fools who are not prepared to give up years of their lives scratching around in the dessert looking for bone fragments. If you can’t do your years of hard time on the ground then don’t expect to be allowed into the hallowed

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<sup>75</sup> See *The First Human* by Anne Gibbons, an up-to-date account of the politics of bipedalism.

halls of enlightenment, and certainly don't think that you can be like Einstein and ponder quantum theory without putting in years first at the CERN accelerator. The CERN accelerator is not far from Einstein's job at the Swiss patent office, just separated by 50 years.

All Einstein would have to do is go to Sirius and back at just under the speed of light and come back younger than Tim White and the Ethiopian government officials.<sup>76</sup> Haven't these East Africans read about the division of labor and David Ricardo's theory of comparative advantage?<sup>77</sup>

The problem with White's approach is the secretive manner that seems to be the norm for the East African style of paleoanthropology. Discoveries are kept quiet until they are ready for scientific publication. Access to data is restricted to the inner circle. The rest of us wait outside the party until someone comes out to take a leak and feeds us scraps, even if it takes him ten years to do it.

An unidentified source refers to the Awash research as "The Manhattan project of paleoanthropology". Whatever happened to the idea that more heads are better than one? The search for human origins is not the restricted property of some team that has arranged a digging permit. It is no wonder they don't award a Nobel prize for paleoanthropology. White defends this style:

*This is the way that data are assessed and published in science. There is no laboratory in any branch of science that I know of that allows amateurs, journalists, playwrights, or competing scientists pre-publication access to experiments and experimental data as they are under way ... .*

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<sup>76</sup> Einstein's special theory of relativity proves time is relative and dependent on movement, opening the door to time travel to the future.

<sup>77</sup> Division of labor is Adam Smith's theory and David Ricardo is also a British classical economist. Comparative advantage shows that trade always benefits both parties even when the parties are completely unevenly matched.

White is not alone in this aggressive style of science. *Australopithecus bahrelghazali* is found by Michel Brunet. It is announced as the first *Australopithecus* west of the Rift Valley, yet Brunet *et al.* have locked the fossils away from the eyes of others. They must be worried that someone might see something they have missed or come up with an independent conclusion about “their” fossil. Chaps, I know that you don’t have the benefit of a Settler’s upbringing, but this is simply not cricket.

White, Brunet and I come from very different scientific worlds. For White his currency is academic papers, peer review and the individual’s career rights. I come from the “shoot from the hip” world of open source software. Careers are not important. For me it is about saving souls. It may be important to check and recheck every fact and then file it in triplicate, but in the meantime millions of people are dying with the full belief of creationism on their lips. As you read this, they are in the afterlife standing along side Pascal and all the other wagerers, outside the green fields of Elysium<sup>78</sup> arguing with security that their only sin was to genuinely believed that the Truth and the Light meant some apple-eating bimbo with a fondness for snakes. Too bad, no one comes into the kingdom but through the Truth.<sup>79</sup>

White puts this negative view of him and paleoanthropology down to believing third-hand sources. There is no such thing as limiting access, he says. Paleoanthropology is in the minds of journalists trying to sensationalize the profession.

*The skull of Ardipithecus will be published when the reconstruction is finished and the scientific analysis conducted.*

*This is the way that data are assessed and published in science.*

<sup>78</sup> In Greek mythology, the Elysian fields were the final resting place of the souls of the heroic and the virtuous.

<sup>79</sup> With apologies to John 16.

*There is no laboratory ... that allows ... access to ... notebooks recording those data prior to the time that the experimenters have finished their analysis and published them. Different kinds of science proceed at different rates due to a myriad of factors.*

Yes, I do want us all to throw open our notebooks! We all stand on the shoulders of giants and none should hold on to information until it is “ready” to be given out. If it is freely distributed, we will very soon discover who can use and can’t use the data. There is no such thing as someone “misusing” information. Maybe they say what you don’t want them to say, maybe they take credit for your work, but this is not “misusing”, and it certainly does not restrict the flow of knowledge.

This is not a personal attack on White. It is an attack on paleoanthropology itself. White just happens to be the best at it, with his nose stuck out the furthest. If you want to beat an offense, sack the quarterback. If you want to beat paleoanthropology, sack the paleoquarterback. To show you how different the world could be, we should introduce all paleoanthropologists to the open source website, [www.sourceforge.net](http://www.sourceforge.net). I have been working in the open source software community for a few years now. We work under a free software license, which stipulates that all information is obliged to be returned immediately to the broader community. It is an eerie experience taking work that you have toiled over and handing it out under a free license. I can identify with fossil hunters that feel that the fossil is “theirs”, but the truth is, ownership is universal. We all stand on shoulders of giants. Without previous publications, modern fossil hunters would be like Dart, not really sure what a hominid is.

Under open source, all information is available to all of us, instantly, as a free download. For me, fossils don’t belong to their finders or to the governments that own the land in which they are found. They belong to all humanity and universal access at least to the data, obviously without damaging them, should be obligatory.

Selective access, only to those that are intellectually pure? Sounds like Herbert Spencer and the fellows of the Royal Society.

East African paleoanthropology is littered with squabbles and firefights.<sup>80</sup> The Ethiopian government won't release fossils and even sets an eight-year ban in place, from 1982 to 1990. Some upstanding official obviously believes that these national treasures belong to his country only and the rest of the human race has restricted rights to them. One wonders if *Australopithecus* carried his passport with him when going on hunts.

White feels that I am disrespectful to the Ethiopian government and its people. He may be right there. I live in South Africa, where we have the liberty to openly criticize our own government and president. It is something we do daily. It is our way of knowing that this freedom still exists here. If I criticize my own government, I will certainly hit out at other Africans that do not live up to this standard. *The Economist* describes Ethiopia is a "hybrid regime" situated between a "flawed democracy" and an "authoritarian regime". On a scale of freedom it sits between Cambodia and Burundi. Kenya is not much better. These self-styled guardians of human origins can pass laws controlling the access to fossils, but they can't pass laws guaranteeing universal access to freedom.

With the boot now on the other foot, how would East African paleoanthropology feel about a ban on publishing any academic works coming from those countries? Is it easier now to imagine how we felt in the '80s and '90s when East Africa paleoanthropology called for a block on South African papers.

Picture me writing a letter to *Nature* asking them to block all articles on human origins, including those of visiting Americans, coming out of Kenya and Ethiopia because they can't run a

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<sup>80</sup> I use the term East Africa to mean all the countries in the region and not in the colonial sense of the old Kenya.

democracy. The academic boycott was one of the key reasons that many left the academic profession in South Africa.

If you can look over the barricades and through the smoke and flames, the biggest of the recent advances does seem to come from White with *Ardipithecus ramidus*. French researcher Burnett in Chad makes a Five and a half million-year-old find, *Sahelanthropithecus*, and breaks up the “East Side Story”. Louis Leakey hypothesized, incorrectly, that the Rift Valley put the gorillas into development on the west and the hominids into development in the east. This no longer seems to be true. A find by Martin Pickford in Kenya, *Orrorin tugenensis*, promises to be the oldest find, but yet again there is also a string of politics that keeps the data from being fully revealed. It is a whole lot of effort looking for a monkey without a tail bone.

Pitldown left the door open for the creationists to keep evolution out of schools and out of mainstream thinking. The ape lineage should have been agreed on long ago. Similarly, by keeping South Africa out of the world body of knowledge we were looking at the wrong problems. East African hominid research is basically bone collecting, and bone collecting where personal and country status seems to be the first prize. The aim should be to first have a picture and then take the rare bone pieces and put them together to make the big picture. It is like making a 3000-piece jigsaw puzzle, but without the final picture to work from. Anyone that builds jigsaw puzzles knows the drill. First pick out the 4 corners, then do the sides and build inwards. Don't just start grabbing pieces and trying to fit them to other random pieces, but that is the modus operandi of the East Africans.

Let me explain research funding. I have been developing accounting software for 20 years. My product is TurboCASH Accounting. At first we made programs and then we had to build organizations to support our users using them. At first the companies with the best support organizations won the market. Over the years the

users have become more literate and with the right research, the programs start to get so good that they work without problems.

If you use a spreadsheet, you just use it, you don't have to call a support company to help you use it. Accounting software should be no different, right?

However, if you own a software development company that lives off the revenue from a program that needs support, you have a problem. A better program means you either have to get rid of your support organization or you have to keep putting out software that needs help. I chose the former route, to market the software free and open source and focus on making it free of support. I use viral marketing to promote it. My competitors stay with the latter strategy, high price, high support, high marketing costs to keep telling you how much you actually need support, and what a good idea it is to spend your money with them.

That is how it is with East African hominid research. They have built organizations that need to find bones. The bones must get older and they must discover new species. To discover new species you need splitters. To get older than four million years and get to the moment of bipedalism, you have to go to the four million to six million years period. That is found in Ethiopia. The terrain gets really harsh and the government is bolshie and trigger happy.

Paleoanthropologists need problems that need bones as answers. They keep chasing bones, even though the overall science has changed. Such is the nature of the lower Rift Valley structure, that the bones it throws up are from around 1.6 million years old to 3 million years old. This is the time spanning the Habilines. Creationists mock us that we can't pin down the transition to *Homo sapiens*. One possibility is that this transition may not actually have happened in Ethiopia, but horror of horrors, in South Africa.

This species, that species, it doesn't really matter anymore. All the fuss is effectively explaining bipedalism. I have never found a hominid fossil in my life, yet even I can explain bipedalism.

Da footbone connected to da shinbone, da shinbone connected to da kneebone, da kneebone connected to da thighbone, da thighbone connected to da hipbone – *Gonna hear the word of the Lord!*

With paleoanthropology not having a unified message we have invited the creationists in for tea and let them show our children a copy of the Watchtower's *The Child's Guide to Evolution*. They offer immediate and eternal salvation. We offer a whole lot of ifs, buts and maybes. We scientists regard ourselves as the bright ones, but it is they who are filling the collection plates with the folding stuff. Our best scientists are treating suburban soccer players.

Understanding the industrial nature of hominid research is key to understanding its progress. Microsoft does not advance the fortunes of computer technology, it advances the fortunes of Microsoft. So is it with hominid projects. Sure it is about technical analysis, but it is also about funding and protecting the turf that is established. Think I'm kidding?

Read through the literature and you will notice a complete dearth of negative articles. It is hard to find articles saying,

*We have reassessed our results and revised the age of the fossils downwards. We now conclude that they are not the oldest of their type found ... and in the interests of research, we declare that these bones are not really important at all, and think that it would be much better to review the South African data.*

It is a media war of competing press releases clambering over each other to establish "progress" and justify the financial extension of the current project. It is no wonder that 48% of Americans believe in

creationism. God may work in strange ways, but he does not withhold information.

Look at any splitter's diagram of the human tree and there are always dotted lines and horizontal arrows at the *Australopithecus* and *Homo* transition. 50 years of East African research, with the largest teams of the cleverest guys on the planet, and they can't join the dots.

Right through the nineties the lineage of *Homo* is dominated by the tall shadow of the Lucy skeleton, *Australopithecus afarensis*, discovered and described by White and Donald Johanson. Lee Berger happens to point out that something is missing in the dotty area between *Australopithecus* and *Homo*. It is a long debate, summarized by Berger's words, "Long arms and short legs". The difficulty is that Lucy has short arms, *habilis* has long arms, early *erectus* has long arms. So if we were to evolve from Lucy to language then there would have to be a step backwards to longer arms and then a reversal back to shorter arms for *Homo*.

This would be most unusual in evolution. Berger points out that this is not a paradox if *africanus* is substituted as the ancestor for *habilis*. In most debates this would not be a particularly contentious hypothesis. But there is one small problem with this thinking; *africanus* is found only in South Africa and not anywhere in East Africa.

The implication is too horrific for the East African establishment to bear; we would have to relocate the home of the missing link to Johannesburg, with the Rift Valley being an afterthought. In Nairobi business could fall off. The functions manager at The Carnivore offers to put monkey onto the menu.

Long arms and short legs is a rather interesting hypothesis, one that should surely solicit financial and logistical support from the paleo-anthropology community. Uh-uh.

Instead White writes:

*American-born paleoanthropologist Lee Berger, a relative newcomer to the South African scene ... Dart, Broom, Hughes, and other now deceased giants of South African palaeoanthropology are spared the embarrassment of reading the revisionist history and fact-trampling. ... [Berger] reveals to the world that South African scientific and academic standards are dropping to the point where ambition, politics, and access to money can substitute for scientific competence, thereby damaging the very core of ongoing research and jeopardizing its future. Never before in its long and distinguished history has South African palaeoanthropology stood at such a critical crossroads.*

For those of you not versed in the eloquent verbosity of scientific critique, let me translate this for you. What White is saying is that while we are licking the East Africans' asses and watching them repeatedly put the ball down behind our goal line we are welcome in the debate over human origins, but if we should so much as dare to suggest that the real truth may actually lie somewhere other than the Rift Valley, then we should not be surprised to find a new soft pinkish meat on offer at The Carnivore. I think he was alluding to veal, when he talks about a youthful Berger being a newcomer.

To White, Berger

*poses as a South African Leakey, but without the experience, the family history, or the scientific accomplishments. This*

*enthusiastically ambitious but inexperienced American is attempting to lead the way for South Africa.*

I guess White sees Berger as a neocolonialist Indiana Jones stealing treasures from the natives. White needs to spend more time in South Africa. It is very different from the Africa that he is used to. We have a strong, intelligent government, an active investment community and a strong academic environment. We are not about to get bamboozled by an American accent. Berger is a rainmaker for paleoanthropology and he has brought new life to our research efforts, but like it or not, he has got a very good shot at dumping Lucy off the main branch of the human tree.

Even Intelligent Design gets in on the act. An email is sent from engineering in the crucifixions department, saying that they are also unhappy with Berger and have been measuring him up. They want to know if he is sticking with long arms and short legs.

No vampire can enter your house unless you invite him in and they are easy to identify because they cast no reflection in a mirror. Support for Berger comes from an unlikely and not fully welcome source. Of course they are not trying to help Berger, but creationists also target Lucy and the problems in the Lucy *Homo* lineage. The fact that this fit is not clearly defined gives the creationists all the fuel they need to create their own smoke and mirrors. The fact is that we invite them in here simply because we can't agree between ourselves on the details of keeping them out. There is a very real possibility that the human tree could be solved with the right research effort in South Africa, and in an open source world this would be encouraged not attacked.

If I have mistakenly given you the impression that I am a South African nationalist and our paleoanthropology is without its politics, let me correct this right now. For it is not the individuals who are all guilty, but the profession itself which stands accused. Even Tobias, the

giant of latter 20<sup>th</sup> century South Africa, gets the chance to prove that he is not fully bipedal.

Paleoanthropology is about building as much credit as you can for your reputation. This is the scientist's quest for immortality. Immortality, of course, is only gained in the afterlife, working an eternity at Intelligent Design. Immortality comes only after you have spent a millennium learning the trade. The first 100 000 years is spent managing junk DNA for the 750 000 beetles found on the planet. The Old Man just loves beetles.

As time is limited on earth and no one gets credit for the eternity they put into the afterlife, paleoanthropologists are always struggling with the beastly problem of trying to claim credit for other people's work. I am particularly sensitive to this in other people, as it is no different in the software business, where I personally have made a career out of taking credit for other people's brilliance. This is what a software boss does.

James Kitching, Alan Hughes, Ron Clark, Andre Keyser, Nkwane Molefe and Stephen Motsumi are the unsung heroes of Wits. In the dark years they keep the digs open on very badly funded budgets and work tirelessly through the years of the academic boycott. Tobias and then Berger are out making the speeches and having dinner with the president. It is the others that are underground, coughing out variations of cave disease. From all accounts the unsung heroes are bitter about the sung heroes. It all comes to a head in the account of Little Foot.

It seems that Berger and Tobias are just as guilty as White et al in withholding information. It is so endemic in the profession that they can no longer see the problem themselves. Berger recalls the discovery in 1989 by Alan Hughes of a 600 cc *Australopithecus*, Stw 505: "At the time this was considered a surprising result, but for some

reason Tobias did not want to publish this hominid fossil; it sat in the safe for years.”

Somebody stop me because I just don't get it. How can Tobias decide “not to publish”? What reason could you possibly have to “not make” information available to everyone and particularly the scientific community? Surely the solution, with an uncategorized fossil, is to take some photos, make some castes, do a 3D scan and make the coordinates available in an open XML format so that anyone can reconstruct a 3D model and make just what they will of it. I don't care if it is true that all fossils are decoys put there by Intelligent Design, the only explanation for your withholding information is that you have some ulterior, personal motive. It is like picking the seam of a ball in the overnight period in a test match. Isn't there something immoral about sticking a fossil away in a safe?

For Berger, you don't even need testimony; he buries himself in his own words, and shows himself guilty of the same splitter thinking.

Describing events when Ron Clarke finds Little Foot, he says:

*He wanted to announce the find immediately, I felt strongly that we should excavate the rest of the skeleton, find out what the damn thing was and only then make a public statement. I tried to explain to him that the specimen was too important to rush into a media circus without understanding what it was.*

Why not just “publish immediately” and let the public decide for themselves what the damn thing is. I have to believe Clarke got it right when he said of Berger, “I found Little Foot and then Phillip Tobias

took the credit; now you are going to try and take the credit for my latest fossil find.”

I am not taking sides here. Paleoanthropology is a multi-disciplinary affair involving many professionals including accountants. I choke when I have to admit that this kind of thing goes on in our own home team lockerroom. What Clarke was trying to do was take the credit for the touchdown without acknowledging the work of the offensive line or the fact that it was Berger that threw him the ball in the first place. Whatever happened to the quest for truth? When did announcements become more important than truth?

The whole *trebel* comes to a head with the discovery of the Little Foot skeleton.<sup>81</sup> Ron Clarke's *tsorus* makes him a disgruntled sulk as Tobias takes all the glory for Clarke finding Little Foot in a box of bones in the University basement. It is a *nebbich* when Clarke starts coming in late for work, misses deadlines and keeps fossils in his safe at home for years. Berger is appointed by Tobias as his successor and Tobias retires. The baton is passed from one generation to another, so you would think.

Clarke's indiscretions are brought to Berger's attention and they keep mounting. Eventually under pressure Berger fires Clarke. This is not New York where they take your keys and security walks you out that morning, or East Africa where they put you in front of a firing squad; we are kinder than that in South Africa, so Clarke continues working under notice.

Three months before his termination, Clarke shows Berger Stw 573, possibly the oldest and most complete *Australopithecus* skeleton ever found and about to come out of Sterkfontein. Stw 573 is the rest of the skeleton that attaches to Little Foot. The credit of mixing, coordinating and finding the two matches goes to Clarke. However,

<sup>81</sup> *Trebel* is a Yiddish word for a fight amongst peers, usually between Jews over money. A *trebel* is big, huge, but outsiders cannot usually understand the issues. I leave you to look up the other Yiddish words.

ten years later, like Michael Angelo's David, Stw 573 is still not out of the stone. Shades of *Ardipithecus*.

Clarke is clearly out of line keeping the find secret from his employers. His explanation is that previously Tobias had stiffed him and taken the credit for Little Foot. He doesn't want this happening again. If this was IBM or Microsoft, Berger would not even let him go back to his desk, security would check him out in 10 minutes.

This brings me to my Golden Little Foot Award for *schmedrick* of the Year, 1998 and it goes to Tobias. Tobias could have spent the rest of his life giving guest of honor dinner speeches. I am not calling Tobias a *rachmonis* case, but when Clarke calls the retired Tobias at the old age home and tells him what a *gunnif* Berger is, and drops the info on the Stw 573 fossil, you would expect Tobias unequivocally to support Berger, put the phone down and finish his soup. Uh-uh. Tobias still has the *seigel* to see what this find means, and has the *gutspah* to do something about it. Charged with the energy of splitter adrenaline, Tobias rips out his catheter, stows his wheelchair, packs away his pajamas and heads for Wits where he makes a deal with the "Gang of 7"<sup>82</sup> to get himself reinstated as head of Sterkfontein. It is even rumored that he buys himself a new set of helmet and pads and is going to come down and try out for the Vikings. Clarke and Tobias get *nachas* out of sending Berger an invitation to attend their press conference where they announce the "single most important paleoanthropological find of the 20<sup>th</sup> century."

Tobias persuades the University to rehire him, split paleoanthropology and push Berger sideways. Tobias gets Sterkfontein and Berger gets the Bernard Price Institute. Berger gets named "Idiot of the week" by the Sunday Times for unjustly embarrassing Clarke, and finds out that life for a white man in the

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82 The term used for the mythical society of white professors that still run Wits even after the ANC put some of their party members in charge.

republic is not always easy. It is no wonder Americans find it hard to extend us goodwill or financial credit. Shortly after the announcement, Tobias starts to feel pain in his lower back and remembers why he retired in the first place. Berger manages to regain control and can at least call his own plays in the huddle again. Saying that Berger did not find Little Foot is like saying that Bill Gates did not write Windows. Taking the credit is the boss's prerogative. When the chips are down between the suits and the dungarees, the suits always win.

Berger, like Tim White and all the other splitters, is completely pathological when this topic comes up. In the light of day, when the hair and teeth have receded, the darkness clears, they claim to be lumpers and genuinely believe it. This is how Berger explains it:

*I have long been a proponent of open access to fossils. Even unpublished ones. I have put that in print and have never refused access to a specimen. Maybe what is not clear in those passages written many years ago is that just because the specimen was under study and being prepared – it would have not been allowed to have been hidden from other scientists – under the policies I had in place at the time scientists would have been allowed to examine the material. I am not Tim White who only allows his small team access and that is a fact substantiated by any visitors to our collections. It was largely my driving that had the most advanced curation policies passed at this university that now says that no scientist can keep a specimen from other scientists beyond an in total 7 year period. After an initial 3 year period following a discovery the scientists must write an appeal to a committee as to why the fossil should not become public. If successful the scientist can get up to another 3 years extension of rights. At the end of that time period the scientist can appeal for a 1 year 'writing up'*

*period and then that is it. While it's harder than you might think to put that into practice, the fact is at least it's in the rulebook."*

Seven years to hide away a fossil? Come now, fossils belong to *all* humanity, and access, subject to protection from vandalism, should be universal and instant! I believe Berger and White are genuine in the desire to be open, but they still have a way to grow up. I would still prefer not to share a tent with either of them on a field trip at full moon.

And as for Little Foot itself? We now have the situation where *the* most complete hominid fossil in history is viewable only by Ron Clarke and his close associates. A whole generation of paleoanthropologists has graduated and left the profession without seeing it. A professional team would have brought it out in a year. Tobias can't bend down to get into the cave mouth and Ron Clarke is in no hurry to get it out. What would he do with his days when it is out? So another year goes by and another millimeter of Little Foot is shown only to the inner circle. The rest of us wait outside the party, like the lower members of the San tribe, our bowls ready to catch the drops when the drug filled privileged come out to relieve themselves outside on the veld. Paleoanthropolitics!

Serial killers always blame the Devil for making them do it. Similarly you can't blame Tobias. Like any paleoanthropologist, there is a splitter lurking in each of them and when a new fossil is found the power of this inner force will overcome the will of even the strongest man. With splitter juice raging through his veins you can't expect Tobias to be loyal to Berger, the man he mentored and put into charge in the first place. I forgive Tobias this end-of-career indiscretion and will still keep fighting for his airport. But when I do get it for him, I trust he will have the humility to allow us to have the Clarke Parking Garage, with a windowless basement for Ron to work in, and the Lee

Berger Information Kiosk where I can get the exclusive franchise to sell Little Foot key rings.

Graciously the Old Man is still on our side. In the end paleoanthropology is not the winner, the advancement of knowledge is. The most valuable understanding to emerge from 50 years of research in East Africa and the Transvaal is the clarity that humans are very much part of the evolutionary process. Even *Australopithecus robustus* has much to teach us. It is easy to think of *robustus* as an evolutionary dead end. They arise about 2.7 million years ago, live on a largely vegetarian diet until one million years ago and spread across a large portion of Africa. Their beginning, probably as a result of successive ice ages of the time, their living alongside *africanus* in the Cradle of Humankind and then their ability to live for a million years alongside *Homo erectus*, the most successful of all hominids in terms of time, is very interesting. Put into the context of our 200 000-year existence, *robustus* is an evolutionary success.

Even the 400 000-year *neanderthalensis* and 800 000-year *heidelbergensis* legacies are much larger than our time here. We have to stand in humility to realize the enormity of the evolutionary process and should consider clearly our mortality as a species. Succeed or fail we are likely to disappear in the near future. This is not necessarily a doomsday scenario, but we could simply evolve. A variation of 400cc in brain size is not everything. Strange to think that one day some kid will have a human tree posted up in his *Homo futurus* bedroom and *sapiens* will be some splitter's idea of a flat-faced variation of *Homo erectus*!

We could spend a whole book on this debate weighing up the width of femurs and relative length of ulnas. The topic of where the monkey lost its tail or the nature of the two-million-year bipedal transition. It makes no real difference to the *sapiens* encephalisation. This

revisionist history serves to explain the background and the characters involved and why they would not easily tell the tale of Out of Africa *carpensis*, simply because they were not part of its discovery.

What we should learn from the East Africans and even the South Africans is that they will defend their *turf*, er, no, I mean *truef*, er, no, I mean *truth*. Damn Freud and his *splitters*, er, no, I mean *slippers*. In the proposition of a southern beginning for *sapiens*, even though the evidence is heavily in favor, do not expect support from outside scientists, expect them to cling to their own positions.

Now we come to the part where the tail starts wagging the dog. We understand that *Australopithecus* started walking in East Africa and we understand that *H. habilis* started using tools and we understand that *erectus* walked out of East Africa. Those were the early problems, East Africa won those. The challenge now facing paleoanthropology is understanding the late encephalisation and finding the habits of modern man. However, there are very few moderns in the East African area, and the South African sites predate what they do have by 50 000 years. East African paleoanthropology is all dressed up with nowhere to go. In many ways the Bernard Price Institute is also guilty of leading us to the wrong places. Their proximity to Sterkfontein and their limited budgets means that the rich modern sites of the Southern Cape get short shrift. It is a two-day car trip down to the Southern Cape sites and it is a lot simpler just to do Sterkfontein as a day trip and go to Durban for holidays.

We are looking for the boundary and location that sparks the growth of our second favorite organ. The age of the Turkana boy is 1.5 million years, *erectus* walks around for at least another million years with his 900 cc brain. He also walks all over the world. There is no reason that the site of encephalisation has to be at the same place where bipedalism or handywork began. It is not as if there is an *erectus* HQ in Kenya that is guiding the development of the species.

We are not salmon returning to the Rift Valley to evolve. Encephalisation could theoretically start anywhere.

Unless the Guys at Intelligent Design have dropped some more of those dummy fossils in really odd places, just to confuse Darwin's children, we may have to shift our focus.

The East Africans are still clutching at two straws. Firstly the splitters just won't go away. Using bits of bone here and there, they keep grabbing at new species. Splitters make a case to split *erectus* early on into *Homo ergaster* and later into *Homo antecessor* and *Homo rhodesiensis*. There is even a new *Australopithecus aethiopicus* discovered by Richard Leakey in 1985 and an *Australopithecus garhi* discovered by Berhane Asfaw. Splitters also cling to ancient *sapiens* based around the bone-collecting case that *Homo heidelbergensis* is an intermediate step between *erectus* and *sapiens*, one that also produced *neanderthalensis*. The suits won this before, they will win this again. The suits are lumpers, so expect pressure on this to simplify.

White denies being a splitter; he defines himself as a lumper. Tim, splitters or lumpers is not a debate, it is a state of mind. When you discover a new fossil, the hair starts to grow rapidly out of your back and your canines uncontrollably extend. Lumpers with a new fossil in their hands can avoid turning into splitters no more than a werewolf can avoid the effects of the full moon.

The second straw is a new mini multiregionalism 2 forming around East Africa, that *sapiens* somehow arose simultaneously all around Africa. It is a photocopy of the Europeans' 1980s argument that *Homo erectus* arose simultaneously in all countries, a scientific version of Adam coming out of the sand.

No other animals in the fossil record evolve like this, but when God-fearing paleoanthropologists turn their attention to men, their brains go Jello and multiregionalism seeps out. If you can't prove that

a species starts on your turf, paleoanthropology's second prize is to make sure that it does not happen on someone else's.

Multiregionalism 2 proposes that there was a recent common mingling in Africa, a gradual change amongst all African versions of *H. erectus* to *sapiens*. The East Africans beat the first multiregional hypothesis that *Homo erectus* “formed” everywhere by proving *erectus* started in Africa. Their switch to multiregionalism 2 is doomed. Mitochondrial Eve describes a last common ancestor as recently as 160 000 years ago, there is simply no time for a multi regional development. Neither of these current East African pursuits gets to the top problem facing paleoanthropology today, Where did *sapiens* begin? Where is the archaeological evidence of the time and the place of encephalisation?

Pilgrim, species simply don't mutate “multiregionally”. This logic is where the myth of the hundred monkey syndrome comes from. We start on an island where no monkeys use sticks to knock bananas off trees. One, two then a hundred do it. Suddenly there is a global change in the “Jungian unconscious”<sup>83</sup> and all the monkeys everywhere are doing it. Uh-uh. Species evolve when they are isolated, inbreed and have limited or no contact with the outside pool. They pick up characteristics peculiar to their isolated environment, things that are not available elsewhere or are not affecting the universal population. You've seen the kids with six fingers in *Deliverance*.

Multiregionalism is a naive misunderstanding of the process of evolution and a romantic idea that Africa is a compromising place. The scorpion asks the hippo to give him a lift over the flooding river. Hippo says he won't do it because if he lets the scorpion onto his back, the scorpion will sting him. Scorpion assures him there would be no need to. The hippo agrees to offer the favor and struggles

<sup>83</sup> Jung was a German psychologist who had the idea that all unconscious knowledge was shared by everyone. I have also heard that Afrikaners are mind-readers.

through the roaring current and exhausted gets to the other side. As he jumps off onto the other bank, the scorpion stings the hippo in the back. When the hippo asks why he deserves to get stung, after the hippo had helped him so much, the scorpion shrugs and says, “That’s Africa, man” and scuttles off into the bush.

Einstein says that just because one thousand scientists think one thing and only one thinks another, does not make the one scientist wrong. Just because a multiregionalist solution would make everyone more comfortable, we could all share in the glory of an ancient pan-African beginning and international relations could be civil, that doesn’t make it a scientific reality. The idea of a single location for the explosion of encephalisation that has absolutely nothing to do with Europe and Neanderthals and ends up in their extinction is not popular. It is worse that the single location is not even the Holy Land, but Southern Africa. This is a “dog eats dog” world and history is simply history, even if the guys you support get their fuzzed-up ape tails kicked to pieces.<sup>84</sup> We are not here to please, we are here to discover reality.

Pilgrim, I will leave it to you to make the decision of which is most sensible. I propose Out of Africa *carpensis*, where an isolated *Homo* population finds itself in the Cape and develops a new technology which is then used to overcome all before them. Multiregionalism proposes that *sapiens* in 200000 BC can move his genes quickly from one part of the world to another, leaving no trace of the movement. Creationism proposes that *sapiens* was created out of sand in a “blinding flash”. If they are true then expect the Guys at Intelligent Design to start dropping bleeding statues into the fossil record to really confuse us.

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<sup>84</sup> A distinguishing feature of apes from monkeys is that the tail is condensed into the coccyx. This is why *sapiens* women have those beautiful rounded asses.

For the East Africans to lie down would be like asking the New England Patriots to stop the game early because they are 20 points behind. Pride will not let it happen.

Kenya has been in the driving seat for so long and the dynasty has not yet abdicated. This is an industry with momentum and strong financial backers. Sites still yield bones at Ngaloba, Omo Kibbish, Singa and Jebel Irhoud. The best sites of ancient bones actually come from Israel in Skhul and Qafzeh at 100 000 years old. Chris Stinger is confidently proposing a 196 000 year *sapiens* find at Herto.

These finds will keep coming. It may be that the only way to stop them is to find a fossilized tibia, cross the waterhole, beat them to death and then take a trip to Jupiter in a computer-controlled spaceship.<sup>85</sup> For all the capital invested, the search for early man in East Africa is stuttering with low sampling and we simply can't complete the picture. I have heard excuses from bad fossilizing conditions to low *sapiens* numbers caused by the exploding Toba eruption. When all is said and done, there is more being said than done. The explanations border on Intelligent Design.

The simple answer - like McCavity, early *sapiens* is simply - not there. This means he must be somewhere else. Finding early *sapiens* is not as difficult as the bone collectors make out. Sure, it's difficult to find skulls in places where they don't exist, but the game has changed. Early *sapiens* is not the same *Australopithecus*. *Australopithecus* led a very crude life, basically eating what he killed and scavenged. *Sapiens* builds assets and keeps modern technologies, but most importantly he is a litter bug and they are not finding litter in East Africa. They find litter, but it is much, much later than the South African sites. I must sound like a chirping rookie in a team that knows we have already won. All the East Africans would have to do to shut me up is find artifacts. Find me a five iron, anywhere in East Africa,

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<sup>85</sup> With apologies to Stanley Kubrik and *2001: A Space Odyssey*.

reliably dated at 165 000 years, and these pages will become beautifully quiet, but they can't do that. 165 000 years ago *sapiens* isn't out playing golf, he has gone fishing in the Garden of Eden.

## Neanderthal Brutes

16<sup>th</sup> June 1976. South Africa's townships erupt in violent protest. Both sides of the apartheid struggle batten down the hatches and prepare for a confrontation of attrition. A creationist government rules. International sanctions tighten. This introduces a period in South Africa where paleo-anthropology funding drops to almost zero. The Europeans and the East Africans come to a truce: early man arose in Africa, but modern man first appears in Europe. The wealth of *sapiens* sites in the Southern Cape is ignored. This alliance will distort our views on human evolution until late in the nineties. On her 16<sup>th</sup> birthday the princess pricks her finger and everyone in the castle goes into a deep sleep for 20 years.

In 1856, two workmen dig out a cranium and some supporting bones in a cave in the Neander Valley, near Düsseldorf in Germany. This sets off a European passion for human origins that is still raging today. In the canteen at Wits in the 1970s, the Jewish students teach me Clubbyhouse. It is a ten-minute-turn-based variation of bridge. The "stoch card" is like the Ace of Trumps. Play it at the right time, and it wins you the game, play it at the wrong time and it's worthless. *Neanderthalensis* is the European's paleoanthropological stoch card.

Although there are actually earlier finds of Neanderthals in Belgium in 1829 and Gibraltar in 1848, the German find is the first to be recognized as a separate species. For 50 years Neanderthal Man and Cro Magnon man are the only ancient bones discovered. Everything points to a European origin of modern man. This makes perfect sense to a group of races convinced of their own superiority.

*Homo neanderthalensis* is Europe's last-ditch effort to hold onto the source of human origins. Flowing through these earlier chapters is the common theme that the bones create the story, not support it. We are always beholden to the collectors and what they choose to collect. The sparse record means that we are looking at human origins through a tiny keyhole. The door only opens when the other disciplines enter the field.

At first, the bone-finding tail keeps wagging the human origins dog. For 150 years, the Europeans desperately try to avoid an African origin; they can handle Asia and even the Levant as a source of humanity. Even Jesus came from Israel, why not us? But they can never easily swallow the full African origin. Somehow it just makes them choke on their custard and Christmas pies.

From around 1900, substantially earlier versions of man are uncovered in Asia. This is where Peking man and Java man and the recent Floris midget come from. They are all *Homo erectus*.<sup>86</sup> Neanderthals are also found in the Levant and south-east Asia. Right up until the nineties Europeans cling to the vain hope that *H. erectus* "developed spontaneously" around the world and evolved into Neanderthals. The two opposing theories were the Out of Africa 1 theory versus a multiregionalist start for *Homo erectus*.

By 1990 Europeans come to accept that *Australopithecus* is found in Africa and only in Africa. There is simply no choice. All the Asian searching comes to little more than to show how successful *H. erectus* is when he walks out of Africa around 1.8 million years ago. Neanderthals however represent a more advanced species, not found in Africa. The Europeans even moot that *Australopithecus* is not part of the human ancestral line. This is the late-night ticket to avoid the unpleasant thought of an African origin. *Australopithecus* is a side branch and *Homo erectus* develops simultaneously around the world.

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<sup>86</sup> Floris is still being analyzed and is likely to be a variant of *sapiens*.

The legend of multiregionalism is born in the dark recesses of Europe's castles. In 1897 Bram Stoker publishes *Dracula*. Multiregionalism is the ultimate plot to avoid the bright daylight that burns the body when exposed to an African origin. Dart and his Tuang skull pry open the crypt. Broom pushes in the garlic with early discoveries. Tobias is the first vampire killer when he identifies *Homo habilis* as the direct African ancestor of *erectus*. Just as the Europeans are getting used to Tobias' squeaky African accent and the smell of garlic, Richard Leakey comes out all guns blazing in 1985 and slams a wooden stake into the heart of the beast with the Turkana Boy. Here is a perfect fossil clearly predating all the Asian finds by hundreds of thousands of years. The direct line of *Homo erectus* begins 500 000 years earlier in Africa than in Asia.

Revealed in broad daylight, the multi-regionalist approach to *H. erectus* burns in flames. The vampire killers are heroes. Can you see why I am calling for the Philip Tobias Airport at the end of the Richard Leakey Highway?

The Leakeys have a field day taking the credit for our African origin. Louis, a devout Christian, says he has never found any clash between what he has read in the Bible and found in the field. One can only conclude that he is not an avid reader of theology. Richard rejects his father's religion, goes on a world tour and is promoted to head of Kenya's wildlife office. Read Richard's book, it's all there. East Africa and the great Rift Valley and the equatorial regions are the perfect place for human speciation. The Europeans, left naked but for Neanderthals, are stunned. With South Africa gagged by sanctions, no one questions it. Kenya is the Garden of Eden and if it isn't there, it is just over the border in Ethiopia.

The real weakness of Kenya and Tanzania is that the fossil record, besides being sparse, really only covers the period 1.6 to 3.8 million years ago. You have to go to Ethiopia to get further back.

But further back in human history is not that interesting, it keeps getting more monkey-like. Further forward is more interesting. Where did modern humans come from? The fossil record in Africa from 1 million years ago to 10 000 years ago is ominously silent. In Europe fossils are relatively easy to find.

The abundant fossil record gives the Europeans their one last shot – *neanderthalensis* is the predecessor of modern man. Could it be that this thick-set man, found only in Europe and the Middle East, not at all in Africa, had originated from *H. erectus* in a European Garden of Eden, the one with the serpents and apple trees and devious women of low moral standing? Nice idea, but once again the Europeans lose this hand. In Clubbyhouse, timing with your stoch card is everything.

When the first skeleton is uncovered in the Neander Valley, near Düsseldorf in Germany, people do not know what to make of it. At first they think it is the deformed body of a modern human, but then more of them start to turn up. There is no getting away from it, Neanderthal man is a separate early caveman that dies out sometime before Noah's flood. This thick-set European, big boned with a large brain and high eyebrow ridges, is very much like us.

Neanderthal, not yet found in 1900 England, really upsets the Brits. They can see him yodeling from his cave, donning lederhosen and eating sausage and pickled cabbage. They desperately yearn for their own ancient man, and embrace him with open arms when he steps out from the pit in Piltdown. The irony of this national rivalry is lost on the English. The Saxons invade England 1500 years ago and push the natural Britons into Wales. The English are Germans, Germans from Saxony. Even under their convoluted Victorian logic, Neanderthals should have been more closely related to the Saxon English than to the wider German nation. Without skin color, racism can be really difficult to practice with consistency.

As the years go by, *Homo neanderthalensis* grows in stature and starts to take the form of an ideal European ancestor. If we met *Australopithecus* today we would think of him more as a chimp than a person. We would definitely see *H erectus* as something different, but put *Homo neanderthalensis* in a big duffel coat and he could travel the London underground without someone asking to see his ticket.

*H. neanderthalensis* has an impressive archaeological record; the Europeans certainly came out to bat for the home team and we find him all over Europe and in the Levant, but significantly not in Africa. This allows the Settlers and the Poms to approach and discuss the topic a lot more cooperatively. Through the 20<sup>th</sup> century more artifacts keep turning up. *H. neanderthalensis* makes fire, lives in caves, uses tools, stores food, makes jewelry, buries his dead in rituals with flowers. But his life is “short and brutish”. This is a species fighting for survival against harsh elements. The world keeps having these darn ice ages, and for anyone who has seen *The Day After Tomorrow*, you will know how an ice age can mess up your plans for a beach party and barbecue.

Can *H. neanderthalensis* be our human ancestor? Are we all descended from Fred and Wilma Flintstone? Is bedrock the cradle of humanity? By the 1980s, dating techniques are only just coming into their own. Computers are still housed in air-conditioned rooms and Neanderthal Man is the only thing the Eurocentrics have. They cling to passionately to the bulky fella.

Also turning up in Europe are skeletons. Skeletons far more like us, the first one being at Cro Magnon in France – hence Cro Magnon Man. All through the later part of the 20<sup>th</sup> century, as Europe rolls back its rural countryside into more shopping centers and autobahns, more skeletons are found. The splitters are back; this is where names like *Homo heidel-bergensis* and *Homo antecessor* come from.

In the eighties, the common ancestor of ancient *sapiens* and Neanderthals remains elusive but seems to stretch back to over 100 000 years ago. Cro Magnon man is an ideal ancestor; he makes beautiful tools and he paints wonderful pictures, the perfect prototype of the sophisticated European culture.

At first the Europeans try to slot Neanderthal in as an ancestor of *sapiens*. Neanderthals have a very distinctive skull and facial morphology compared to modern human populations. The Neanderthal face, in particular, is distinctly different from anything that comes before or after. Early *Homo sapiens* have a more modern morphology. The defining aspect is the repositioning of the face beneath the braincase instead of out in front; this creates a new relationship between the tongue and the back of the throat, which facilitates speech. This new anatomy can be most clearly seen in the sphenoid, the bone that divides the brain from the face and cradles the pituitary gland just behind the nose. This fact is often touted as evidence that the Neanderthals are a divergent out group that leave no genetic heritage to modern human populations. When in Germany, keep this view to yourself. It is not a popular view and sure to lose you points with pretty Teutonic anthropology doctoral students down at the beer hall.

The late eighties model is that *H. erectus* rises in Africa and walks out about two million years ago. Around 500 000 years ago “ancient” *Homo sapiens* begins to evolve from *erectus*. This all happens in Europe, and, with each wave of ice age, *H. neanderthalensis* and the ancient *sapiens* are pushed southwards together. The story goes that *sapiens* guys start to notice that the Neanderthal girls might have really big asses, but the rest of them is not too bad. They start hanging about the red light district on Friday nights.

The kids coming out of this union face a tough life with a single mom, but they do have the benefit of bigger brains and bigger penises. This gives them an evolutionary advantage. There is a gradual increase in brain and penis size over 500 000 years.<sup>87</sup>

Faced with this new evidence, the Europeans again move to a multiregionalist view which has the European Neanderthals interbreeding and being absorbed by invading populations. Some researchers still hold out that the Neanderthals evolved in places into modern Europeans with little or no genetic influx from African populations, but few accept this argument. Those that do, also celebrate Hitler's birthday in May each year.

The problem the Europeans have is caused by the fact that the fossil record of Neanderthal is really good. They have records of finds from 250 000 years to just under 30 000. However, as has been shown on numerous occasions in this book, the fossil-finder also becomes the storyteller and the storyteller can only tell the stories of his own culture. I grew up on the tales of Hans Christian Anderssen and the Little Red Riding Neanderthal Girl. Unfortunately for those trying to tie the stories to reality, *neanderthalensis* does not seem to be moving towards *sapiens* at all. The ugly truth starts to dawn that maybe Neanderthals were simply marginalized by invading *Homo sapiens* until they died out, leaving no genetic legacy to modern humans. Splitters cut short the Fuhrer's birthday party and scurry off looking for more bones as evidence.

Fast forward to the eighties and the Eurocentrics are still licking their wounds over losing the multiregionalist dispute over *H. erectus* and Out of Africa 1.<sup>88</sup> We find evidence of *H. Sapiens* on all continents, but aging favors Europe.

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<sup>87</sup> No fossilised penies have ever been found. Those that might have been found are all lost to black market Chinese medicine

<sup>88</sup> Out of Africa 1 is the hypothesis that *erectus* evolves in Africa and migrated out 1.5 mya.

The world is not ready to listen to South Africans, who are still a pariah state. Chris Henshilwood is still popping pimples on his chin and Richard Klein is playing flag football in the empty sandlot next to the chemistry lab. The Europeans can't tell the difference between P.W. Botha wagging his finger and Philip Tobias demonstrating the extension of one of his phalanges.<sup>89</sup> The rest of Africa is a succession of corrupt one-party states, most of them in some level of civil war, naming airports after politicians. Paleoanthropology is not even on the African agenda.

Qafzeh and Skhul caves are located a few meters apart in Mount Qafzeh, Israel.<sup>90</sup> The remains of eleven different individuals are discovered between 1933 and 1977. The most intriguing find is in the Skhul cave, a modern-looking skull with Neanderthal features. No other skulls in either cave show this. The find may be the product of modern humans and Neanderthals breeding. No other evidence is found to support this theory, except that a few meters away at the Tabun and Kebara caves the remains of several Neanderthals are found. For the wishful thinking Europeans, the possibility of interbreeding is feasible.

Both adult and infant bones are found in the Qafzeh and Skhul caves dating back 100 000 years. With the human remains are Mousterian tools, sidescrapers and points, previously thought to be tools only of the Neanderthals. This highlights the interaction between Neanderthals and modern humans.

The theory holding the floor in the nineties is that Neanderthals and modern humans interbreed and the pure Neanderthals are pushed back by their half-breed cousins, until 35 000 years ago when the last

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<sup>89</sup> P.W. Botha was the Afrikaner strongman that ruled South Africa in the eighties. Nelson Mandel should have had him tied to a beachpole and shot, but graciously forgave him and ushered in a new era of tolerance in Africa.

<sup>90</sup> This account by Sarah de Ville on the University of Minnesota's website.

of them die out in a cave in Northern Spain. This bequeaths to the world the wonder of the modern master race of superior Europeans.

The trying conditions of the successive ice ages craft the modern *Homo sapiens*. Europe and the Levant belonged to the Cro Magnon, *H. Sapiens*, us. We quietly stayed there, living in caves, making fires and skin cloths, hunting for food. Around 10 000 years ago the Leventines discovered farming and from there they colonize the world. This is followed by the second European colonization starting 500 years ago. It is all part of God's perfect plan for the white man. Even the creationists can go along with this. The kid from a tough neighborhood works hard and makes good in the big city. It is a real life script for the big screen with a perfect Hollywood ending. Sadly it is pure fiction.

The real weakness of the argument for the European origin of man is that even though there are large amounts of data, it all seems to conflict. As Galton discovers 100 years earlier, it is not the figures that lie, but the liars that figure. Truth has a peculiar way of emerging. You can throw data at it and you can throw money at it, but the beautiful thing about science is that in the long run, it is impervious to these factors. The Neanderthal data is typical of statistical data that is being massaged to fit a square peg into a round hole, it just keeps coming. Recently a new fossil child from Portugal is dated to only about 25 000 years ago, long after the Neanderthals are thought to have disappeared from Europe. The fossil child is said to display some Neanderthal features in its skeleton. In a heated exchange in the pages of the *Proceedings of the National Academy of Sciences*, Erik Trinkaus, the senior morphologist in the study, suggests it is an example of hybridization between Neanderthals and modern humans, while Ian Tattersall, another authority on Neanderthals, argues that this is not demonstrated.

The exact precedence of *neanderthalensis* or *sapiens* is never fully understood or described by the Eurocentrics, but the technology advantage of Europe over Africa and the rest of the world is ascribed to being forged in the hardship of Europe. We find really old Neanderthals, then old humans, then an increase in the influence of Neanderthals, then a sudden dying out. It is all very confusing. Occam's Razor likes my approach. Neanderthals evolve from *Homo erectus* and live in Europe. 40000 years ago *sapiens* arrives, sets up in the neighbourhood and kills them all.

More and more Neanderthal sites show evidence of cannibalism, human bones smashed, cut and treated like other faunal remains. This may confirm an analysis of the bone chemistry of Neanderthals published in 1992 that indicates they were almost exclusively carnivorous. This is a completely different diet and behavior to *sapiens*. *Neanderthalensis* can never make the jump from hunter-gatherer to organized communities. I am not suggesting Blitzkrieg-style tank battles with the Neanderthals. MIS2 Europe is a harsh place to live. It is like the great depression of 1933. The Cro Magnons get all the best jobs and take the best apartments. The Neanderthals are left outside grunting in the snow. The trade unions fail to organize a strike and one by one the meat-eaters wake up next to dead friends in the morning snow.

After eating each other for a while, the food source dries up and the last one is left 35 000 years ago to turn the lights out in Northern Spain about thirty five thousand years ago. It takes the genetics revolution to finally clear our views of the Neanderthals as well as on other developments in human history. Two recent studies of mitochondrial DNA, passed only through the female line, which was extracted from the original Neanderthal fossil, show that Neanderthal DNA is *very* different genetically from ours. There is little relation between the DNA of *neanderthalensis* and *sapiens*.

The differences between *Homo sapiens* and the Neanderthals are so great that geneticists estimate that our ancestors split off from them at least 400 000 years ago!

The key principle in vampire killing is that you must drive the wooden stake right through the heart and then drag the body out into the sunlight. If you fail to do all these steps, the beast will rise again.

Proponents of the multiregional model, such as Milford Wolpoff, cite evidence in Asia of regional continuity. They see an evolutionary link between ancient *Homo erectus* in Java, through *heidelbergensis*, right through to Australian aborigines. As I said earlier, some scientific theories are worse than creationism!

A possible problem with this view is that recent dating of late surviving *Homo erectus* in Indonesia suggests that they survived here until 50 000 years ago, which is potentially when fully modern humans may have arrived in the region from Africa. It seems the ancestors of the gentle aboriginal people may not have been as gentle as they make out to today's Australian parliament.

Every proponent of the Out of Africa 2 hypothesis, and by now you must have established that I am clearly one, has sooner or later got to deal with *Homo heidelbergensis* and *Homo antecessor*, song and dance acts that are heavily promoted by the multiregionalists.

The first remains of *H. heidelbergensis* are found in 1907 at Mauer near Heidelberg in Germany, followed by others at European sites. The best evidence finds that these hominids date between 400 000 and 500 000 years ago. Previously called *archaic Homo sapiens*, their stone tool technology was considerably close to that of the Archeulean tools used by *Homo erectus*. Ignoring this annoying fact, splitters have gone on for a hundred years building a Lower Stone Age civilization around this jawbone, completely divorced from *H. erectus*.

The browridge of *H. heidelbergensis* is smaller and the angle of the rest of the face is more vertical than in *H. erectus* or *H. ergaster*. Males stand over 1.7 meters and weigh on average 62 kilos, females 1.6 meters and 51 kilos. Bone mass indicates a significant increase in physical strength. In addition, brain size increases gradually up to 1600 cc. Heidelberg skeletons and teeth are usually less robust than in *erectus*, but more robust than in modern humans. Most have large browridges but receding foreheads and chins. Either way I am not going to let my daughter go out with a *heidelbergensis*, even if his father has a good job down at the European Commission and he can take the subway without standing out.

*Homo antecessor* is based on fragments from the TD6 level at the Gran Dolina cave, near Atapuerca, Spain. The approximate date of 800 000 comes from the fact that the fossil finds lie below a known magnetic change point. The sediments above have a magnetism similar to that of today's earth, but the sediments below have a reversed magnetism. This implies the age of the lower sediments.

Evidence of magnetic reversals occurs in sediments all over the world and the most recent shift from "reversed" back to "normal" has been dated by argon laser techniques to between 780 000 and 791 000 years. If the skulls are found below the line, they too must be older than the reversal.

The discoverer of *H. antecessor*, Bermudez de Castro, argues that the shape of the nose region is not that of *erectus* but that the find instead resembles some features of *H. sapiens* and Neanderthals, hence the name "*antecessor*". He argues that *antecessor* is the ancestor of both Neanderthals and modern humans, before the two lines diverged. In the enthusiasm, few notice that *H. antecessor* could simply be just an early form of *H. heidelbergensis*.

There is a movement to get the Heidelberg finds associated with African finds, which have been suppressed to date. Rhodesian Man, frequently classified as *Homo rhodesiensis*, is a hominid fossil described from a cranium found in a zinc mine in Broken Hill, Kabwe, Zambia in 1921 by Tom Zwiglaar, a Swiss miner. In addition to the cranium, an upper jaw from another individual and other fragments were also found. The skull was dubbed Rhodesian Man at the time of the find, but is now commonly referred to as the Broken Hill Skull or the Kabwe Cranium. Rhodesian Man is dated to between 125 000 and 300 000 years old, with a cranial capacity measured at 1300 cc. While it would be good to fantasize about an Out of Africa 3 or a Ryder Haggard-style white race living in Africa, the most likely explanation is that it belongs to our old friend *Homo erectus*. There is simply no evidence of migrations at this time.

See if you can follow the splitter logic. *H. antecessor* and/or *H. heidelbergensis* is apparently the next species, after *H. ergaster*<sup>91</sup> and possibly *H. erectus*, to diffuse throughout the length of Africa, and from there into southern Europe and the Middle East. The causes of this human migration are not known, but increasing pursuit of large animal game may have played a role. Able to resist competition from any other large predator and to compete with those predators for a wide range of prey, *H. heidelbergensis* likely expands the opportunities for human hunting. The richer diet that results may in turn have contributed significantly to the evolutionary scope for increased body mass. It is another Out of Africa theory, but this time with no evidence of travel, and a messaging system of email attachments carrying DNA snippets between the scattered multiregionalist population. It is easier to follow the characters in *War and Peace* than to follow this convoluted Eurocentric logic.

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91 *Egaster* is yet another splitters' version of breaking up *erectus* into African and Asian/European populations.

Using Occam's Razor this is how a lumper cuts it – *erectus* begat *antecessor*; *antecessor* begat *heidelbergensis*; *heidelbergensis* begat *neanderthalensis*; *neanderthalensis* begat *nothing*.

A super-lumper like me says *erectus* evolved into *neanderthalensis* and there were no significant phases in between. The African specimens are merely unrelated offshoots of *erectus*, an adaptable animal that lives for nearly 2 million years.

Heidelberg fossils are also increasingly associated with dismembered and burned human remains that indicate cannibalism. This is also a trait of the Neanderthals. It is not clear whether Neanderthal cannibalism was a response to ecological scarcity, a habitual diet, or a learned treatment of captives or the dead. Either way this is a characteristic of early Europeans. Follow this line all the way down to Hitler and Berlin Skinhead culture and you have to conclude that it must be something in the draft beer, possibly a rare version of heavy mercury isotope?

Irrational nationalists and splitters hankering after a European origin sometimes share the same kind of myopia that we find in the creationists. Both face the same problem, that *a priori* all fossils must be in one or another category or represent a new species. Often there is no clear distinction between some western forms of *erectus* and *heidelbergensis*. Both use Acheulean tools until extinction, and many fossils from around 500 000 years ago are difficult to classify into one species or the other. The idea of lumping them all into *erectus* will get you burned at the stake in Germania, so, like Aristotle, we start creating little circles in space for orbits to explain what is coming out of the ground.

I lived in Berlin among the Schwartz-Deutsch and often used to sit out the mornings in an outdoor coffee shop watching women go by.<sup>92</sup>

<sup>92</sup> "Black Germans". This is the small but not insignificant group of mixed-race Germans. German-ness is obviously most important to them and they lump all mixes, Asian, Arab or black, into "schwartz".

You cannot help noticing that, after Bloemfontein, these are the most beautiful women on the planet. However, try and order anything or toss out a pick-up line in broken German and the look you will get consigns you to the group of subhuman intelligence. I once had an old woman screaming and hitting at me with her handbag for daring to come to Deutschland without being able to speak Deutsch. The *heidelbergensis-neanderthalensis* rule was the European Reich that lasted for 500 000 years. Indulge our German cousins; it is very difficult for them to warmly embrace the idea that a humble tribe of African Beachwalkers took the wrong turn on a hunting trip and obliterated their *paleoreich* in an evolutionary blink.

*Erectus, neanderthalensis, ergaster, antecessor, heidelbergensis, georgicus*, Cro Magnon, what a mouthful. Just to avoid this terminology is enough justification to declare oneself as a super-lumper and as a self-confessed super-lumper I will proceed. Notwithstanding their record in colonial Africa, Europeans are actually very nice people. An Englishman once described the Swiss to me as the nicest people that you can give your money to. They are also enthusiastic about paleoanthropology and polite, but very pleased about being on the top of the pile. It is a real shame to have to break the bad news to them. I blame the disappointment they will feel on their own vanity and on the splitters. Splitters take a fragment of bone, measure a variation with a pair of calipers, declare a new species in their own name or the name of their home town and rush off to the European Commission for a research grant.

Let us imagine for a moment that we are finding the bones of dogs, not humans. Splitters would be digging up ten species between a Jack Russell and a St Bernard. They would find five new species in England alone. Yet all dogs are the same species and interbreeding is no problem. If he picks the right gal at the right time, a Jack Russell can get his lipstick away with some really big mamas. I have seen it.

A name can make for a prejudiced outlook. It has been shown in US studies that a black name on a résumé in America gets you fewer interviews than a white name. Hunting *Homo erectus* fossils is like hunting dog fossils. We have become confused by nomenclature. The name “*erectus*” was coined by Jean du Bois in Java 1891. This was even before Bram Stoker wrote *Dracula* in 1897 and *Australopithecus* was shown to be the first Daywalker in 1924. What makes *erectus* different is not his bipedalism, that’s old hat, but his *endomorphie shape*. His long thin body is built for speed in a harsh world. He is faster than an Olympic athlete today and his body is almost hairless. Over two million years he develops the chameleon ability to change color and this lets him move between temperate and tropical climates. Chimps can’t move out of the tropics and even *Australopithecus* can’t come South of Jo’burg, yet *Homo erectus* can get right across Africa and as far as Northern Europe and Indonesia.

*Homo erectus*' ability to change skin color gives him the ability to bulk up on vitamin D in the cold, and thin out and avoid skin cancer in the tropics. A lumper finding him today might well call him *Homo adaptus*, after his ability to live from Africa to Jaza and between..

Indulge me. Dart, ever the splitter, called his Taung fossil *Australopithecus africanus*. A lumper would have called this bipedal monkey *Homo erectus*. Without *Australopithecus* everything would have been a lot easier to remember – *erectus* – *habilis* – *adaptus*. Unfortunately, lumpers don’t find fossils, we work in the office. Splitters find fossils. Instead of finding a new fossil and trying to lump him into *H. adaptus*, every new find of bone tries to split away from *Homo erectus*. So blame Du Bois and Dart for why we have a complicated tree and why one hundred years and \$ 100 Million later we still have a missing link.<sup>93</sup>

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93 Most mainstream paleoanthropologists would scoff at this analysis. Take it as the ramblings of a pamphleteer.

This may be the thinking of a really sick mind, and I will admit that battle injuries, drink, drugs and fast women have slowed me down a little, but take a new look from now on at every hominid announcement that comes out on ancient man and try to split out the self-promotion. Ask yourself after reading each press release – can this be merely a variation of *erectus*? When the splitters find dwarf size hominids on Flores Island in Indonesia they describe it as follows:

*The remains of a little cousin of modern man nicknamed the Hobbit, that lived only 12,000 years ago, have been unearthed by scientists, in a spectacular find that rewrites the story of human evolution. The discovery on a remote Indonesian island shows that sapiens shared the Earth with more primitive relatives soon before the dawn of recorded history, and suggests a tantalizing explanation for the myths of elves, dwarves and 'wild men of the woods' that are popular all over the world.*

Lumpers came along and pissed on the party by pointing out that *Homo floresiensis* is nothing more than a dwarf breed of *erectus* or even *sapiens*. Now if *erectus* or *sapiens* can adapt to the shape of a 3 ft dwarf, can you get my lumper drift that he could easily also look like one of the many ancient *sapiens* skulls that Intelligent Design keeps dropping off around Europe to confuse us. He can even take the subway to Tottenham Court Road.

Why is it so difficult for the European mind to grasp the Out of Africa hypothesis? Some light can be thrown on the subject by considering the unraveling of the origin of mammoths. Mammoth prehistory we can at least look at without the cloudy intrusion of the creationists.

Mammoths are about as European as Tolstoy and overcrowded train stations. Right? The bones have been coming up in Europe since the 1400s, where they were first thought of as giants' bones. Siberia is still the greatest source of mammoths, and with the recent thawing of the ice and permafrost, there was a sensational find of an almost complete cub. Mammoths are woolly elephants that originated in Europe, died out in the Pleistocene and must have been the ancestors of modern African elephants. Right?

Wrong! Mammoths originate from Langebaan in the Cape, a drive and a 5 iron away from the Garden of Eden.<sup>94</sup> The movement of mammoths is a lot clearer than humans, simply because mammoth evolution is not monopolized by splitters. Mammoths and Indian elephants are from the same branch that splits from African elephants, *Loxodonta africanus*, around seven million years ago. *Mammuthus subplanifrons* originates in Langebaan just under five million years ago. He spreads through Africa and 2.5 million years ago walks into Europe and evolves into *M. meridionalis*. 1.8 million years ago he evolves into *Mammuthus trogontherii*, the woolly mammoth. One million years ago he crosses into America where he evolves into *M. columbi*. Some of them walk out to the islands off the Californian coast, where they evolve their dwarf stature. Mammoths in North America live happily until around 20 000 years ago when they notice their friends falling into stick traps and getting murdered by strange little ape creatures carrying pointy sticks, driving Harley Davidson motorcycles and wearing dead mammoth-skin jackets with a skull and crossbones on the back. The last one is killed 5000 years ago.

In the period between 40 000 years and 5000 years ago North America loses 40 species, or 70% of its large mammals. South America loses 80%, and Australia 90%.

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<sup>94</sup> Not quite. Langebaan is about 200 kms north of Cape Town. It is a drive in a car and a 5 iron from the parking lot.

In general these are species greater than 40 kgs. The larger the animal, the faster the extinction. Woolly mammoth, woolly rhinoceros, giant deer, marsupial lion, giant kangaroo, giant sloth, sabertooth tiger.

The animals that have a long association with man, in Africa, fare better. Those in the New World collapse within a thousand years of man's arrival. When Captain Cook lands in New Zealand he finds a local Polynesian population in a harmonious balance with nature. The extent of the slaughter is only revealed once the earth is turned over. When the Organization for the Advancement of Primitive Peoples' Hunting Rights comes by selling raffle tickets, I slam the door in their face and refuse to give them a donation.

The last mammoths in America are caught in tar pits and killed and eaten by the Clovis people.<sup>95</sup> This site is a gem in the history of paleontology. As a monument to this momentous find, we build a shopping mall and feeder road over the top of it in downtown Los Angeles and it is lost forever.

Does the story sound familiar? The fossil similarity between *Homo* and mammoths is complete with dwarf mammoths found on isolated islands in Sardinia and Santa Rosa off California. No one suggests a *heidelbergensis* style multiregionalism with elf-eared elephants sailing on dandelions half way around the world. The theory of dwarf forms, based on enclosed island living with limited diet, is easily understood with mammoths, yet paleo-anthropologists find similar forms of *Homo sapiens* on Flores Island, and conjure up tales of new hobbit species rewriting the human tree. How many fossils could a fossil splitter split, if a fossil splitter could split fossils?

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<sup>95</sup> I use the term "Clovis" for all early North American natives, this is no longer the general thinking in anthropology.

Mammoths have resisted five million years of fluctuating ice ages and harsh conditions and thrived. In 30 000 years they are wiped out, only to be revived sometime in the 21<sup>st</sup> century from a DNA reconstruction and growth in the womb of a modern Indian elephant. This research event wins the team from Mumbai University the 2121 Nobel Prize.

Similar arguments would go for *Homo neanderthalensis*. If Neanderthals evolved from *erectus* then they would also have inherited the ability to adapt. We should consider that many ancient *sapiens* fossils may actually simply be ancient *neanderthalensis*? Many time over the last 500 000 years Europe would have been much hotter than during MIS2 to MIS5 between 90 000 and 20 000 BC. This would not have suited a bulky white form. Neanderthals are a variable species and could produce a wide range of fossil types.

It is misleading to rely on brain size as a measure of Neanderthals' anatomical relation to modern man. The Neanderthal brain is sometimes bigger than ours, as much as 1600 cc, but this is not a result of encephalisation, this is merely a result of a bigger more robust *Homo erectus* body tuned for icy conditions.

The lumper in me wants to cry out that Neanderthals are nothing more than latter day *erectus*, but what sticks in my throat is visions of me, in a pot, getting boiled and slow cooked in a Bearnaise sauce by a circle of pale-faced, blond, meat-eating European savages at a paleoanthropology conference. Indulge me for a moment. We find Neanderthals in south-east Asia. Did they walk there and there why did they not walk to Africa? Is it possible that Asian Neanderthals are another local variation of *Homo adaptus* and not the first Marco Polo?

As for the Qafzeh and Skhul burials found between 1933 and 1977 in Israel, that is an Easter Story from the Holy Land, with a similar unhappy ending. It is true that the first walk out of Africa is 90 000 to 100 000 years ago, but this excursion is doomed.

We may well have coexisted peacefully with Neanderthals for a very short time, but the Levant soon dries up and this expedition dies out. Some Neanderthal St Paul may then have gone back to Europe to preach the world of burial rituals, art and culture and prophesy our return. He should have told them to run and hide. The next time we come back, we bring a big black Stanley Kubrick *2001* slab with us. The second coming in 60 000 BC is more like Cortez arriving in El Dorado, with Adolf Hitler running the blitzkrieg and Jamie Oliver working the kitchen. *Homo erectus* meets merciless killers with little time for other races and species, and a big appetite for lunch.

This debate is going to be solved over the next few years, but it will take a while. I simply can't see large amounts of EU research money going into proving that Neanderthals are actually more like *erectus* and less like *sapiens* and that the similarity with humans is more distant. This simply does not serve European funding purposes. Out of Africa 2 is just not something that Europeans like to spend their hard earned Euros proving.

This prejudice is the same thinking that previously had us thinking that gorillas and chimps were closer than humans and chimps. Fortunately genetics should solve this for us. Increasingly we are finding evidence that humans are closer to chimps and *erectus* dies out less than 100 000 years ago, killed by us. *Yawn!*

Soon we will isolate DNA from *erectus* and be able to compare Neanderthals, *erectus* and *sapiens*. *Yawn!* The results will clearly show the more direct relationship between Neanderthals and *erectus* – *Good night!*

*Homo sapiens* with a long development history anywhere other than in Africa is the romantic product of European minds. White men dreaming, who have always felt that they lived at the center of the world. Neanderthals are a small branch of the phylogenetic tree, an evolutionary dead end like the dot matrix printer.

They are a modern day version of *Australopithecus robustus*, without the 1.5 million year staying power. 40 000 years ago, we start gathering them together, putting them into cattle trucks and riling them off to Northern Spain and their fate is sealed. It takes the entry of the American geneticists in the 1990s to finally overturn the fairy tale.

Kids, you should close your ears and go to sleep at this point. Warning! The rest of this book contains scenes of sex, strong language and violence. What actually happens to *Homo erectus* is sudden and genocidal and this force is still operating today. In a blinding flash, an evolutionary bomb explodes on the world and is killing more species than anything since the Chixalub impact meteor wiped out the dinosaurs 65 million years ago.

## African Eve

12<sup>th</sup> January 1988. *Newsweek* releases the “African Eve” issue. A bomb goes off in the search for human origins. A new technology flexes its muscles and in so doing, drags paleoanthropology kicking and screaming into the glaring lights of mainstream media. Growing up in apartheid South Africa means that as a schoolboy you have severely limited access to good pornography. The first time that *Playboy* makes it onto our shelves it is, believe me, big. I still have that first issue 30 years later. But *Playboy* is nothing compared to the momentous *Newsweek* issue. Before Eve, we get paleoanthropology in unreadable journals, newspaper clippings and dry books by bone collectors. African or mitochondrial Eve is the biggest thing since Taung and hits the field in full color in a mainstream magazine!

Genetics is a branch of biology dealing with heredity and variation in living organisms. It relies heavily on the field of organic chemistry, which can be terribly confusing. It is all proteins, sugars and alcohol. They are all very similar chemicals. I have never really understood the chemical difference between sugar and alcohol. The one makes women fat and ugly, the other makes them fat and beautiful.

Genetics is very important to us because it corroborates paleoanthropology results from a completely different viewpoint. So whereas skills in human morphology will help you understand an *Australopithecus* bone, these skills provide little help in analyzing DNA. A whole new generation of brain power enters the field of human origins and their labs are in the cities of the Midwest, not in the savannah of Africa.

Population genetics is the study of the evolution of genes across large groups. It is the application to human origins which is the momentous event. Even I can see that this event, played out in a laboratory somewhere in the US, is more important than man landing on the moon. I am an applied mathematician, an econometrician to be precise. I can hardly tell the difference between a dinosaur bone and a baseball bat. Our world is very different from Richard Leakey's, but it is a world whose time has come. Today, we can build models and constructions in a computer that can take us to ancient worlds just as surely as looking at bones on a field trip.

The entry of genetics into paleoanthropology and the development of the personal computer changes the balance of power. It becomes a whole lot easier to communicate with mitochondrial Eve using C++, spreadsheets and email.

Mitochondrial Eve, who is she?

Using mitochondrial DNA, we can trace our ancestors back to an ever-diminishing group. Eventually this gets down to a single ancestor. Mitochondrial Eve is our earliest common ancestor that shares mitochondrial DNA with all living humans. I will explain this in more detail, but the surprising result is that we trace mitochondrial Eve to around 160 000 years ago and we place her in Africa.

Mitochondrial DNA, mtDNA, is the DNA located in organelles called mitochondria. Most other DNA present in eukaryotic organisms, like us, is found in the cell nucleus. Nuclear and mitochondrial DNA are thought to be of separate evolutionary origin, with the mtDNA being derived from bacteria that were engulfed by the early ancestors of today's eukaryotic cells. Among multicellular animals, nearly all of the mtDNA in a fertilized egg is inherited from only one parent – the female. One mechanism for this is simple dilution: an egg contains 100 000 to 1 000 000 mitochondria, whereas a sperm contains only 100 to 1000.

Another mechanism, documented for a few organisms, is that the sperm mitochondria do not enter the egg. Whatever the mechanism, this single-parent pattern of mtDNA inheritance is found in most animals, plants and fungi.

If you come from a patriarchal society, as I do, where the majority of people worship their ancestors and certainly do not question what their fathers say, then mitochondrial DNA is anathema to you. This also applies in a social context. In a patriarchal society, we take our father's name. Our families are based around the male line. In some form or another we carry a surname that reflects this. As we mix, the number of common inherited surnames shrinks with each generation. This is most acute in an isolated island community. This is why you can't post a letter to Mr Glass on St Helena Island and expect it to get to the right Mr Glass. This is why, in England, you have to keep up with Jones or Smith. In Durban, your daughter is likely to marry a Pillay or Moodley.

Unfortunately for all of those patriarchs among you, this is an artificial imposition; the underlying genetics do not easily carry the paternal structure. The major carrier of our genetic information is women and the information is carried from mother to daughter.

Females are the trunk, males are simply leaves on the tree.<sup>96</sup> This is an astounding model. In an Intelligent Design-style irony, alpha males are little more than agents of strong females creating a strong message that ensures that their genes are passed on to other females.

It is a disturbing thought, an ape species consisting of females, breeding with each other and using males as little more than the means of messaging the genes between them. From bonobos to bank managers we are eager to deliver those packets of messages. The patriarchs' heritage tree is a figment of male imagination.

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<sup>96</sup> If you want to spend a few hundred pages reading this up, I recommend *The Descent of Y* by Stephen Jones.

The underlying genetic tree is not what we see in the population registry. In a devious society like Africa, brought up in the Golden Age of Sex, many children are not even the children of the fathers that they think they are.

Genetic anthropology is the study of how genetic markers relate to human populations. This is done by analyzing the DNA of individuals and inferring interpretations about groups. Your DNA patterns are most similar to those of people close to you and less similar to those of people far away from you. For example we share 60% of our DNA with a banana and over 99% with a chimpanzee, *Pan troglodyte*.

DNA is found in the cells of living creatures. All life has DNA and only life has DNA. Each of us has a unique genetic finger print. Using DNA, life is able to communicate information from generation to generation. DNA is simply twisted pairs of four proteins – adenine, cytosine, guanine and thymine – linked into one of only two base pairs. What makes these two base pairs special is that they can link into complex structures, much like bits and bytes in software.

Simple blocks can build a complex program. Chromosome 1, the largest of the 23 human chromosomes, carries 220 million base pairs.

Genetic anthropology has expanded in parallel to the power of the desktop computer as a corollary of Moore's Law, that computers double in power every 18 months. As they double, so does the ability to compute the genetic code. Genetics is a numbers game. One of the creationists' big arguments for Intelligent Design, and a pillar of Aquinas's proof of God, is that of complexity. "How can something as complicated as life, simply just have made itself?"

Genetics has taught us that life is not complicated, it is in fact simple, four proteins linked in two base pairs. It is the software that is complicated, and even now we are busy unraveling its algorithms.

DNA is first isolated by Crick and Watson in the early fifties. We Settlers make our contribution through the unlikely presence of 2003 Nobel Laureate Sydney Brenner. Brenner is born and bred in Germiston, a suburb on the wrong side of Johannesburg,<sup>97</sup> and graduates from Wits in 1951. He describes himself as “not a good medical student”. He fails his final year and as inspiration to any college dropout, gets off the canvas and comes back to win a Nobel Prize. At Wits, Dart and Broom teach Brenner anthropology and paleontology. Brenner becomes a pioneer in molecular biology, which is a precursor to the study of genetics.

Brenner moves to England, works with Francis Crick through the exploding age of genetics and is part of the science that unravels the genetic code. He works on techniques for reading the sequence by analyzing a simple round worm or nematode called *Caenorhabditis elegans*. “I became interested in how the new techniques of cloning and sequencing DNA could influence the study of genetics and I was an early and active proponent of the Human Genome Sequencing Project.” Brenner goes on to help develop a massive parallel method of sequencing DNA. This opens up what we know as modern genetics.

Brenner also coins the term “junk DNA”, which makes up 97% of the genome, DNA that does not code for anything as far as we can tell. When challenged with the argument that God would not have created us with 97% of redundant or useless DNA, Brenner retorts, “I said it was ‘junk DNA’, not ‘trash DNA’. Everyone knows that you throw away trash. But junk we keep in the attic until there may be some need for it.”

Perhaps it is his Lithuanian Jewish background that holds back the atheist which tends to surface in every biologist, Brenner spends too much time in the lab and not enough at the computer, where even the best of his generation struggle with the new technology.

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97 I was born there myself. It is like Paramatta or Queens, a blue-collar area.

Junk DNA is not God's error nor has in it any deep mystical meaning. There is a very simple explanation. In the movie business they call it the cutting room floor, in computer science we call it "refactoring".

Refactoring is the process whereby a programmer goes over an already working piece of code to take out any redundancies and to improve and tighten the algorithms that are used. DNA obviously doesn't have a refactoring mechanism, either because it wasn't so intelligently designed, or more likely because when it sets out two billion years ago, as Dawkins so often says, it actually has no direction and simply keeps collecting information in the only way that it knows how, RNA recombination.<sup>98</sup> The Old Man has taken the Guys in the organic chemistry department out to lunch. It is a recurring theme of this book - there is no Vector of Evolution.

Brenner stands with the soft option that we still don't know what function the junk DNA might have, but we will, eventually, learn that it does have some purpose. It takes 15 years at \$200 million per year to synthesize the DNA of the Human Genome Project, which begins by sequencing three billion nucleotides to find what are initially estimated to be 100 000 genes. However, as the genome reveals itself, we are faced with the conclusion that we may not be so complicated after all. The 3% of the genome which constitutes the active genes reduces to as little as 35 000 genes that actually go into the active making of one human being. Computers let us deal with much more complicated problems. A simple desktop computer accounting application like TurboCASH comprises 250 000 lines of code.<sup>99</sup>

In computer science we say that there is nothing as permanent as a quick fix. Code refactoring is any change to a computer program's code that improves its quality or readability or simplifies its structure

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<sup>98</sup> Dawkins takes this question on over 200 pages in *The Blind Watchmaker*

<sup>99</sup> TurboCASH is a software project that I manage and develop.

without changing its output results. Over the last 20 years methods have developed to optimize refactoring, improve code performance and reduce redundancy. Refactoring is never a project priority, because the people in charge are more inclined to work on the bits that don't work, rather than on those that are already working. When DNA began transferring information through genes it could have had no idea where evolution was going to take us. The language to transfer this information would have been like our early computer assembler languages, but without the means to evolve the way we have evolved digital technology in the last 30 years.

Refactoring is a new concept in computer science. Most of those involved with it are still alive today. When these atheist programmers die and are sentenced to an eternity working at Intelligent Design, I am sure that we will see a vast improvement in the structure of DNA. With the Old Man still resting on the seventh day and Broom telling us that evolution has stopped, we may have to wait until tomorrow to begin, but the problem needs urgent attention. The amount of wasted protein used up sequencing junk must be horrendous, not even to mention the racks of hard disks storing terabytes of irrelevant evolutionary information in the server room.

DNA analysis leads to some startling conclusions. *Pan troglodyte* is our closest living relative. We are not separate from the apes, but very much part of them. We have more in common with chimps than chimps have in common with gorillas. We are common members of the group of apes, and that in turn, along with monkeys and lemurs, is part of the group of primates. Primates are mammals, which are part of vertebrates. Vertebrates are one of the main genera formed in the Cambrian Era, 565 million years ago, in a carbonate-rich sea, where formation of calcium structures facilitated multicellular life. Before the Cambrian Era there are no multicellular fossils.

Suddenly in the rocks, in a flash of five million years, all the modern structures of multicellular life as we know it today are laid out. On the fifth day, a Thursday, Intelligent Design has a bumper day at the office and everyone works late to get the checklist finished. Even Jesus himself offers to weigh in and provides fish and rolls for dinner, but the Old Man saves the day by going out himself to bring back pizza and espresso.

All Cambrians are sourced from *Eukaryotes*, a type of bacteria that has an advanced nucleus. For 2 billion years the *Eukaryotes* carry their legacy in the DNA. Nuclear DNA is the core, passed down in the nucleus of the cell and mitochondrial DNA is the DNA that is in the sac of the cell. The nucleus is the brain of the cell. *Eukaryotes* are the *sapiens* of the bacterial world. We only truly see evidence of multicellular life from the Cambrian period 565 million years ago. There are small glimpses of it before that in the Ediacaran deposits. But is all very vague. Ediacarans leave marks, not fossil. It takes the rich presences of carbonates to help leave a trace for us. There must have been multicellular life before the Cambrian, because it is in this period that the *Eukaryotes* develop the mechanism of using the DNA as a blueprint to build multicellular structures.

Mitochondrial DNA is found only in the bulky slushy stuff of the outer cell, probably inherited from the virus parasites that infected *Eukaryotes*. Eukaryotes are different from the simpler cell forms *Eubacteria* and *Achaebacteria* and go on to develop into complex life forms including us. In the female body the largest cell is the egg and this is about 1000 times bigger than a human sperm. So when mommy and daddy have a candle-lit dinner and go off to bed early, what is set up is a race of millions of tiny cells rushing off to carry their DNA to the biggest cell. As this is a race to the death, there is not a lot of room in the sperm cell to carry mtDNA.

We are not really sure yet how *Eukaryotes* form. It is possible that they are simply an unfinished project started by Intelligent Design on the third day of creation that lie around for 1.5 billion years until on the sixth day the Old Man comes in, has a fit about the mess and has everybody scrambling to tidy up their out-trays. It is also possible that a visiting spaceman took a piss off the edge of his spaceship, but I am holding out for a more rational offering.<sup>100</sup> The idea that man is anything more than just another component of life is simply not borne out by the numbers. The DNA of *Homo sapiens* fits neatly into the messy tree of life alongside, not separately from, all other living creatures.

Mitochondrial DNA is passed down only by your mother. To understand why we have always believed the fathers to be the primary line, we need a short diversion into the art of masturbation, one of the great things about being 15 years old. “*Bliss was it ... to be alive, to be young was very heaven.*”<sup>101</sup> My father always told me that there are two types of men, those that masturbate and those that lie about masturbation.

Masturbating schoolboys is probably a recent anthropological development. As far as we can see from the fossil record, *Homo erectus*, Cro Magnon and *neanderthalensis* lived to about 35 years old. So by 15 years old the Tswana boy and his buddies are kicking into top gear and creating the next generation. It is the modern artificial delay of parenthood that has all those guilty schoolboys going blind and spreading warts.

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<sup>100</sup>My barb at my good friend Michael Tellinger. His idea in *Slave species of god* is that we are made from a race of aliens. Best explanation I have come across is in *The Origin of Life* by Paul Davies and he basically starts it out a few kilometers underground.

<sup>101</sup>From the poet William Wordsworth.

From my reading of *Portnoy's Complaint*, masturbation is not limited to South African Settlers, even American Jews do it. This of course is strictly forbidden by the Talmud. No Jew may spill his seed upon the ground. I am not a sure how the rabbi himself gets by, but my experience as a 15-year-old taught me that unless you did it at least once in the evening before going to bed, you would wake up out of dreamland thrashing in slimy quicksand.

Even today our view is dominated by the Talmud, a 3000-year-old view of what semen is, namely the embryonic baby itself. The original thinking is not that semen is not merely a component, but is the whole thing. Women are merely ovens in which to stick the cake for baking. Dropping it on the ground is tantamount to abortion or murder. Jews see heredity as basically a father-to-son activity. That's where all those "David begat Saul begat David begat Saul" lines that pepper the Old Testament come from. With such archaic theology and misguided beliefs on human origins, one wonders how the Jews ended up owning 50% of America. Maybe Intelligent Design simply did pick them as the chosen race.

When the smallest cell in the body, the sperm cell, meets the biggest cell in the body, the egg, she basically gets most of the say about where the children go to school. Only the mother's mtDNA in the egg cell gets carried to little Johnny. Rather than being an oven, mummy takes over as the primary builder. She builds the child using the joint blueprint, but adding her own chemicals. As every architect knows, when someone else builds to your plan, without recourse to you, it often does not turn out exactly as you planned it. The real phylogenetic tree gets carried from mother to daughter. Tough guys like you and me and even mummy's favorite boy, are just leaves on the tree, as are women that have no daughters.

If mtDNA is passed from mothers to daughters and not through men, then after each generation the number of relationships that carry the mitochondrial message decreases. Do the math. In  $n$  generations it reduces by approximately 2 to the power of  $n$ . Over time the tree gets very thin indeed. Follow it all the way and you will see that in any population, this converges to a common female ancestor of the whole population. It is tough in the genetic jungle. For someone like me, a mere leaf on the phylogenetic tree, living in a godless world with messaging my mother's DNA to another female as my sole purpose, I comfort myself with the knowledge that I may be small, but I was certainly the fastest sperm in the squirt.

Population genetics studies gets really exciting when we compare groups of people with each other. mtDNA is most interesting because it is simpler in structure and simpler to analyze. Your mtDNA is closest to that of your mother, but not an exact match. More importantly, in your sister, each replication of the mtDNA introduces small changes from her mother. These are called mutations and in mtDNA these mutations occur faster than in nuclear DNA. This makes it easier to pick up differences in closely related populations with recent divergence.

Similarly the Y23 chromosome, is passed only from male to male. Males have an XY chromosome and females have an XX chromosome. Also non-recombinant and subject to mutations, males can only inherit the y-chromosome from their fathers.

Y-chromosomes are great because they give us an independent cross-check on mtDNA. *Fellows of the Creationist Society for the Advancement of Intelligent Design*, who firmly believe that the Vector of Evolution is pointing straight up at us, should consider that at a DNA level, *sapiens* males share the 58 Million base pairs in Y23 chromosome with *Pan troglodyte* and not with our own females. A man is closer to a male chimpanzee than his own sister!

We can interpret the number of similarities and differences as being the spaces between individuals. For example there will be fewer variations between members of the Copeman family than between members of the Settler race, which will have fewer variations than between Europeans, etc. We can also interpret the differences as differences in time. It takes approximately 25 years to make a generation step through time. The longer groups have been apart, the larger the divergence. For example, 100 years represents 4 steps and 40 steps happen over 1000 years. When we look at large data sets, some remarkable conclusions arise.

Firstly there are markers in the DNA, such as the M168 polymorphism, which is found *only* in populations outside of Africa and in *all* populations outside of Africa. Secondly, all people outside of Africa have a much lower mtDNA variation than those inside Africa. That means that there is less difference between an Aborigine and a Swede than there is between a Nigerian and a South African!

In summary, all Africans descend from a single African woman living approximately 160 000 years ago and from a single male living less than 100 000 years ago. All people outside of Africa descend from a small group that left Africa no more than 80 000 years ago.

The mtDNA evidence is the final poison that chokes the life out of the multiregionalists. All of *Homo erectus* and the Neanderthals are wiped out by the descendants of a small group of *sapiens* that left Africa 60 000 years ago.

It gets worse for the Eurocentrics. When we analyze old samples of Neanderthal DNA we find it distinctly different from *Homo sapiens*. That means that *H. Neanderthalensis* is a separate evolutionary experiment that ends in destruction 35 000 years ago. There is only one conclusion. All six billion of us today are African and of very recent descent, no more than 200 000 years old.

These revelations are very embarrassing for all those “ancient” *H. Sapiens* samples of the 1980s and 1990s. Unless a superb counter-argument can be presented, they are doomed to become *erectus* variations, bad science or mini-Piltdown. England is cold and wet and in winter is rains. The Eurocentrics are truly thwarted.

The mtDNA hypothesis covers so much in one burst. The result is so astounding that the proponents stop short of saying we have a single woman as an ancestor. They water it down by saying that we all come from a small group of African women. Have no fear, as an applied mathematician I have a fair idea about transfinite number sequences. Let me finish it off for them: assume that we agree that we all come from, say, 200 women. Now the same rules of diminishing maternal ancestors apply to this group and in a group of 200 women it takes no more than a few generations to get them down to a single common ancestor. There is no getting away from it, you, me and all the other six billion people alive today share a single great-grandma and when we go round to her place for her next birthday lunch she is likely serving fried chicken and collard greens.<sup>102</sup>

Mitochondrial Eve does not mean that she is the only woman living at the time. That would be Genesis. A single woman carrying all of humanity would likely lead to extinction. I guess when the prophets write Genesis they do not have the benefit of years of mathematical modeling to retrodict that. Eve is part of a group which lives around 200 000 years ago and circumstances – her good looks, ability to pull guys at wine bars and bear them female children – happen to make her special. She lives in a tribe, but Eve likely has many daughters, which is the main reason she becomes the mitochondrial root.

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<sup>102</sup>My jibe at Afro-Americans and particularly Tiger Woods and the Master’s Dinner fiasco with “Fuzzy” Zoeller. Afro-Americans are often racially oversensitive, a form of defensive racism. Tiger Woods is a great golfer and a lousy social politician.

True to form, the mtDNA researchers have come out to bat for the home team, so the last few years have seen the American computers cycling away analyzing the migratory movements of North American Indians and relating their European immigrant populations to each other. Bryan Sykes describes it in *The Seven Daughters of Eve*, Stephen Oppenheimer describes it in *Out of Eden*. Briefly, 60 000 years ago a small group of *Homo sapiens* walks across the Red Sea at the Gulf of Aden. They didn't have to part the sea like Moses. A current ice age lowers the sea level and creates a land bridge over the Gulf of Aden. These people walk across the southern part of the Levant and into India, South East Asia, Indonesia and by 50 000 years ago they reach Australia. A second group splits 40 000 years ago and walks across the top of Israel and into Europe, where they lay waste *H. Neanderthalensis*.

Twenty thousand years ago they cross the frozen Bering Strait. By 9000 years ago they cross the Isthmus of Panama. Two thousand years ago Taiwanese sailors cross the Pacific Ocean and colonize New Zealand and the Pacific Islands. At a similar time a group of Austronesians make the incredible boat journey from around Papua New Guinea to Madagascar! All this has been proved with mtDNA.

Wherever *H. Sapiens* spreads he brings a wave of destruction that overwhelms *erectus*, *neanderthalensis*, the woolly mammoth, large Australian marsupials, the flightless birds of New Zealand, the sabertooth tiger, the giant sloth and most animals over 50 kg. The exact nature of this is not fully documented, whether it is direct killing or simply crowding the locals out of the food chain. Seven thousand years ago, with the introduction of grain farming, the process intensifies. With *H. sapiens* comes his entourage of cattle, dogs, rats, cockroaches and bent grass each crowding out the local equivalents.<sup>103</sup>

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<sup>103</sup>Bent grass is beloved by golf course green keepers. In Africa this is a water-guzzling, fertilizer-loving invasive carpet that leaches the earth.

Untold numbers of species are lost. This process is accelerating with industrialization and a burgeoning population. But this is not a book about ecology. Read Richard Leakey's *The Sixth Extinction* or Al Gore's *An Inconvenient Truth* if you need to follow ecology. This is about finding the first humans and the Garden of Eden. If we get there in time we can stop Eve biting the apple.

Most Americans can't tell the difference between Cape Town and Cairo, so when mitochondrial Eve is marked as being African, that's it, she's consigned to some unknown location in Africa, "probably East Africa". Americans see Africa as a homogeneous blob and go back to making prehistoric movies. The East Africans are very happy to play along.

Moore's law marches on, it gets easier to do these analyses and it soon becomes apparent to those of us who care that Africa is not simply one race blob. For those of us that live here, the paleoanthropology debate is very much alive. No one has yet claimed the Garden of Eden. Richard Leakey alludes to its being the Rift Valley. But he is a captive of his patriotism and his academic discipline. Leakey is a bone collector and Africa is not throwing up any bones. We do not have these limitations. Computer scientists and applied statisticians use and understand software models, databases and Bayes' theorem.

The early battles for the soul of paleoanthropology have been won with a Cessna, a Landrover, a pick axe and a sorting table. The next battles will be fought with desktop PCs, Internet databases and algorithms. So while paleoanthropology in the 20<sup>th</sup> century is advanced by crunching stones, in the 21<sup>st</sup> century it is being advanced by crunching numbers.

Genetics and its impact across multiple disciplines, particularly for paleoanthropology, would be hamstrung without statistics. I learned my stats from Doug Hawkins, Clive Hunt, Paul Fatti, Ari Uliel and

Geet de Wet. They are all members of that elite group of humans more intelligent than myself. Fortunately they were able to impart to me a grassroots level understanding of multivariate analysis, probability theory and statistical inference.

For the last 150 years we have relied on bones to reveal to us the story of human origins. We are going to need to change our techniques to go further. There is a major limitation with fossils, namely that they require special geological conditions to form. African microbiology has a hunger for calcium and jumps on any opportunity to consume it. That is why, in Africa, limestone caves or deposits are a great place for skulls to survive. While fossils form easily at the micro level, it is not easy for a calcium skull to survive under current African conditions and not be consumed first by the biological scavengers and then by geomorphology and chemical weathering elements.

It is great that we have fossil sites at Sterkfontein and Olduvai, but they have led us to spend 50 years overanalyzing *Australopithecus* bipedalism. We get it, humans are chimps that changed from swinging between trees to running between them. Finding the first modern humans using these methods is not proving that easy; there are simply not the bones to back it up. Worse, when I finally do get you to the Garden of Eden, if there are any bones left, you are going to need a BCD and regulator<sup>104</sup> to collect them.

In the new age of paleoanthropology, we have a wealth of information coming from a number of disciplines. We are able to gather these together and build models which use data from multiple sources. We are able to model scenarios and test these with statistical methods, all without leaving the office. We don't have to pin a bone to within 1 cm of a layer of rock, when we can just as easily use likelihood functions to give us the most likely outcome based on the

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<sup>104</sup>Buoyancy control device and breathing regulator – diving equipment. It is going to be a wet undersea trip.

observed data. We can use data from the most remote places. Best of all we can now calculate it on a standard laptop computer.

Statisticians are the linemen of modern research projects. I always loved the controversy caused by the Bell curve studies<sup>105</sup> and when the NFL commissioned a similar one, testing the intelligence of American football players, it was hilarious to see that the big blockers that play my position, offensive line, come out as the most intelligent. All the fancy boys with the clean shirts playing receiver and quarterback, were shown to be robot dummies. Statisticians are always in the background protecting the paleoquarterback. Their names are on all the papers in supporting roles. Good work is rarely recognized and you only see them when the team screws up and they are brought out of the backroom to face the blame.

While probability and much of the math underlying statistics has been around since the 18<sup>th</sup> century, it is only through Ronald A. Fisher starting in the 1920s that it enters the modern age as we know it. In addition to analysis of variance, Fisher invents the technique of maximum likelihood and originates the concepts of sufficiency as well as the common F-distribution. Fisher, known as the father of modern statistics, is a giant figure in the science.

What makes Fisher interesting to our story is that he is also famous as a starter of modern genetics. His passion in the early '20s is eugenics. But Fisher also stands on the shoulders of giants.

Remember Francis Galton, Darwin's cousin, who invents eugenics but gets written out of history by Adolf Hitler? Modern natural science and Fischer owe much to Galton. Largely unknown today, Galton was a giant of the 19<sup>th</sup> century, a geographer, meteorologist, tropical explorer, founder of differential psychology, inventor of fingerprint identification, pioneer of statistical correlation and regression,

<sup>105</sup>The Bell curve studies showed intelligence differences between black and white respondents. Much of this has now been discredited, but it remains a fascinating area of research, if only because the stakes of the outcomes are so high.

convinced hereditarian, eugenicist, proto-geneticist and best-selling author.

Galton invents a mathematical technique with far-reaching effects called regression analysis. This thinking is defined further by Karl Pearson with correlations and the famous chi squared test and further developed by Fisher into the Monte Carlo method and the maximum likelihood method. This movement brings about a revolution that dominates all subsequent natural science. Observed values are not taken for what they are, but as a set of possibilities with probabilities attached, namely stochastic variables. The genetic theory invented by these early statisticians is remarkably coherent, yet it is “too mathematical to interest most biologists, not mathematical enough to interest most mathematicians”. Louis Leakey and the splitters did not to know any of this. For fifty years, they jump onto any bone tossed out by Intelligent Design and build civilizations on one observation, paying little heed to *a priori* assumptions.

I spent five years of my life using methods pioneered by Galton to model the American and the South African economy. I feel I owe it to Galton to defend him in history. As Stalin and Zhukov found out, taking on Hitler can be a challenging experience. The eugenics that Galton created could never have foreseen the 20<sup>th</sup> century madness, which has much to do with the savage nature of the European races and little to do with statistics.

Galton invents the concept of “regression towards the mean”. In 1886 Galton is concerned about the “rate of regression in hereditary stature”, and compares children’s height with their mid-parent height. All heights are expressed as *deviations from the median*. From this we get as good a summary of the “regression effect” as we are likely to find.

Galton summarizes these results:

- *When mid-parents are taller than mediocrity (by which he means the median), their children tend to be shorter than they are*
- *When mid-parents are shorter than mediocrity, their children tend to be taller than they are*

A plot of seed weights across two generations is presented at a Royal Institution lecture in 1877. Galton has seven sets of sweet pea seeds labeled K to Q and in each packet the seeds are of the same weight. He chooses sweet peas on the advice of Darwin as sweet peas tend not to self-fertilize and the seed weight varies little with humidity. He distributes these packets to a group of friends throughout England, who plant them. At the end of the growing season the plants are uprooted and returned to Galton. The seeds are distributed to friends because when Galton tries this experiment himself in Kew gardens, the crop fails. With these practical credentials, bet your money that Galton is a lumper. With this kind of field record, statistical inference says he never found a fossil in his life.

Galton finds that the weights of the offspring seeds are normally distributed, like their parents, and that if he plots the mean diameter of the offspring seeds against the mean diameter of their parents he can draw a straight line through the points – history’s first regression line. He also finds on this plot that the mean size of the offspring seeds tends to the overall mean size. He initially refers to the slope of this line as the “coefficient of reversion”. Once he discovers that this effect is not an inheritable property, but the result of his manipulations of the data, he changes the name to the “coefficient of regression”.

This result is important because it appears to conflict with the prevailing thinking on evolution and natural selection. He goes on to do extensive work in quantitative genetics and in 1888 coins the term “co-relation” and uses the now familiar symbol “r” for this value.

In additional work, Galton investigates geniuses in various fields and notes that their children, while typically gifted, are almost invariably closer to the average than their exceptional parents. Galton later describes the same effect numerically by comparing fathers’ heights to their sons’ heights. Again, the heights of sons both of unusually tall fathers and of unusually short fathers are typically closer to the mean height than their fathers.

In the 1920s, Fisher, takes Galton’s ideas and formulates them into a coherent mathematical system. Fisher is an ardent promoter of eugenics, which also stimulates and guides much of his work in the genetics of man. He develops ideas on sexual selection and mimicry, and the evolution of dominance. He famously shows that the probability of a mutation increasing the fitness of an organism decreases proportionately with the magnitude of the mutation. Translated, this means that evolution works best with lots of small steps. He also proves that larger populations carry more variation so that they have a larger chance of survival. The principles he sets forth are the foundations of what is today population genetics.

Fisher’s important contributions to both genetics and statistics are emphasized by the amusing remark by the American statistician L.J. Savage,

*“I occasionally meet geneticists who ask me whether it is true that the great geneticist R.A. Fisher was also an important statistician!”*

Fisher may change the way that we think today, but like so many other leading scientists he is also fallible. He defends the tobacco companies against accusations that smoking causes lung cancer. He compares the correlation between the import of apples and the rise of divorce in order to show that correlation does not imply causation.

Fisher is opposed to the Unesco statement of race. Evidence and everyday experience show that human groups differ profoundly “in their innate capacity for intellectual and emotional development”, that the “practical international problem is that of learning to share the resources of this planet amicably with persons of materially different nature,” and that “this problem is being obscured by entirely well-intentioned efforts to minimize the real differences”.

Fisher embodies the paradox of a scientist with strong religious convictions and still a pillar of the evolutionary movement.

He says,

*The custom of making abstract dogmatic assertions is not, certainly, derived from the teaching of Jesus, but has been a widespread weakness among religious teachers in subsequent centuries. I do not think that the word for the Christian virtue of faith should be prostituted to mean the credulous acceptance of all such piously intended assertions. Much self-deception in the young believer is needed to convince himself that he knows that of which in reality he knows himself to be ignorant. That surely is hypocrisy, against which we have been most conspicuously warned.*

Mr Hitler and his Jackboots invade and occupy eugenics and the whole concept of regression analysis goes underground for 50 years. This branch of science is lost on Louis Leakey and even Richard and Tobias are knucklewalkers in the field of statistics.

However the horns of destiny are closing down around the splitters. When regression finally gets pulled off the top shelf of the library, dusted and used in the 1970s, ironically led by Jews like Lawrence Klein,<sup>106</sup> things start to loosen up in the analysis of scientific data. Finally we are able to talk rationally about probable outcomes, without having to prove them like mathematical theorems. Don't confuse maximum likelihood functions with Christian "faith". I am not asking you to believe things that are not proved. I am merely asking you to examine the world through scenarios and use the eyeglass of possibility and probability for proof.

Statistics in South Africa is a late starter and then is stillborn into the apartheid era. The Department of Statistics starts at Wits in 1957, led by John Kerrige, a probability specialist famous for flipping a coin 10 000 times in a WW2 prisoner of war camp and finding that of 10 000 spins 5067 are heads. This is why today in football matches the world over, whenever the referee calls for the toss, the captain invariably shouts "Heads!"

The first PhD stats student to graduate at Wits is Douglas Hawkins in 1969, who goes on to become Head of the Faculty. In 1986, in the face of the academic boycott, he leaves South Africa for a successful career in the US. This is part of the "decephalisation" of South Africa, commonly known as the brain drain.

Hawkins is now a leading authority on recursive partitioning at the University of Minnesota. He also develops software to analyze the human genome. This branch of statistics is core to population genetics.

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<sup>106</sup>In case I am ruffling any of your Jewish feathers, or causing my mother's Jewish family ashes to turn in the sand, my master's supervisor, Ari Uliel, was an Israeli and my hero, Nobel Laureate Lawrence Klein, was an American Jew. I spent 10 years learning Kletzmer music from Ephriam Katz.

A large amount of multivariate data, such as one would find in the genome, can be sorted it down to understandable variables. This multivariate technology will be important once we try to go inside the African code and get back to the beginning of modern man.

Statistics for genetics is a multivariate lion. Statistics for paleo-anthropology is a lamb. Regression analysis moves even further forward in the late 20<sup>th</sup> century with the introduction of Bayesian methods. It takes a scope bigger than this book to explain Bayes' theorem.<sup>107</sup> Bayesian analysis is a mixture of set theory and probability theory. In its simplest form, the probability of something happening is equal to the sum of all the other alternatives not happening. To prove that something is a dead cert, you simply have to prove that everything else is not possible. More realistically, to prove one thing likely, you have only to prove that every other possibility is unlikely. It is confusing, and it gets really complex when we have to include a large number of scenarios with all sorts of variables affecting the outcome, particularly when conditional probability is involved. Fortunately that is what computers do for us and the more data we add, the closer we get. Spare a thought for me 25 years ago, as a researcher in my twenties, squeezing 200 linear and non-linear equations, in various states of multicollinearity, into a mainframe computer with 64K of ram on a time slice with 30 other users.<sup>108</sup>

Today, paleoanthropology and genetics have all the computer power they need. To prove a point, we may have to sample the DNA of the entire Afrikaner tribe, but in the end we will approach certainty. The spin-off for us that modern statistics is a very late development is that it catches the Guys at Intelligent Design right off-guard.

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<sup>107</sup>Bayesian methods have come to dominate most areas of social science and finance. I predict that future steps in using genetics as a means of prediction and analysis will be driven by the use of Bayesian methods.

<sup>108</sup>Econometric models can get complicated. Usually very little benefit is gained by complexity; it took us 20 years to discover that.

They can't understand multi-variate analysis either, so very quickly we are able to see through their weak efforts to toss random bones at us and leach away the calcium of African evidence.

Multivariate analysis is a powerful tool in the hands of the field researcher and we can accurately fill in the missing gaps. As this starts to be applied, a much clearer picture will now emerge, no matter what the Guys at Intelligent Design have done to confuse us. Intelligent Design are going to lose this fight and unless they go cap in hand upstairs and ask the Old Man to send a worldwide flood, little is going to stop us from unraveling the whole human story.

The philosophy of science is dominated by the Austrian Karl Popper, who set up the concept of falsifiability, to set science apart from pseudoscience. This puts science very much in the realm of black or white. A hypothesis is true unless some evidence refutes it, in which case it is false. However things are not always that clear and we often come across grey areas. That is why Bayesian probabilities are being dug up after 200 years. Instead of viewing hypotheses as simple binary systems, true or false, we place probabilities on the outcomes and see if our hypotheses are correct. The more we can test them the more confident we are that the probability approaches one. These are likelihood functions.

Paleoanthropology suffers from a lack of information for making decisions. Bone collectors wait years for new information to appear. When it does, they closet and hold the information for their own purposes, sometimes for years. A multivariate statistician approaches this lack of information problem from a completely different angle. We use regression to fill in the gaps. Then we use maximum likelihood functions to choose the most probable scenarios. Human origins is blessed today with a cross-flow of information from many disciplines and The Internet is there to bring it instantly to our fingertips and neurons. There are only a finite number of possible

outcomes to the search for human origins. Each scenario has a certain calculable likelihood. I might not be able to show you the rotting corpses of Adam and Eve sitting under the tree with the serpent entwined around their necks, but I will get you close to the Garden of Eden, a maximum likelihood Garden of Eden, that is.

The entry of genetics into the search for human origins is almost an accident. It is a completely lateral idea that we can look into the past by analyzing the divergence in modern observations.

However it is the arrival of this data from a completely independent viewpoint that makes it so powerful. It has truly turned the search for human origins into a multi-disciplinary subject. The challenge for us today is to weigh these different observations and to come up with solutions. This has been the reason for the rise in Bayesian methods in analyzing data.

The two approaches of paleoanthropology and genetics in particular are radically different. In the classic scientific analysis put forward by Popper, we propose a hypothesis based on observable variables. Then by showing that there are no observations that falsify this hypothesis we are able to build up a body of argument that sustains the hypothesis. The Bayesian approach is to take the many hypotheses that exist, supported and attacked by multiple streams of data, and to put them into a comparative framework. By attaching probabilities to the outcomes and by qualifying the supporting data, Bayesian methods can compare the merits of the alternatives to the set of observations.

Let me simplify it. If I point you to the Garden of Eden and say, "Here is the Garden of Eden", what I actually mean is there is a 90% chance that this is the Garden of Eden, a 5% chance that it may be in Ethiopia, a 4% chance that it may be somewhere else in Africa and a 1% chance that it may be somewhere else in the universe, including the minimal possibility that Genesis may have been right all along.

These percentages make up a likelihood function, and under Bayesian rules, as we get more information, these probability estimates can change and become more certain.

Statistical logic is not always practical. A paleoanthropologist, a priest and an econometrician are stranded on a island, with only a sealed can of beans to save them. The paleo-anthropologist suggests they start digging into the dunes to look for old hand axes. Early man must have had some way of living here and he must have left stone hand tools which can used to hammer open the tin. The priest says that will take too long, they must humble themselves and pray to God to deliver them. The econometrician steps forward and says that both of them are wasting time, the solution is easy – *assume a can opener*.

How, you may reasonably ask, can flipping coins 10 000 times help us to find the Garden of Eden?

Things are not always as they seem. Once you look at likelihood functions, a completely different analysis may be derived. Let me give you a simple example. You can check into the Garden Route Casino at Pinnacle Point in Mossel Bay and begin playing roulette. You have a 48.6% probability of winning on a single spin. So you may win on some nights and lose on others. It may look like a fair game to you. It is a game of chance, a probability, the luck of the draw. A casino as a place to make money is an illusion. It is an absolute certainty that if you stay playing you will lose all your money. You can even pray for divine intervention, but as Einstein says, “God does not play dice”. Even Jesus would lose his shirt at roulette in the long run. There is no such thing in history as a single casino that loses money on the gambling tables.

Now having lost everything that you have at the casino, take one last look south out of your hotel window. All you can see is open sea, yet you are looking straight at the Garden of Eden!

I am prepared to come out and tell you where it all started, and yes you guessed it, it is right here in my own backyard.<sup>109</sup> South Africa is coming out of the dark ages and we are ready to make up the lost ground. The evidence is very much on our side. Pilgrim, pack your cassock and rosaries, we are going to begin our journey to the Garden of Eden ...

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<sup>109</sup> The irony of this ethnocentric thinking is not lost on me. The idea of geographical origin being related to modern nations or national boundaries is absurd. We are all of one race and any man shares more DNA in common with any other man of any race than he does with his own sister.



## **The Five Sons of Adam**

6<sup>th</sup> March 1957. Kwame Nkruma leads Ghana as the first country to free itself from colonial rule. He organizes the Pan African Congress with the aim of unifying the people of Africa. He loses his way and instead appoints himself as life president of Ghana and shelves the ideal of African unity. The ideal of Pan Africanism is still held in unlikely places, such as the pages of this book.

Africa is home to more than 900 million people. More than half the population lives in five countries, Nigeria, Egypt, Ethiopia, Zaire and South Africa. The colonial powers split Africa into over 50 artificial territories. Borders are dotted lines on a map. This masks a genetic diversity which is of a magnitude greater than the rest of the world combined. Africa contains the vast majority of the world's languages, over 2000. There are more tribes than languages. A school of anthropology founded around the ideas of Cavalli-Sfoza reports that variation in language is proportional to the age of a population. Find the source of a language and you will find the source of a people. This is a lot easier outside Africa. Inside, our current mtDNA technology will be challenged. In Africa there is as much diversity between the villages of the Cameroon as there is in the whole of Europe. You can see why the mtDNA specialists take the easy route – “Eve lived somewhere in Africa”.

For those of us who live in and love Africa, that “somewhere” is an important issue. Just because it gets complex and first world readers can't follow the details, doesn't mean that we wish to call a halt to the search. We want to pinpoint where in Africa human origins are centered. This is a complex problem.

Applied mathematicians approach a problem like the search for human origins using, in computer terms, structured programming. No matter how complex a job, we can break it down into component parts and then tackle those parts. It is called the top-down approach and, if you plan it properly, you can work each part separately, with the assumption that each of the other building blocks will be completed on time, and we get to the end point together. No need to go stumbling through the veld until you happen to kick over a fossil.

The first problem in identifying the earliest humans is to determine their tribe of origin. Step one is to break the 2000+ language tribes into a smaller manageable problem set. There are five major groupings in Africa. The original tribe is likely going to belong to one and only one of them. All the others are going to inherit from this tribe.

Separating a tribe in population genetics is a difficult process, more easily talked about than achieved. As the science of population genetics has developed it becomes clear to us that we have been fooled, just as those mitochondrial cuckolds were fooled, that what we think of as race and what it actually is are often far apart. Breakthroughs in genetics have helped dispel many of the earlier myths about race. Many scientists, including myself, see race as a social construct with little biological basis. At least 99.9% of any one person's DNA is exactly the same as any other person's, regardless of race. Of the 0.1% variation, 85% of all genetic variation lies within any local group. There is an 8% variation between ethnic groups within a race, such as between the English and Germans. On average, only 7% of all human genetic variation lies between major human races such as those of Africa, Asia, Europe. Any two individuals within a particular population are about as different genetically as any two people selected from any two populations in the world. It takes large data sets and complicated algorithms to determine the exact genetic differences.

The five tribes of Africa are the Arabs, the Negroes, the Bantu, the Pygmies and the Khoisan. This categorization may upset anthropologists, African nationalists, multivariate statisticians, colonial apologists and linguists. I am sure to have hurt someone's feelings by using the wrong name for their favorite group. I have spent most of my adult life fighting the forces of racist thinking, but here we are forced to categorize to solve this problem. We are all racially sensitive, this is a distinctly human trait, not one reserved for the world's number one golfer. It is in all of us.

Human origins is a branch of anthropology and we should be free to discuss racialism without the burden of racism.<sup>110</sup> I would argue that aggressive racist behavior is part of the same emotion as highly defensive racist behavior. Unless you are obsessed about your own racial importance, what does it matter what someone else's nomenclature is?

You can call me a saltpenis,<sup>111</sup> make fun of the Queen, think it is fine for the future king's wife to sleep with one his captains and even not be able to tell me who won the Ashes. I really won't be offended if you spill coffee on a recent reprint of the *The Origin of Species* or wipe your ass with the South African flag. For the record, you can safely bet that it is normally Australia that holds the Ashes and there is a strong body of us that believe that the appropriate punishment for royal infidelity is beheading, with the male party being roughed up in the Tower for a few days before the public event. Also, *The Origin of Species* is unreadable and you would be better off with 3-ply than using a flag.

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110 Racialism is the term that anthropologists use to describe the obvious differences between us. Racism is the illogical prejudging of individuals based on personal prejudice.

111 *Soutpiel*, the Afrikaans term for someone like me. One foot in South Africa, one foot in England, and you know what's dipping into the sea.

Now given my irreverence to my own race, I am sure you can forgive me if I have even less respect for your messiahs, sharmen, chiefs, holy books and monuments, and the petty rituals that you mistakenly think make you and me different. The fact is, that when we cut ourselves open and mix it with a chemical solvent, only a highly trained specialist can begin to tell our DNA apart.

North Africans shudder at the thought of being called Arabs. Similarly, my Muslim friends tell me, the Saudis also like to keep “Arab” as their personal domain. It is all in the marketing, I simply don’t know of another group name for North Africans. What would you have me call you? Native Arab may be important when deciding who gets the best parking at the mosque or at the race course, but for the rest of us it is a side issue in the search for human origins.

San people want us to call them by their tribal names including the clicks, like !Kung, which simply don’t roll off our Neanderthal tongues. Apparently San get iffy when we lump them into groups with people like the Khoi. For those San readers having difficulties with this, I recommend that you try listening to a bit of Mick Jagger, “because you can’t always get what you want”.

Negroes and Bantu want to be called Africans. Even “Blacks” is now determined as unsatisfactory. This follows the successful campaign of black Americans being rebranded from Negroes to Afro-Americans. Everyone wants to be called Africans. The problem that I have with that is that Settlers also want to be called Africans. Settlers may have decided to live in harmony with the rest of Africa, but don’t be lulled into believing that we intend to be marginalized here. Africans is what we want to be.

As this is my book and I am the one standing on the soap box, can I please simply use Negro to mean West Africans and Bantu to mean their East and South African offshoots. Mail me some better suggestions and I will consider altering the next edition.

At a DNA level, Bantu and Negroes are both West Africans. The Bantu being a recent offshoot that have successfully colonized east and southern Africa, coming around 3000 years ago from around the modern day Cameroon.

All the jolly hockey sticks stuff aside, what makes the gloves come off at this end of paleoanthropology is that the Garden of Eden simply isn't big enough to fit all six billion of us in. I have no choice but to pick the chosen race and put them into business class. The rest of us have to go economy. It is going to be a long flight. Take heart that it used to be longer. The boat ride was dammed unpleasant. Where 150 years of paleoanthropology has brought us to is that far from being separate races, humans are all from one very recent beginning. We should celebrate our diversity and enjoy the experience of other cultures. I can't say it for all the men I have met, but Allah be praised, I have always found beautiful women in all the races I have encountered.

Now that we are all a lot more cozy about African racialism, let us talk about skin color. Skin color is a key factor in racism and most people immediately equate Africans with black, and the blacker you are, the more African you are. It does not work quite like that. The genes that affect color lie around MC1R and about 30 factors indirectly affect skin color. The enzyme tyrazone determines how much pheomelanin (red yellow pigment) and how much eumelanin (black/brown pigment) you produce. Current anthropological thinking is that this was a balance between blocking out UV in hot countries and producing enough vitamin D in cold countries. White people get skin cancer in Africa and black people may get vitamin D deficiency in Europe. Factors such as protection of folate stores and resistance to malaria play important roles.<sup>112</sup>

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<sup>112</sup>This account by Michele Ramsay from *The Prehistory of Africa*.

Comparisons of MCR1 sequence variations by comparing African populations to Europeans, show us that humans adjust their skin color to the environment in about 10 000 years. In settled populations like those of Central Africa, Europe and Asia, skin color has resolved to its UV-determined levels.

In dynamic populations like the USA and South Africa, which are dominated by recent migrations, things will be different. Afro-Americans spending their hard earned ghetto bucks on their DNA tests find the surprising result that the darkness of their skin is not necessarily related to the percentage of African origin in the make-up of their DNA. It seems the melting pot is not reserved for white folks. Jews tell me that when you cross a Jew and a Zulu, you get a night watchman who owns the building.

Similarly the Southern African migrations are recent. On a scale of ten thousand years for adjustment, the entry of black and white populations into South Africa may be regarded as simultaneous. This explains why black South African are still so dark. If they hang out here in the lower latitudes and we don't get that global warming scare, expect them to get much lighter. No more need to buy those skin lightening creams that made the Krok brothers rich,<sup>113</sup> it will take care of itself. Similarly the mixing of a high MCR1 variation population like the Dutch with a low MCR1 variation like the Khoi, will explain why the Afrikaners still look so white. The genetic mix runs much deeper than that. Am I the only person who notices that Dutch tourists get sunburned just taking the cable car up Table Mountain, while Afrikaners don't even take sunscreen to the beach?

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<sup>113</sup>In apartheid South Africa, the two Krok brothers made a fortune selling skin lighteners to blacks who wanted to be whiter. Side products included hair straighteners. American readers will know them from the disastrous US product launch of women's hair removers in the 1970s.

The Arabs and North Africans are basically whites, a mixture of recrossing back into Africa. They are placed exclusively on the north of the Sahara. They have DNA almost identical to that of Europeans.

The Negroes stretch from Senegal in the West, right across the bulge of Africa and down to Central Africa. They make up the bulk of the genetic pool that reluctantly moved over as slaves to the West Indies and the Americas. These are the guys you see playing basketball and NFL football and running the Olympic finals of the hundred meters.

Explanations of the West African physical excellence vary, including the one that because the death rate was so high on the boat trip, only the strongest in the gene pool survived. I first heard this theory from a neo-social-Darwinist black-supremacist-nation-of-Islam type preacher in Times Square. Using similar logic to his, we can also assume that the ones who made it to the USA were not the brightest.

The cleverest would surely have been doing the exporting of slaves, not being exported themselves. Presumably the bright ones are still back there in Nigeria. None of this sounds like science to me, but it is indisputable that native Nigerians do make good sprinters.

The Bantu form an S curve from Cameroon eastwards through Southern Sudan to Kenya, back across the Congo, down to Angola and back across Zambia down the eastern side of South Africa. They come down as far as the Fish River. These are the athletes that you see winning all the middle distance races.

The Pygmies cover a really small geographic space. They have basically been pushed back by the Negroes from the north and west and Bantu from the south and east, into the jungles of Central Africa and the Northern Congo. They are shorter in stature and have a redder color than the black West Africans. The caricature is of them creeping through the bush with painted faces, using bows and arrows to hunt forest buck and pigs.

In the 21<sup>st</sup> Century, you are more likely to find them selling airtime, logging rare hardwoods or sifting for alluvial diamonds. These would have been the “natives” that featured in *Heart of Darkness* or Stanley’s trip across central Africa. The Pygmies also mixed with 11<sup>th</sup> century Tutsis in Rwanda and were recently made famous as the Africans on the wrong end of the genocide.

The Khoisan live in a C shape from Botswana, curving down the west coast of Namibia and the Cape and along the Southern Cape up to the Fish River. They are a copper brown color and always feature along with Borneans and Amazonian Indians as archtypical representatives of how earlier man lives. Pictures of the San are usually old or staged for the camera. The agricultural revolution finally catches up with the San and since the 1950s most of them are converted to farmers, accountants and clerks, politicians, entrepreneurs and self-made millionaires.

Categorizing Africa into five groups is a gross simplification and we will need to look at this in detail. Here we are not trying to analyze accuracies, we are trying to eliminate broad possibilities. That is the nature of the top-down approach; first we have to eliminate 3990 tribes before we decide which of the last ten tribes are semi-finalists for the chosen race to get Eden’s front row seats.

Armed with these new revelations, let us see who in Africa qualifies to be white enough to be an associate member of the KKK and who is black enough to get a free house from the South African Government.

There are a number of techniques that we can use to pick out the oldest of these populations. The primary source of this information is mtDNA. Understanding haploid markers is really technical, it is a real brain-teaser to follow the data. I find Himla Soodyall, from the Division of Human Genetics of the National Health Laboratory at Wits, the easiest to read on African DNA.

She would probably be offended, but I am going to claim her anyway, as yet another proud example of the Settler/Wits dominance of paleoanthropology. Soodyall is from the University of Westville in Durban. She is a Settler of Indian origin, part of the largest group of Indians outside the subcontinent. She moves to Wits and sets up a stellar career leading the genetic analysis of African populations.

Population genetics is very young in South Africa and we struggle with general acceptance of its principles. Our current government is dominated by creationist thinking and while they have different agendas to their apartheid predecessors, the effect on bioscience is similar, namely restricted funding. What funding we do get is still tied in to the political sensitivities that pervade our young democracy. We find it difficult to look at our genetics objectively, and find it even harder to accept who we are.

James Watson, the co-discoverer of DNA, said of the motivation for the human genome project, “How can we not do it? We used to think our fate was in our stars. Now we know, in large measure, our fate is in our genes.” There is a tendency on the part of South African geneticists to soften the message of genetics. Professor Emeritus of Human Genetics at Wits, Trefor Jenkins, says, “I believe that we are more than our genes” or “People should be reassured that the geneticists are not all committed to what is called genetic determinism.”<sup>114</sup> When Jenkins says, “Unlike other animals, we possess consciousness and an awareness that transcends the strictly biological”, he borders on Paul’s Letter to the Ephesians. There is strictly no evidence that we have any ability to think away our DNA or pass on only the elements that we want to.

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<sup>114</sup>Trefor Jenkins, introducing Soodyall in *A walk in the Garden of Eden*

I call this *Chamberlain genetics*.<sup>115</sup> It is an apologist's attempt to be polite and to appease the fears of people too afraid to confront who they really are.

I have some very bad news for the paranoid; in the search for human origins, genetic determinism is exactly what we are after. As I have said earlier, distinction on the basis of race in the human race is unfounded. To solve the problem of human origins, we need to probe below this apparent homogeneous data and seek out the differences.<sup>116</sup>

We cannot compromise science for the goal of being polite to sensitive people. At this point I should remind you that we are being polite to *sapiens*, a people that stand convicted as guilty of one of the worst atrocities in evolutionary history. The giant sloth was polite to people and ended up on the menu. If you can't stand the heat in genetics then get out of the kitchen.

It's tough being on the payroll of the South African government and then making objective scientific comments about race. So while she can sometimes come to obsequious conclusions, my real criticism of Soodyall is for her non-rigorous use of external data. She says things like,

*In trying to understand the complex patterns of genetic variation among the peoples of Southern Africa, we have to use genetic data in conjunction with historical information gleaned from other disciplines.*

In South Africa it is all about being politically correct. Without Bayesian methods and without a probability framework from which to make *a priori* assumptions, research results just become subjective

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115 Neville Chamberlain is famous for appeasing Hitler prior to WW2, hoping that the genes would not seriously rearm for conflict.

116 A homogeneous population would have similar traits, a heterogeneous population would have variation.

ramblings.<sup>117</sup> Worse, without a quantified starting probability in a rigorous theory, the resulting data cannot be fed into the next experiment.

South African genetics is still a young science. Our biggest hurdle is likely to be that the results we discover will not suit the political ideals of the current racist thinking that is still so prevalent in South Africa. Over the next few years expect South African population genetics to “encephalize” rapidly, and researchers to loosen their ties under those white lab coats.

The DNA principle, applied to group identification, is that the more diversity in a given group, the older it is likely to be. Y-chromosomes and mtDNA are not part of the recombinant portion of the mating process, so their evolution is mutation rather than through combination error. mtDNA is particularly rapid in its change and therefore shows up very recent events. A whole lot of factors corrupt and affect this, but fortunately we have a really strong set of statistical techniques that let you see the wood from the trees. It is a little more complicated, but as a secondary backup, the y-chromosome, which is the smallest chromosome in humans and is available only in men, gives an almost independent analysis. The analysis of the y-chromosome in Africa lags behind the rest of the world. mtDNA is still our primary source of information for population genetics.

Pilgrim, see if you get this one. The y-chromosomes leads us back father through father and the mtDNA leads us back mother through mother, but this does not mean that it is our same greatgranny and greatgrandpappy. Each tree leads us to a completely different path of analysis. The independence of these two checks gives us near independent confirmation. There is nothing statisticians want more than independent input variables; we call it orthogonal data.

<sup>117</sup>*A priori* is a term used in Bayesian methods to describe the probabilities that we assume before doing an analysis. Rather than looking at all variables as being random, Bayesian methods prescribe values to probability.

Orthogonailty gets us the most affirmative results. In the statistician's kitchen it is the equivalent of live crayfish or fresh porcine mushrooms, we love it because our customers love a quality thermador or risotto.

Mitochondrial Eve is the most recent common ancestor of all *sapiens* women. Y-chromosome Adam is the most recent common ancestor of all *sapiens* men. Not only do they not have to be a married couple, they do not even have to live at the same time. Indeed Eve has been predicted as having lived 160 000 years ago and Adam as having lived 100 000 years ago. Jason Wilder and Mike Hammer of the University of Arizona, Tuscon, have an interesting explanation of this. Men and women differ in their participation in reproduction. More men than women get squeezed out of the mating game and so twice as many women as men pass their genes to the next generation. This means that primate alpha males like Robert Broom, Louis Leakey and Bill Clinton are not restricted to gorillas. It is simple, but tough for those on the bottom - some of us get more gals than the others.

*It is a pattern that's built up over time. The norm through human evolution is for more women to have children than men. There are men around who aren't able to have children, because they are being outcompeted by more successful males. We may think of ourselves as a monogamous species, but we're coming from an evolutionary history that's probably slightly polygamous. If we're shifting toward monogamy, it is so recent it hasn't left an imprint on our genome.*

*If just half as many males are getting their genes into the next generation on average as are females, then it implies more males are migrating to do that.*

The pattern that Wilder and Hammer see in our genes doesn't require mass migrations of people across continents. The sailors with a girl in every port could have done it. Or it may be that village women sneak out for trysts with tall, dark strangers. Either way, y-chromosomes get around.

Genetics is not the final arbiter for all matters of human origins. Let us understand the limitations. Firstly, American help is limited. American population genetics tends to work by sampling groups from American student campuses. The results reflect Africa versus Europe, but what they actually mean is Harvard vs Southern Baptist.

In the early 21<sup>st</sup> century African genetics researchers discover a great product. Afro-Americans have a deep spiritual hole in their lives in that they do not know where they come from. Whereas European Americans can look up their genealogy on a web site and in population registers in Europe, there are no records kept for those on the boat ride. So the killer app for African genetics has been sampling and classifying Afro-Americans. The emphasis is on a database of West Africans relationships. Surprise, surprise, most find they are between 30% and 70% of European descent. No wonder black Americans find room service slow in Africa.

The techniques required for tracing American origins are completely different from what we require to analyze human origins in Africa. Americans are dealing with an incoming immigrant population. They want to determine the source of the immigration. In human origins inside Africa what we are looking for is to isolate the original population from genetic data that has been clouded by successive waves of immigration.

Today approximately 36 million Americans out of 300 million are classified as Afro-American, say 12%. Does that sound about right to you? Let me correct your thinking with an extreme example.

A young German engineer comes to America and is sent to the south to work on the farms. For the first time in his life he meets African women and finds that they don't look too bad. His line of sons leads down to 1990 as a path of Y-chromosome DNA. Meanwhile a black American GI goes out one night in Berlin, where he finds the girls really friendly and ends up making the beast with two backs.<sup>118</sup> Nine months later he brings his new blonde wife and daughter with him to America. Her female descendants lead to a woman in 1990. Assume that all other partners in both chains are African Americans.

Fast forward to 1990 and picture a romantic candle-lit dinner at a dance club somewhere in the Mississippi Delta, followed by some mellow jazz, a couple of Jack Daniels and some dancing cheek to cheek. Current American phylogenetic techniques would tell us that the child of this meeting would have German y-chromosomes and German mtDNA. Yet any NFL scout at the combine can see that this black kid is fast enough to make the cut for the New York Giants.

I predict that Americans will go through a self-reidentification groth experience in the next few years. I will put it to you that there are three races in the USA, and none of them have anything like the proportion that have been ethnically plotted in the population registry. The Native American Indians are crossbred with both Africans and Europeans, with little to no "pure" native Indians left; there are pure European immigrants of a latter migration; and the vast majority of Americans are a mix of African and European descent. The lumper in me wants to say that there are in fact only two races in America, Europeans and mixed Afro-Europeans. Native Americans belong to the European tribe. Americans are so proud of their Clovis heritage, known euphemistically as the Pocahontas factor, that it seems such a shame to break it to them.

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118 *Othello* – I couldn't resist using that one Will.

The Native Americans are recent M168 carriers, part of the Eurasian tribe, that happened to walk to America over the Bering Strait 10 000 years earlier than their European cousins who make the walk to North America from Ellis Island.

North American Native Indians should in no way be confused with the ancient tribes of Africa, that have a lineage going back 150 000 years. There is very little primitive archeology associated with native North Americans, who arrive on the continent ready to kill and then proceed to do so unimpeded for 10 000 years. They perpetrate, first on North America and then on South America, a mass murder that would have made even the Gestapo proud to share the same genetic M168 markers with them.

So how much of the American population is in fact of recent African origin? The simple Mendelian ideas of fractions break down with DNA analysis. So to describe a person with one white grandparent and three black grandparents as three-quarters black is just bad statistics. One of the legislative quirks of racist America is the “one-drop” rule, which is introduced to keep up the numbers in the population of slaves.

You can imagine that African is not a popular classification that people like to choose. Any colonialist with a scrap of sense is trying to get himself and his children classified as white. Any trace of African descent makes you black. It is not very popular to declare any of your children black and offer them into a life of slavery. Understandably, Thomas Jefferson does not make a big noise about promoting his mixed-race children.

The main purpose of the one-drop rule is to prevent interracial relationships and thus keep the white race “pure”. In reality it is a response to the economic pressure of keeping up supply from a dwindling population of slaves.

Hold that thought for a moment, because if you follow my models of racial mixing, even the slightest fraction of mixing soon leads to completely mixed populations.

Colonial Africans are the largest racial minority in the US. Hispanics, Germans and Irish are also big groups, they all belong to the M168 European tribe, and for our analysis can be taken to be of one tribe, namely Eurasians. The US population registry of 1790 puts Africans at 750 000, approximately 20% of the population. In simple models of two populations that meet, if there is a 1% rate of mixing, after five generations 30% of the population will be mixed.<sup>119</sup> American Europeans and Africans have been living alongside each other in large numbers since the eighteenth century, or about ten generations. Any Americans that traces their family roots back to early colonial immigration are almost certainly likely to be of mixed race. American genetics does not see these results, because their focus is on finding the unique sources of immigrants, not on proving the mixing. The proof of mixing is in recombinant genes, population genetics focuses on non-recombinant genes.

The numbers and proportions may be slightly different, but Americans and South Africans not only have a similar colonial history, they also have a similar phylogenetics history, namely a small indigenous group, overpowered by waves of invaders from Africa and Europe. African immigrants are of course reluctant “invaders”. Forty-eight percent of Americans believe in creationism. White supremacy is closely correlated with creationism. Are white Americans even ready to accept their early African ancestry, let alone their latter-day African ancestry? I put it to you that the todays Americans are a *Nation of Coloreds*.

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119 See the illustrations for a detailed description of mixing population groups

If the might of American genetics is of little use to us in the search for human origins, then once again Africa is on its own. The rest of the world sees us as a homogeneous black box. Determining the internal politics of who comprises the chosen race is a uniquely African problem that we will have to solve ourselves. The African genetics business is a nascent industry with sparse studies to go on. The battle for determining the chosen race will go on for a while yet. Expect it to get nasty. One of the things that I truly love about Africa is that if you walk with bare feet, within a few meters you will get a thorn in your foot. If you drop your pants and squat down, you are sure to get a sharp prick in your ass. Shaka Zulu formed the toughest fighting unit in the history of the continent by making young boys toughen their feet by running on thorns. Africa is a hard place and if you make it here, you can make it anywhere. If you don't believe me, watch any Olympics or IAAF track meet.

A school of thought led by the creationists questions the methods of mtDNA analysis. They attack the models and the results based on the fact that the rate of mutations is difficult to track. These attacks are starting to look lame as a line of mathematical geneticists steps in and builds models that do not even require real data to prove the results. By making simple assumptions, really interesting results come out.

Richard Dawkins makes some interesting observations on the work of Joseph Chang.<sup>120</sup> By taking an isolated population and assuming a random mating pattern, Dawkins defines Chang 1 as the earliest common ancestor to all modern descendants. In a population of 5000 – he uses Tasmania as an example – the common ancestor can be as little as 14 generations back. He defines Chang 2 as the next significant marker, back when everyone in the population is either a common ancestor or has no descendants.

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<sup>120</sup>*The Ancestor's Tale*, Richard Dawkins.

He also makes the surprising, but unproven conclusions that at Chang 2, 80% of the population passes on all their genes to all their descendants.

The concept of a rapid dissemination of genes into a population is the final nail in the multiregionalist coffin. Only through an isolated population can we get a rapid evolutionary change and we can measure this accurately. Bruce Walsh of the University of Arizona, Tucson, is the world leader on the theoretical justification of the most recent common ancestor.

Walsh proves analytically that mtDNA and y-chromosome methods are both valid methods of forming genetic likelihood functions. Using various methods and various assumptions Walsh shows that these methods are robust. It would seem that it is game, set and match for questioning whether we have an isolated beginning or not. The evidence is pointing to Africa and it is pointing south.

Not everyone agrees with this analysis. The genomic project run by Spencer Wells and financed by *National Geographic* places “Adam” at 60 000 years ago in East Africa. This does not mean that he was the first man, but rather the one from whom we all inherit. Y-chromosome Adam had ancestors, we are just not able to go back past 60 000 years to determine them.

The genomic project recently investigated 600 African individuals and using mtDNA showed that the San people are the earliest split. They then go on to conclude, with logic I am unable to follow, that the San, carriers of the L0 marker, split off from an early East African population and walked southwards. To a proposer of the Out of Africa *carpensis* hypothesis you can imagine that this is like serving rotten shellfish to a Beachwalker. It simply does not taste good no matter how much curry you add to the paella.<sup>121</sup>

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<sup>121</sup>A Spanish dish consisting of rice and mixed seafood.

The fact that the y-chromosome counter runs out at 100 000 years is a major limitation on the power of genetics to look backwards. What we can see is that for nearly 100 000 year, isolated small pockets of humans lived separately and only recently joined back together. Its early days yet and we are only now starting to turn our attention to the early African history.

Seconds out, contestants to the center of the ring, let's get on with determining our ancestral winner. Knock the Arabs out, right up front. This is not only because of their nasty history of business practices which, for 500 years, makes children Africa's biggest export. The Arabs and their Bantu crossbred children, the Swahilis, are the ground shock troops of the slave industry. For hundreds of years their marauding bands terrorize a continent and break up villages and families. But that is not the real reason that Arabs are not the chosen race, the reason is simply that their genetic pool is almost identical to white Europeans. The North African Arabs are basically the first colonial wave to return to Africa.

Next knock out the Bantu, they are recent descendants of the Negroes. The mtDNA, backed up by autosomal y-chromosome DNA studies, point to a latter-day origin of the Bantu tribes. The Bantu only split away from Cameroon long after the initial Out of Africa exodus, in fact as little as 3000 years ago. This theory is backed up independently using language analysis. Luigi Luca Cavalli-Sforza has shown us that there is a strong correlation between language use and genetic relationships. This technique is best for working with populations no more than a few thousand years old. Using language analysis we can predict that the Bantu originated in the Cameroon and swept eastwards on the back of the early iron age and southwards on the back of the agriculture, beginning less than 2000 years ago. The Bantu have been the most successful of Africa's modern colonizers.

They may have originated on the continent, but their arrival in East Africa and South Africa is little different from that of the English; they are, by their own definition, Settlers! Now where did we put those bullets?<sup>122</sup>

Cavalli-Sfoza and his linguistic data do seem to contradict themselves. If the movement of Bantu people is so recent, why do they flake quickly into so many different languages? It would seem that in Africa there is more to language diversion than a simple analysis. Once our ancestors leave Africa, languages do diverge, but at a much slower rate.

Pygmies get short shrift in Africa, and they get it in this book too. The history of the relationship between the Pygmies and the Negroes is also not developed. The study of prehistorical genetic mutations doesn't seem to be as big a pastime in Accra, Ajuba or Kinshasa as it is in Nairobi, Addis or Jo'burg. The West Africans seem far more interested in cellphones and soccer.

My guess is the Pygmies first and the Negroes descend from them. This is little more than cigarette box anthropology, jaundiced by the prejudiced view of a white member of apartheid's lost generation. Because Pygmies share the same diminutive structure as the San and because they are reddish, not black, and because they are geographically situated between the San and the Negroes, I put the Pygmies earlier.

This is of course shocking science, but with no disrespect to pygmies this or west Africans this does not really affect the outcome of our final conclusion of a southern beginning. Y-chromosome research, specifically on the Mbuti Pygmies, places them as having an ancient African lineage. With cluster analysis, they come out further apart than other Central African tribes.

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<sup>122</sup>My barb at the "One Settler, One Bullet" slogan of my political party, the Pan African Congress.

The view put forward by Benjamin Smith, that Pygmy art shows the traits of an ancient lineage, is also not sufficient proof. While I am happy to use language and art as back-up material, I really trust genetics. What we need is a genetics PhD student to give us a detailed study of Central African prehistory.

This brings us to the heavyweights of the ancient mtDNA and y-chromosome variations. The San show by far the largest genetic variation of any tribal grouping. Cross-reference it any way you like, the results come out the same. When you start to look inside the group itself, the layers never seem to stop peeling off. The clincher is an area of work called haploid markers, which shows mtDNA markers found exclusively in African populations. They show a far greater variation inside the Khoisan groups than in any of the other groups. They also carry markers that have been dropped by groups that migrated outwards.

The Khoisan tribes are based in a C shape from the west to the south of South Africa. A tribe in Northern Tanzania, the Hadzabe, have been of interests to anthropologists for some time, because they speak a click-like language – and we thought clicks were unique to the Khoisan. They are an older East African equivalent of the Basques of Spain. The mtDNA analysis reveals that the phylogenetic tree of human DNA splits between the Hadzabe and the San longer ago than between any other two groups on earth – as much as 90 000 years ago.

What makes this analysis interesting is that this was first discovered on the basis of language. Far from my criticism that language is a short-term marker, what we have here is a linguistic observation that leads to a genetic answer. Anthropologists have been sitting on the equivalent of mtDNA for the last 50 years! As I said earlier, charming as they are, the Leakeys lead us to the wrong place.

As we approach African prehistory with multiple disciplines, it is now easier to open the kimono.<sup>123</sup> The old ways of the bone collectors seem out of place with the publicly available data of mtDNA.

Fortunately for paleoanthropology, as we start looking in later times things keep getting better. Just as they do today, early humans leave a lot of garbage where they live, dirty footprints, ochre pottery, broken hand tools, remains of unfinished supper, remains of finished supper (*kak*),<sup>124</sup> discarded birthday jewelery gifts, hallucinogenic drug paraphernalia, paintings on the wall. It is still great when bones do turn up, but paleoanthropology has moved on. mtDNA, backed by a supporting group of genetic, archaeological and linguistic technologies, can give us all we need. Bones don't wag the story anymore, we can tell the story with or without the bones and here it is

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150 000 to 200 000 years ago mitochondrial Eve and her tribe live in Southern Africa. They are the Beachwalkers and make their living scavenging for marine foods. Between 130 000 and 110 000 years ago they begin walking up the east and west coasts of the continent. They become hunter gatherers and move away from the sea shore.

By 120 000 years ago they have reached East Africa. One morning 90 000 years ago, food being a bit scarce, a small group goes on a long hunt, gets lost and walks northwards over the Sinai peninsula into Israel. One day one of them sees a burning bush and hears a voice telling them to start burying their dead at Skhul and Qafzeh .

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123 A dress worn by Japanese women, it is notoriously difficult for a ganjin or outsider to get these open.

124 The Afrikaans word for faeces, also used to describe an unpleasant concept, e.g. *Moenie kak praat nie*, "Don't talk kak", when you disagree with a statement.

Someone at Intelligent Design reads the manual again and realizes that they have booted the Promised Land program a day early. They send a plague of drought and kill everyone off.<sup>125</sup> It takes another 50 000 years, before *sapiens* returns to Canaan.

Back in East Africa, 60 000 years ago, a group sets off across the Gulf of Aden. When they get over the Red Sea they find a whole new world, where the thorns don't hurt your feet and the grass does not prick your ass.

This New World contains people and animals that are a lot less tough than them. They proceed to kill and eat them all. This annoys a senior executive at Intelligent Design, who has a thing for mammoths. He sets off the Toba Volcano in Sumatra 70 000 years ago, triggering an ice age that kills all but 2000 humans. God storms into the office, fires the guilty party and gives the monkeys another chance.

The Beachwalkers go north, they go south and they repopulate Africa. They keep spreading out, destroying all before them, covering the planet with wide-eyed darling children with the looks of angels and the hearts of Genghis Kahn.

In Africa 90 000 years ago an isolated group moves into the central and west African lowlands and finds a world rich and bounteous. They become the basis of Africa's most populous tribes. The ancestors of the San remain in Africa and by 20 000 years ago have extended right up to Ethiopia. They follow a lifestyle of hunter gatherers. 15 000 years ago the first colonists return to Africa. They bring with them from the Levant cattle, grain seeds and the know-how of agriculture. They learn the technology of smelting iron and gold from the ground. They build vast social empires. They export gold, ivory and other people's children.

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<sup>125</sup>Read *Out of Eden* by Stephen Oppenheimer for the full story of this expedition.

Three thousand years ago the Bantu expand outwards from the Cameroon. This causes pressure on the San people to move southwards. The Khoikhoi are pastoralists, first identified in Botswana. Around 2000 years ago they pick up pastoral methods and move westwards into the drier areas with goats and southwards into the Cape with cattle. By the time they get to the south coast they have fully mixed with the local San populations.

Around 1000 years ago two waves of Bantu migrants move quickly into Southern Africa. From the west comes the Kalundu tradition and from the east comes the Urewe tradition. Agriculture gives these new colonists a major advantage. They become the modern Shona, Sotho and Nguni tribes. They have little love for the hunter gatherers and push them back into the desert areas. The Bantu do not treat the Khoisan kindly. They murder the fathers and steal the women and children. They keep coming down the south-east coast until they get to the Fish River. Here the Bantu's technical advantage dries up. As they moving westwards, the summer rains they so ardently crave for their crops dry up and are replaced by drier summers and wetter winters. At the Fish River they also meet the Beachwalkers. They leave the Beachwalkers in peace and trade cattle with them.

A few years later, children of those that left Africa 60 000 years before return by boat from Europe. These new colonists have learned technologies and been trained by 60 000 years of war and destruction. Had they known what was to come, the Beachwalkers would doubtless have ensured there was not a single landing-post for the boat people. Those that did land would have found snakes in their beds

Like a Harvard MBA returning to his home town, the new colonists set about rearranging Dad's business. First thing the newcomers do is appoint themselves to the board of directors and raid the pension fund.

Depending where you sit in the racial food chain, you will like or dislike this story. However it is not my story. This is the story of mtDNA. It is written inside each of us. The story can be refined, but the core work has been done. We can flesh out the details, but the overall message is unlikely to change.

Following these arguments, you will see that the first humans were southerners who first developed into the Khoisan and then spread from there. The world has been content to leave the African origin as some amorphous “cloud”. Fortunately we have been at work in South Africa. While the rest of the world has been content that mitochondrial Eve “came from Africa”, we have been working on the details and the results are fascinating.



## The Garden of Eden

1<sup>st</sup> March 1937. Alex du Toit publishes *Our Wandering Continents*, the defining work that sets him apart not only as one of the first people to prove continental drift, but also as the father of South African geology. His model of continental drift is important to our story because it lays down the foundations on which the Garden of Eden is built.

The German geologist Alfred Wegener is credited with creating the idea of tectonic plates, but his work in the early 1900s is theoretical and comes without evidence or explanation. By 1915, Wegener is making serious arguments for the idea in the first edition of *The Origin of Continents and Oceans*. In that book, he notes how the east coast of South America and the west coast of Africa look as if they were once attached. However, his ideas are not taken seriously by many geologists, who point out that there is no apparent mechanism for continental drift. Specifically, they did not see how continental rock can plow through the much denser rock that makes up oceanic crust. Wegener proposes centrifugal force and gravitational influences of sun and moon as the driving forces. This is erroneous.

Wegener persists but is regarded with disdain and is unable to find an academic position in Germany. He ends his days in Austria in obscurity. By the 1930s German intellectualism is not in favor with the Nazis and even suggesting that the Third Reich is not the center of the World is enough to get one sent to Dachau to reconsider the facts.<sup>126</sup> Continental drift is not worth the discomfort and most

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<sup>126</sup>Dachau is the notorious labor camp outside Berlin that is a forerunner of the Nazi Death Camps. At first it is used for interning intellectuals and political opponents.

Germans just go with the flow. Permanentism fits in nicely with the master race. Evil thrives when good men remain silent.

The theory of continental drift is not lost on Alex du Toit, a working geologist in South Africa who spends the early part of the 20<sup>th</sup> century mapping the geology of the Karoo. He lays down the foundation for the work of people like Robert Broom who come after him. Du Toit has a name common among the French Huguenot immigrants, a 17<sup>th</sup> century group of religious refugees who come to the Cape and have a strong influence on Afrikaner history.

Du Toit is educated in the Settler manner. He goes to Bishops Diocesan College in Cape Town. Bishops is the Eton of South Africa. If you want your son to develop his *Saltpenis*, this is where you do it. The regimen includes chapel five times a week, sport is highest on the agenda, bullying is tolerated, and homosexuality, even covert, is an expellable offense. This is where we teach our boys about their white English heritage and where we learn our internationalism. The Afrikaners are right of course; the majority of private school educated Settlers, particularly those that go on to gain professional qualifications, emigrate from South Africa. Settlers queue to send our boys to Bishops. *Onward Christian Soldiers, marching as to war, with the cross of Jesus going on before.*

Du Toit learns his geology at the University of Glasgow, where the Scots have been leaders in this field for some time. He returns to South Africa, where he makes a major impact on the infant discipline. Unfettered by the prejudices of Europe he sets out to prove the theory of continental drift. Du Toit is a field geologist who spends his efforts in the field, believing that a problem is solved there and not at a desk. Tim White would love Du Toit.

In hindsight it looks really obvious that South America tucks neatly into the bulge of Africa and that the Argentinian coastline mirrors that of South West Africa. But it is Du Toit that does the painstaking work of matching sand, rock and fossil data. These are confusing times and, like paleoanthropology, geology suffers from the influence of the Catholic Church.

23<sup>rd</sup> October 4004 BC is the date that Bishop James Usher sets in 1650 for the first day of creation. The modern shape of the world is seen as having been formed by catastrophism, like Noah's Flood. Over the last 200 years geologists and astronomers have pushed this date back to around 15 billion years. But at the time that Du Toit approaches the subject, the theory of ancient permanentism is the ruling theory. The geological world is not ready for the shifting sands of continental drift.

By now in the US, Wegener, rejected in his own country, is ironically regarded by the Americans as a suspicious alien and Du Toit is talking about the Namib and Patagonia,<sup>127</sup> places they have never heard of. "This is the colorful language of a pamphleteer," sniffs an academic critic commenting on Du Toit's work.

*"If we are to believe Wegener's hypothesis, we must forget everything which has been learned in the last 70 years of geology and start all over again,"* is a statement from a University of Chicago geologist in 1930.

A particularly scathing attack on Du Toit comes from the creationist South American geological community. Brazilian and Argentinian geologists can see no similarity in the rocks of Patagonia and Namibia.

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<sup>127</sup>The Namib is a desert in Namibia, known then as South West Africa, and Patagonia is a savannah grassland in Argentina.

Stones in South America are collected and used as beads in Catholic rosaries, which are an indispensable item on South American geological field trips. A large statue of Jesus on Sugarloaf Mountain guards the city of Rio de Janeiro.

Wegener dies in 1930 and Du Toit pushes on with the argument until his death in 1948. Du Toit is the lone standard-bearer of continental drift. *Plate tectonic theory* only really comes into existence in the 1960s with the discovery of spreading sea floors and magnetic field reversals evidenced in surveys of the sea floor. Then the evidence pours in. In 1965 Dr Edna Plumstead of Wits and the Bernard Price Institute analyzes plant fossils collected by the 1955–58 American Trans-Antarctic Expeditions, and she shows that sedimentary rocks of the same age in Antarctica, South Africa, South America, India and Australia contain essentially identical plant fossils. James Kitching adds the voice of vertebrate fossils to this debate when he is invited to join the United States Antarctic Research Group on a visit to the icy continent in 1970, where he collects vertebrate fossils identical to those he is accustomed to finding in the Karoo back home in South Africa.

It takes the emergence of the new science of paleomagnetism for Du Toit to be finally vindicated; eventually, Du Toit's observations are confirmed and the notion of crustal movement becomes widely accepted, but only in the 1970s, when it becomes necessary to forget "*110 years of geology and start all over again*". This teaches us, yet again, that northerners will not easily listen to southern theories, particularly when they don't agree with them.

Humanity is a modern event and fortunately, we don't have to deal with the subject of ultimate creation in these pages. What is important for us is that continental drift, specifically Africa's northward drift (by 25 mm per year), and this with the westward drift of the Falklands plate is the key reason that the Cape Fold Mountains are formed and

the reason that there is a large coastal plain submerged below the sea off Cape Agulhas. We have the tireless work of Alex du Toit to thank for giving us this knowledge.

If you have ever been on holiday to Cape Town, after you have checked into the Table Bay Hotel and grabbed a sushi and wheat beer at the Waterfront, you will have been, one, up Table Mountain in the cable car, and two, out to Cape Point to see where the Atlantic meets the Indian ocean at the southernmost point of Africa. Even the dumbest of you are going to wonder how this big flat mountain got here. Even the cleverest of you are going to be fooled into thinking that Cape Point is the southernmost tip of Africa.

Stand at the top of the Point, near the old lighthouse, and look out over the surging of the two currents, the Indian and Atlantic Oceans. The surging swell is called the “washing machine”. On a rough day you can see “the bellows”, a huge white explosion, two kilometers off the Point, shooting massive blasts of water straight up into the air as two huge bodies of water meet. It is actually a wave hitting a reef, an extension of the Point under water. I have been round the Point a few times in a catamaran; believe me the bellows is even more impressive when viewed from a vantage point *inside* the washing machine. Diaz missed the Cape of Good Hope on his first trip due to a raging southeaster. I am convinced that had Diaz seen the bellows looming ahead he and his crew would have turned back there and then. To a sixteenth-century sailor, the bellows must have looked like the Devil’s Throat indeed. Diaz ends his life a few years later in a shipwreck off the Cape of Good Hope coast.

However impressive it is, Cape Point is not the southernmost tip of Africa. That honour belongs to Cape Agulhas, about 200 kms eastwards down the coast, along what today is known fortuitously as the Garden Route.

The two oceans don't meet at the Point and the aggressive conditions are simply localized currents running into the peninsula. Agulhas is a lot less vivid and is a serene place, where the two oceans flow gently into each other. Few tourists go there, and we all seem happy to go along with the Point, which makes the trip an easy day drive and gives tourists the warm feeling that they have been to the end of Africa.

In the period 500 million years ago to 350 million years ago the Cape is part of a shallow inland sea on the supercontinent of Gondwanaland. Layers of sea sand are laid down in a period called the Ordovician period. At the start of the Carboniferous age, 350 million years ago, Gondwanaland is coming apart – which we know thanks to Alex du Toit. An effect called tectonic inversion, a major “boing”, causes the Cape Fold mountains to bend upwards.

The Cape fold mountains comprise the Cederberg in the north, the Cape Peninsula in the West, and the Helderberg through to the Zuurberg running parallel with the southern coast almost to Port Elizabeth. Even though they are relatively old, the nature of the compaction makes these fold mountains hard and durable, and they are high barriers even by today's standards. This is aided by the fact that there are no foothills and the mountains rise vertically. There is a narrow east–west valley, or coastal plain, running between the sea and the Cape Fold Mountains.

What makes the Table Mountain peninsula interesting is that it sits on a huge underlying granite base, which emerge as those big boulder rocks at Clifton Beach where the rich live and at Simonstown where the penguins live.<sup>128</sup> The Cape Peninsula formation is granite at the bottom and Table Mountain sandstone on the top.

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<sup>128</sup> Simonstown is the site of the largest colony of African penguins in the world. A unique half village half penguin colony.

When the folds come, the Cape Peninsula rises horizontally. Old beaches, 450-million-year-old Silurian sand beds, are pushed up lying flat to become Table Mountain. Where I live in Tokai, on a Golf Estate 50 meters above sea level, we are on the granite–sandstone cusp. We have granite boulders below our front garden and sandstone in our back garden, where you can pick up sea shells. I feel privileged every day that I do so.

Over the next 150 million years, Africa hovers over the South Pole and is covered with ice. Table Mountain gets a flat top ice-age crew cut that gives it its current name. At its highest point, McClear’s Point, you can still see the ice scrapings in the rocks.

What has this geology to do with the Garden of Eden? Besides the fact that you will probably land at Cape Town on your way there, it serves to show you that things have not always been the same. Humans live very short lives, 70 to 100 years, sometimes sadly less. Darwin said “A man who wastes an hour of time does not yet know the value of life.” Our species has been on this planet for less than 200 000 years. It is a man-made illusion that things move slowly. We are in the midst of an evolutionary Big Bang, brought on by a rapidly moving ecology!

Fast forward another 200 million years and the Cape Fold mountains have eroded down to about half their original size. Gondwanaland has broken up, Antarctica has separated and Africa is drifting northwards a few inches a century. Take a trip to Silvermine reserve to see the fynbos.<sup>129</sup>

It is important to introduce yourself to fynbos. Once you understand fynbos you will understand that anything is possible in this part of the world. Robert Broom obviously never understood fynbos or he would not have commented that evolution seems to have stopped.

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<sup>129</sup>Vynbos or fine bush is the Afrikaans common name for the Cape Floral Kingdom.

In the last five million years, a mere flash in the timescale of botany, the Cape Floral Kingdom, home to the smallest and most numerous plant life in the world, has erupted. If you stop and look at any one meter square patch of Table Mountain, you can see upwards of ten plant species. There are more plant species on 22 000 hectares of Table Mountain than there are in the whole of the UK or New Zealand.

I bring this plant speciation to your attention because some of you may still have a copy of Richard Leakey's book *Origins Reconsidered*.<sup>130</sup> Richard explains that the equator is *the*, and *the only* place for intense speciation. Richard, like Broom, obviously never cared much for botany. Under every one of those fynbos bushes is a beetle that specializes in that particular species of bush! An enormous variety of mushrooms fight for space under this vicious, fungus-eat-fungus world. At certain times of the year Capetonians stream into the hills and seek out *Boletus edulus*, porcine mushrooms. We joke about this being the Cape of Mushrooms.

There are a number of theories on the massive rate of speciation in this area, and why it only begins three million years ago. Dominant ideas are that the jagged mountain barriers create a myriad of ecological niches and the unstable climatic conditions of the last three million years. The epicenter of the floral speciation seems to be Kleinmond, which is the entrance to the Garden of Eden. On the fourth day God decided it was seeding day and as he walked over the Cape his best seeds tumbled out of a hole in his seed bag.<sup>131</sup>

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<sup>130</sup>Origins reconsidered, his updated version of the latter part of the Leakeys activities.

<sup>131</sup>My apologies to D.J. Opperman, whose poem in Afrikaans is a beautiful rendition. *Op die groot saaidag van die heelal, het reeds 'n entjie duskant Wupperthal oor die kaal Noordweste, 'n sakkie van die Heer se beste saad per ongeluk gelek, gelek en uitgeval.*

Botanists, led by Peter Collings of the Nelson Mandela Metro University, struggle to explain this rabid speciation. There is a Mediterranean climate in five places in the world: Chile, California, the Cape, Spain–Portugal and Western Australia. Only one, the Cape, has the phenomenon of speciation. What makes the Cape different?

Two competing suggestions for this phenomenon are geomorphology and climate instability. Either the changing upliftment of the surroundings causes ecological extinction and rebirths, or alternatively the rapidly changing climate conditions cause extinctions that are filled by competing niche species. The weakness of these arguments is that they are not backed up by the facts. Over the last three million years the Southern Cape has been the most stable of the Mediterranean regions. The Cape has a coastline that is rising gently at the rate of around one meter per 100 000 years. Compared to Chile or California, the bottom of Africa is bedrock.

Only recently have we begun to understand the paleoclimate of the last three million years. Climate in the Cape region is dominated by the confluence of the Agulhas current and the cold Atlantic. This is a moderating influence. If it is not climate or geomorphology, what is it that makes the Cape unstable?

My take on this is that in the last three million years, the Cape was the only Mediterranean region that had hominids in residence. Hominids love to burn fynbos. Dry summers make for fire-borne propagation. Seeds lie dormant and only sprout once burned. Some have been found to lie dormant for 150 years! It is well known that burning has been a common practice in East Africa and Southern Africa for the last 3000 years. Once humans introduce cattle, the pastoralists regularly burn the veld to create new shoots for their herds.

I put forward that from the moment *Homo erectus* was able to control fire he thought it was cool to light up the veld. The benefit of the sprouting bulbs would have been a side benefit of the bonfire. The fynbos would only have to burn every fifteen years or so to create a rapidly changing plant world and to bring about extinction-based speciation. It may come to pass that we prove that the most beautiful and varied plant kingdom in the world is actually made by our own hand. God's First Gardeners!

Species come and go; they always have. As a result of the explosion of the Beachwalkers, we are in a period now where we can't even count species and don't even measure the loss. I met an old butterfly collector, an entomologist, in a bar in Cape Town. He had been collecting butterflies in the fynbos for years and reckoned he had at least a hundred that are now extinct. He wanted to sell me the collection, but I told him he should donate it to the University. In true Capetonian style he failed to see the altruistic merit in the idea.

I do pick on Richard Leakey in this book. Don't take it too seriously; it is merely professional jealousy. He is after all the paleoquarterback for the East Africanists. I forgive him for loving Kenya and for believing, like Herbert Spencer and Sir Arthur Smith Woodward before him, that his home, the Equator, is the center of speciation. It is a bit more complex than that and he certainly seems to be wrong on this one. In a stretch of land and coast spanning 90 000 square kilometers, or 0.05% of the land area of the earth, the Cape floral kingdom contains roughly 3% of the world's plant species – at about 456 species per 1000km<sup>2</sup>. Of the 9 600 species of vascular plants, plants with vessels for bearing sap, found in the Cape floral kingdom, about 70% are endemic; they occur nowhere else on earth.

The area's freshwater and marine environments are similarly unique, with plants and animals adapted to highly specialized environments.

When it comes to fauna, the kingdom has 11 000 marine animal species, 3 500 of which are endemic, and 560 vertebrate species, including 142 reptile species, of which 27 are endemic.

Next on your Cape holiday, stop off at the National Museum in Gardens and go to the Whale Room. There you will see reconstructions of 50 species of whale and the original skeleton of the largest creature ever to have lived on the earth, the blue whale. It will help you when you get to understanding the Garden of Eden later. When you think you have seen Cape Town, and you will have to spend at least seven hectic days there, otherwise you are will miss the jazz, take the N2 eastwards towards the Garden of Eden. The signs are not up yet, but they will be soon, right after people read this book!

You will rise up into the Boland.<sup>132</sup> In contrast with Table Mountain, the Helderberg mountains are contorted and the layers are usually bent vertically. They are a result of the same folding process that raised Table Mountain 350 million years ago, but these mountains did not have the protection of the underlying granite layer. The result is vertical jagged peaks that were once twice as high as they are now. Sir Lowrey's Pass is an impressive journey by car. By ox-wagon it is a nightmare to cross. For sailors shipwrecked on the wrong side of these mountains the route back to Cape Town is as likely to end in death as to deliver a safe passage. To *Homo erectus* and the Beachwalkers, this barrier makes it much easier to spend millennia walking up and down the space between the mountains and the beach, than trying to cross them.

*Homo erectus* probably walks in here from the east anywhere between 300 000 and one million years ago, but once trapped in this valley they are isolated from the rest of the world.

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<sup>132</sup>The high land; behind the fold mountains the land rises rapidly, climbing to 2000 m.

As you drive from Cape Town to Mossel Bay, you will drive through low rolling hills with the sea on your right to the south and the fold mountains as ever present barriers to the north. You will drive through historic colonial towns with names like Rivieronsderend<sup>133</sup> and Swellendam. You are in a valley bordered between the Cape Fold Mountains and the southern extent of the Indian Ocean. Go down to the shore, you will see cliff sides typical of a rising shoreline, rock pools, sand beaches, pebble beaches and caves.

Coastlines are special. In the observable universe, earth is the only place where we can see coastlines, and the only place with an inter-tidal zone. All planets have an equal amount of water, handed out by comets in the great bombardment 2.9 billion years ago. Only earth kept her oceans. Other planets like Venus boiled off the water, Mars let it evaporate and Europa, the third Moon of Jupiter, is a frozen ball. Land is no match for the sea as a pool of speciation. The inter-tidal zone in particular, teems with species.

Africa has a very narrow continental shelf. If you sail due east off Durban in a yacht, at about 10 kms offshore, even though you can still see the city lights, the continental shelf drops off and you plunge into the current roaring southwards down the Mozambique channel. It is like falling into a river. My first time at sea I seriously considered swimming for the shore rather than going on. It is like this all around South Africa, which has a narrow continental shelf.

Compared to the Polynesians, the Europeans were pussies as sailors. For centuries, northern European sailors such as the Vikings reached North America by sailing along the northern rim of the Atlantic guided by the wide continuous continental shelf.

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<sup>133</sup>River without end, This river starts at Greyton and winds its way over the plain to near Cape Agulhas. *Homo erectus* would have seen it flow a further 100 km to the sea.

Further south in Europe, sailors cruising the Mediterranean were also seldom more than a day away from sight of land, making them just as coastal as their northern brethren. The Polynesians crossed the vast Pacific rowing catamarans. Going east they make it all the way to Madagascar!

As coastal navigators, Europeans did not venture into the middle of the North Atlantic because they had no continental shelf. The generous continental shelf around Great Britain and Scandinavia becomes slender on the western coast around Africa. Furthermore, because of winds and currents, the continental shelf was impossible to follow down Africa beyond the Bulging Cape, Cabo Bojador. There is no European tradition of high seas navigation before AD 1400, because the North and South Atlantic oceans are too difficult to sail using any type of traditional knowledge.

The exception to the narrow continental shelf of Africa is the Southern Cape, which has a wide continental shelf. With continental drift, Africa is drifting northwards a few inches per year. As Africa drifts northwards it makes earthquakes in the fold mountains, but more importantly it leaves a trail of sand behind it, rather like a snail leaves a trail of slime as it crawls slowly northward.<sup>134</sup> This means that the Table Mountain peninsula on its granite base is getting left behind; one day those waterfront plots will be island property, but more importantly, hyper-relevant to our story, Africa is leaving behind an undersea plain presently now 100 to 200 kms out to sea off its southernmost point, Cape Agulhas and Mossel Bay. This extended shelf is most pronounced in front of Mossel Bay and thins out as you go east.

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<sup>134</sup> Actually a little more complicated, it is actually the Westward drift of the Falkland plate that pushes up the Agulhas plain.

This is why the Garden of Eden has calm waves and makes ideal conditions for cage diving and jet ski-ing, while 200 kms eastwards along the coast, Jeffreys Bay boasts the best left-hand surfing break in the world.

There you have it. The valley between the Cape Fold Mountains and the end of the continental shelf is the Garden of Eden. This is a place of serene beauty. As I write this book I am sitting in a beautiful beach front cottage, 50 meters from a Beachwalker archaeological site at Pinnacle Point in Mossel Bay and 50 meters from the sea. In contrast to the Mozambique current or the north-west storms that lash the winter Cape, the sea off Agulhas is calm. Even though the Southern Cape here faces directly onto the vast southern ocean, a wave must come across a 200 km “dam” of continental shelf before it hits the beach cliffs.

The coast line around Mossel Bay is most unusual, superficially like northern California, but very different under closer examination. It is a rising coastline and regularly throws up huge caves.

*Homo erectus* happily made his encampments in coastal caves. As you get close to the rocks you see that they lie in vertical layers, echoes of the violent folding. The rocks have an orange tinge, caused by a local fungus and moss. The jagged vertical faces make an ideal evolutionary niche for mussels, *Choromytilis meridionalis*, and they thrive on these rocks. Mossel Bay may not be the IC Unit into which *sapiens* was born, but it is certainly his local sushi bar.

Walk the St Blaize foot trail and it will take you through these hills and past the caves. You are walking in the footsteps of *Homo erectus*. These coastal cliffs are a treasure trove of our early beginnings. If you do kick over an *erectus* skull or a decorated, 150 000 year old whale bone, please don't move it. Call the television networks and bring in the paleoanthropologists. Bones and artifacts must be left “in situ”<sup>135</sup> to

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<sup>135</sup>Encased in the surrounding material, from which the dating is determined. Many

have any value. Without an exact dating procedure using surrounding material, the find has little contribution to make.

As you sit and wait for the international press to arrive, you will feel the tingling sensation of hair sprouting from your arms as the change in your body starts to transform you from being a lumper to a splitter. Immortality puts its cold hand on your shoulder. You start to get nervous about what you are going to say about your new species at the press conference. Take time to notice the high cliff walls. They seem ancient and it is easy to get lulled into the belief that it was always like this. It has not always been as it seems to be today. Fynbos got here only five million years ago, *Homo erectus* got here less than a million years ago and man spread from here less than 200 000 years ago. Most surprisingly, the sea only got here less than 20 000 years ago!

In the early 1980s, whilst I am pouring over 200 simultaneous equation models of the South African economy and Richard Leakey is out finding the Turkana Boy, into the Garden of Eden comes a schoolboy, Chris Henshilwood, kicking over stones on his way to the beach. He regularly spends holidays on his grandfather's farm, Blombos, between Agulhas and Mossel Bay. He picks up an interest in archeology and collecting things from the farm.

Years later, when looking for a dissertation subject, any post-grad student's nightmare, he decides to pick Blombos cave out of nostalgic memories of his youth. He has no plan and certainly no idea of what he will find. As Henshilwood peels away the layers of Blombos, it reveals more with each layer. The floor of the cave is coated with dune sand, dated to 70 000 years old.

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dating techniques are questionable, particularly on old bone finds, which were done without GPS locators.

This also accurately dates all finds below the sand, including fine tools, jewelery, 8000 pieces of ochre, at a minimum of 70 000 years. Twenty years later he is still sifting through the sand.

Seventy thousand years ago in the Cape the sea is much further out than the current shoreline. There are active sand dunes all along the coastline of South Africa. Blombos Cave looks out over these dunes. The sand is scattered over Blombos cave, where it caps the older earth below. Later, it is topped by layers of new soil. The pale sandy horizon of the dune sand provides a bright historical reference point. The strata below the unbroken sand come from the MSA, the Middle Stone Age, the period immediately predating the sand itself. Like an inscribed sarcophagus, the dune seals the bones below and tells their history. Preservation of the bones themselves is also the result of lucky conditions. In most soils, acidity causes bone artifacts to dissolve away before they can be discovered.

From 1991 onwards Henshilwood and teams of coworkers begin to analyze the contents of Blombos and consequently rewrite history. Henshilwood is joined by Curtis Marean of Arizona State University and the two form a partnership that not only unearths many new finds, but also meticulously dates these finds. The Americans bring an enthusiasm for the study of human origins, but more importantly they bring new technologies and they bring money. It is a blight on Africa that we do not marshal our own resources for these tasks. Marean is one of the new generation of American explorers to whom Africa is the new Wild West.

Marean is a graduate of the University of California Berkley, which has a strong tradition in the search for human origins. Over the last 20 years they have been the leaders in turning out paleoanthropology graduates. This is where, in 1982, Becky Cann and Allan Wilson begin studying DNA molecules in order to plot the roadmap of evolution.

Berkley is a stopover point for any visiting African, an oasis of black culture in the Californian desert of brick-paved Tuscan townhouse complexes and four-lane highways turned into parking lots by excessive congested traffic.

In the state of California, where black people are almost as hard to find as *Homo erectus*, Oakland is a refreshing place to be. It is also where Howie Long and Marcus Allen smashed it up for the Oakland Raiders Football Team.

The future of the search for human origins belongs to the mathematicians. Curtis Marean is a forerunner of what is to come. His main analytical tool is a GIS, a Geographic Information System. All data is placed into a 3D model and can be easily manipulated to extract and report in any manner required. This is in complete contrast to the secretive, mystical approach of the bone-hunters. Once data are captured and categorized in an accessible format, the doors open to a vast input of knowledge. Contrast this to the *Homo archaic* approach of the East Africans, where data is hidden behind closed doors, lest some outsider should steal a look at the data and produce an idea that actually advances science, but woefully takes the glory away from the fossil holder. Out in the desert, the sun can burn away logic and reason.

The Cape finds are a revelation. Here is the oldest evidence of modern human behavior. Until these recent southern finds, dominant thought assumed that modern human behavior originated in Europe around 35 000 years ago. The argument is that it is the hard environment that makes for innovation, but here in Blombos is evidence of modern thinking happening 30 000 years before anything in Europe.

Pleistocene Europe keeps its bone fossils.<sup>136</sup> Africa devours them. There are countless sites in Africa where bone was likely once buried, but all traces have been leached away. There are thousands of stone artifacts, but no bone. “If the geological conditions are wrong, you’re not going to get bone,” says Marean, explaining why hominid sites in this time are so rare.

*They are rare on the coast because most sites in caves at or below +10 m above sea level were washed out by the MIS5e high sea stand, and in earlier periods, most people were out on the exposed coastal platform exploiting shellfish. They are rare in the interior probably because populations were reduced due to the hyper-arid conditions.*

Blombos Cave’s bones are preserved because the earth surrounding them contains crushed sea-shells. Water passing through the ground shells made the soil alkaline. This environment preserves the bone tools perfectly, and even tiny scratches made during construction and wear are still visible. The markings tell Henshilwood and Marean how the tools were built and used.

Blombos has yielded two pieces of ochre, as well as a bone fragment, engraved with artistic motifs. Similar motifs are seen in 150-year-old art produced by the Khoisan people. This is a line of continuity of 70 000 years! Is it possible that the Beachwalkers and then the Khoi and subsequent invaders have sat it out for nearly 200 000 years in the Garden of Eden? This can’t be what Genesis meant. In that account God kicked us out into the Land of Canaan when we could not obey the house rules.

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<sup>136</sup>Pleistocene era is the periods from 1.8 million years ago to 11000 years ago. It is notable for its intermittent periods of glaciation

Formal bone tools, and the use of symbolism, are considered classic evidence of behavioral modernity. As a result, our intellectual ancestors were African. “I think behavioral modernity came into Europe with the Africans,” says Marean.

Over the last 10 years, Blombos archaeologists have gathered several clues that indicate modern minds at work very early on in Africa. Well preserved, accurately-dated bone artifacts are an extremely rare find. Once discovered, they make good evidence only if they are properly excavated. And even when the data are well laid out, the Eurocentric perspective can be hard to shake. It is difficult to comprehend that one is looking at the earliest evidence of modern human behavior. A century of excavations has produced much information about *Homo sapiens*’ last 40 000 years in Europe. Most of that work was by European archaeologists digging in their own backyards. Far less is known about the human past in the vast continent of Africa. “We are only scraping the surface of information about prehistoric Africa,” says Henshilwood. “Africa is geographically enormous when compared to western Europe. But it has been excavated properly for only a very short period, and very few sites in Africa have really been well dug.”

So why are Henshilwood and Marean not household names like Leakey and Dart? Are they doomed to be like my unknown Belgian fellow air-traveler that isolates opposing thumbs in primates? The answer lies in the slow delivery of the archaeological process. I am not sure which is slower, the geological process of laying down the archaeological record or the digging up of it!

It is not that Marean is not busy. He is focusing his efforts at Pinnacle Point near Mossel Bay, where a bank of coastal caves is built into a sheer cliff just 60 miles east of Blombos. His team has already spent three years laying the groundwork at Mossel Bay.

They have surveyed and mapped the site. They have also built a stairway to make access to the caves a bit less treacherous. Excavation is still in the early stages. But the site's potential, Marean believes, is enormous.

*I think Mossel Bay is going to be one of the richest locations ever discovered. In one little section there are 13 caves that have Middle Stone Age material. I think we'll be digging there for 20 years.*

One again the science dog is getting wagged by the bone-collecting tail. This is the Garden of Eden, possibly the most important archaeological site ever found. We should be plunging resources into this like the Tomb Raiders in the Valley of the Kings.<sup>137</sup> Instead we are bogging down for a 20-year dig.

*We're not going to know anything about the origins of modern humans until we have 30 or 40 sites dug, all with modern techniques, good bone preservation, and so on. We won't know if bone tools were rare or common in the Middle Stone Age. I'll be long dead before we have an answer.*

Marean jokingly concedes the slowness. It is not that funny. He is talking with the same resignation as Louis Leakey. Worse, he is talking like Louis without the girls or the money!

Both Leakey and Marean are captives of the same archaeological discipline. They are bone collectors. We are revisiting the archaeological version of the splitters and the lumpers again. Archaeologists are the splitters. They get their research grants from finding bits of bone and artifacts, each successively more important.

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<sup>137</sup>African Archeology in the 19<sup>th</sup> century centered on raping the Egyptian tombs.

Statisticians like myself are lumpers. We create a scenario of maximum likelihood and we look for the evidence that fits that hypothesis. Bone collectors sift through the rubble and create a story based on what they find. Statisticians create the story and then look for the data that is required to prove it.

Once again, the problem with relying on bone collecting is the small window that it gives us. The Garden of Eden has not always looked like this. The current coastline reflects only a small part of the past. The Beachwalkers followed the coastline closely. When the coastline was further out to sea, they would have followed it out there. If the Guys at Intelligent Design can move the Red Sea back for Moses, they can certainly move it backwards for *Homo erectus* or for modern paleoanthropologists. Come on Guys, there is nothing worse than the sight of an atheist praying, don't make me beg, can Intelligent Design please offer us up that whale bone. I promise we will be suitably confused.

While it is great that we now know that *sapiens* first developed his mental abilities in Africa, the introduction of this knowledge brings more questions than it does answers. The solutions to these questions are not going to be found in Europe, but in Southern Africa, and this is where we need to focus our scientific effort. The argument that modern man was formed in an ice age is valid. However it is not the Ice Age of Europe, but the Ice Age of Africa that formed us. It takes really clever people, our ancestors, to get through MIS6 and MIS2. It will take really clever people to uncover their secrets today. For most of the last 200 000 years Africa was not the paradise you see today; it was a very harsh dry place indeed.

The most promising work currently coming from Marean is the excavations in Cave 13 at Pinnacle Point near Mossel Bay. These have been going on since 2000. The evidence supports the view that humans in the Pinnacle Point area collected shellfish at low tides

during the Middle Pleistocene, about 164 000 years ago, estimated by radiometric dating techniques. A three-dimensional geographic information system model that maps Pinnacle Point sea levels at 1500-year increments for the last 400 000 years supports the dating.

At this time, slap in the middle of MIS6, Marean says we find evidence of man eating shellfish in the coastal area.

*Shellfish may have been a critical food source for the survival of early human populations. For millions of years, humans survived on inland plants and animals. Shellfish was one of the last additions to human diet before the introduction of domesticated plants and animals.*

Until now, the earliest dated archaeological evidence for human use of seafood, sea shells and other marine resources is dated to 125 000 years ago. These new results indicate that coastlines may have become attractive for human settlement and movement earlier than originally thought.

Exciting times indeed. Not only is shellfish on the menu but evidence of fish and a whale barnacle are found. The collection of marine invertebrates means the hunter gatherers are developing more complex economic and social systems and reducing mobility. There is no need to move from the confines of the Garden. When everything is working just fine, why, with all that sushi on offer, does Eve go and take a bite of that darn apple? Men are from Mars, Women are from Venus. The Guys at Intelligent Design note this and send a memo down to logistics to send in another ice age.

## The Seventh Day

18<sup>th</sup> October 2007. Curtis Marean and his team from Arizona announce their findings that *Homo sapiens* was eating seafood in the Southern Cape as much as 167 000 years ago. This moves the barrier of modern behavior back from 70 000 years in previous African findings and 130 000 in European findings. On the seventh day God made man and called her Eve. Even Bishop Colenso knew that there was an outside chance that this was possibly, just maybe, not entirely factual, but I wonder if he could have foreseen reality's seventh day. Catholics will like my interpretation. Genesis should have read "On the seventh day it was chilly and God decided that man should eat fish".<sup>138</sup>

The world currently seems to be genuinely taken up with the idea of global warming. While seas could rise six meters and New York could be flooded, I have never really been able to share this paranoid energy on global warming. Spare a thought for the Miocene, 15 million years ago, when the sea would have been 100 meters higher than it is today. An ice age worries me much more. Even as a schoolboy I had a paranoia about being caught in an ice age. For most of the world's history, there has been no large scale ice, no polar caps. However ice ages, not excessive warming, have been the norm in Pleistocene history.<sup>139</sup>

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<sup>138</sup>Biblical Scholars may point out that Man was made on the 6<sup>th</sup> day. That was *Homo erectus*. What I am saying is that like all business owners, the Old Man sneaks into the office even on a day off. Without consulting the working committee he goes through their desk drawers whips up an idea of his own – us.

<sup>139</sup>Pleistocene is the period 1.8 million to 11 500 years ago. The Holocene is the period from 11500 years ago to the present.

The orbit of the earth balances us on a curious knife edge between falling in towards the sun and boiling up like Venus, or moving out and freezing like Europa. On earth we live in this twilight zone between ice and water. Keeping this balance is more worrying than the prospect of car emissions heating up the planet. The current state of continental drift with the vast land masses in the north and the south covered in water with fast moving currents make this balance precarious. Temperatures are a balance the radical changes of the northern hemisp and the moderating influences of the south.

The reaction is quick. A slight drop in temperature or an extra heavy snowfall means that the snow in the north stays on the ground a little longer. The white snow reflects heat back off the earth, the opposite of the greenhouse effect. Temperatures drop even further and the snow advances even further; in as little as 300 years it can advance far enough to be officially called an ice age!

Ice ages are well documented. The cycles, particularly in the Pleistocene, are accurately dated. In the context of the Southern Cape the ice periods are referred to as Marine Isotope Stages, after the dating method used to estimate their ranges. MIS stages are alternating warm and cool periods deduced from oxygen isotope data reflecting temperature curves derived from data from deep sea core samples. The cycles were found to correspond to terrestrial evidence of glacials and interglacials. More recent core samples of today's glacial ice have substantiated the cycles through studies of ancient pollen deposition. Ice ages are a certainty.

Each stage represents a glacial or an interglacial. Inside these cycles are short reversals called stadials or interstadials. Interglacials are odd-numbered and glacials are even numbered, one for each stage, starting from the present and working backward in time. Warm periods have odd numbers and cool periods have even numbers.

The Holocene is MIS1 and the previous interglacial is MIS5. MIS2–4 refers to the last glacial, because when initially interpreted MIS3 mistakenly looked like an interglacial. Stadials and interstadials are identified by a letter following the corresponding glacial or interglacial: 5a, 5b, etc. The dates of the stages are obtained by calibrating the graph on known dates by other methods.

The first scientists to pick up on the cycles of ice ages are the Swiss and they find this by looking at the extent that previous glaciers had pushed the surface of the earth. This is always to the point of a valley river. So the first two ice ages are named after Swiss rivers. MIS2, MIS3 and MIS4 refer to the period before the last glacial maximum, from 20 000 years ago back to 110 000 years ago and are known as the Wurm Ice Age. MIS5 is a warmer period between 130 000 and 110 000 years ago. And MIS6 is a long extended period approximately 190 000 to 130 000 years ago, known as the Riss Ice Age. These cycles of ice ages are not like regular ripples in the water. They can be longer or shorter and they can be hotter or colder. We have not yet fully determined their cause or the factors which affect their intensity or duration, but we can measure them. They leave very clear indicators in the undersea rocks and ice packs.

*Homo erectus* and his descendants *sapiens* live in a world of rapid change and in this they thrive. We have only to look at the very recent stadials in MIS1 to look at what they faced. The Younger Dryas lasted from 12 700 years ago to 11 500 years ago. In this time temperatures return briefly to as cold as in the last glacial maximum, 191 000 years ago. For a thousand years things get really harsh. It has been suggested that this sudden cramp in the food supply is what kick-starts the agricultural revolution. The Little Ice Age is a period from the thirteenth century until the nineteenth century when the northern hemisphere is recorded as having very cold periods.

Climate records show the Thames River freezing in London and the sea icing over between Manhattan and Staten Island in this period.

What is important for Eve and the Garden of Eden 200 000 years ago is the level of the sea. During an ice age the snow and the glaciers pack up big time in the Northern Hemisphere. North of the Tropic of Cancer, life becomes extremely hard. Archaeologists follow the movement of the glaciers in North America by tracking the litter of the Clovis people as the glaciers push them backwards and forwards. In Europe and the Middle East *H. neanderthalensis* press southwards and we find them burying their dead in the Levant.

In the south, the Antarctica freezes over, but the open Southern Ocean is a moderating influence. However there is only a finite amount of water in the world and those northern ice packs have to take it from somewhere. They don't care whether the water comes from the northern or southern hemisphere. Worldwide, water is picked up and deposited as snow in the north, frozen out of the sea. Worldwide, sea levels drop. Calculations put this by as much as 100 m, which is what makes the global warming alarmists' estimates of six-meter sea-level rises not that frightening. However, to the Garden of Eden, this has dramatic implications.

Southern Africa is the only place in Africa where the continental shelf extends for more than 100 kilometers. In the case of the Garden of Eden off Mossel Bay or Cape Agulhas, a 100 m drop in ocean levels would be the same as the sea receding 100 to 200 km, revealing as it does so a nutrient rich bed of previously marine soils. This opens up an area of some 20 000 square kilometers. As you sit in the lush comfort of the Pinnacle Point Golf Course club house, a course with spectacular holes over the seafront, and look out over the ocean, this is really difficult to imagine.

The sea rolls back way over the horizon every time *H. neanderthalensis* starts serving ice cream and hot chocolate sauce, and comes rolling forward 100 kms every time they pack up the holiday home in Israel and move back to France. These events in Europe and Southern Africa may be separated by half the world, but they are inextricably linked.

The earth rebounds from ice ages rapidly, more rapidly than we enter them. Today we are in a period when the sea is at one of its highest points, an inter-glacial period. It has been higher. The highest period would have been MIS5e, 120 000 years ago. Without the help of smokestack industries, the sea rises by nearly 100 m in the space of a few thousand years. The highest local thermal maximum, depending on your location on the planet, was between 9000 and 6000 years ago. Global warming threatens to push the sea level a trifling 6 m higher.

Pilgrim, the implication is that when you get to the Garden of Eden, you will need to go shark diving just to be on the border of it. The real source of human origins is even further south. You will need an advanced diving course to get down 100 meters. It is a far cry today from how it looked when *Homo erectus* passed on the apple and instead took a second helping of fish.

Go back to the proposal of a Garden of Eden on the south side of Chicago. You may have a beautiful lake there today; in MIS6 an area the size of Lake Michigan dries up in front of you. More precisely, in the northern hemisphere case, the whole of Illinois gets covered in an icepack over 1000 meters thick. Unless you move pretty quickly, you follow the mammoths and get frozen in your hammock.

Inside the major ice ages of the last 200 000 years, the level of the ice fluctuates. The ice age phenomenon happens six well-documented times, the Garden of Eden shrinks back and expands forward by as much as 50% of its area. The driving theory behind this is Milankovitch cycles. The earth moves in cycles.

The eccentricity, axial tilt and precession of the earth's orbit vary in several patterns, resulting in 100 000-year ice age cycles of glaciation over the last few million years.

The earth's orbit is an ellipse. The *eccentricity* is a measure of the departure of this ellipse from circularity. If the earth were the only planet orbiting our sun, the eccentricity of its orbit would not vary in time. The earth's eccentricity varies primarily due to interactions with the gravitational field of Jupiter. Currently the difference between the closest approach to the sun, the *perihelion*, and the furthest distance, the *aphelion*, is only 3.4%, 5.1 million km. This difference is equivalent to about a 6.8% change in incoming solar radiation. Perihelion presently occurs around January 3 while aphelion is around July 4. When the orbit is at its most elliptical, the amount of solar radiation at perihelion is about 23% greater than at aphelion. This difference is roughly four times the value of the eccentricity. A number of factors affect the length of this cycle, which is approximately one hundred thousand years. We are currently in a period of warmer northern winters.

The angle of the earth's axial tilt, the *obliquity*, varies with respect to the plane of the earth's orbit. These slow 2.4° obliquity variations are roughly periodic, taking approximately 41 000 years to shift between a tilt of 22.1° and 24.5° and back again. When the obliquity increases, the amplitude of the seasonal cycle in insolation increases,<sup>140</sup> with summers in both hemispheres receiving more radiative flux from the sun, and in the winters less radiative flux. As a result, it is assumed that the winters become colder and summers warmer. The magnitude of these changes in the summer and winter is not equal for both hemispheres.

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<sup>140</sup>Insolation is the term for the amount of sunlight we receive. Not to be confused with insulation, which is to close of.

Cooler summers are suspected of encouraging the start of an ice age by melting less of the previous winter's ice and snow. It can be argued that lower obliquity favors ice ages both because of the mean insolation reduction in high latitudes and the additional reduction in summer insolation. We are currently halfway between the extremes, so this effect is neutral on global warming or cooling.

*Precession* or wobble is the change in the direction of the earth's axis of rotation relative to the fixed stars, with a period of roughly 26 000 years. Expect northern hemisphere Christmas to be in summer in 13 000 years' time. This gyroscopic motion is due to the tidal forces exerted by the sun and the moon on the solid earth, associated with the fact that the earth is not a perfect sphere but has an equatorial bulge. The sun and moon contribute roughly equally to this effect. This orbital precession is, in the opposite sense to the gyroscopic motion of the axis of rotation, shortening the period of the precession of the equinoxes with respect to the perihelion from 26 000 to 21 000 years.

When the axis is aligned so that it points toward the sun during perihelion, one polar hemisphere will have a greater difference between the seasons while the other hemisphere will have milder seasons. The hemisphere which is in summer at perihelion will receive much of the corresponding increase in solar radiation, but that same hemisphere will be in winter at aphelion and have a colder winter. The other hemisphere will have a relatively warmer winter and cooler summer. When the earth's axis is aligned such that aphelion and perihelion occur near the equinoxes, the northern and southern hemispheres will have similar contrasts in the seasons. At present perihelion occurs during the southern hemisphere's summer, and aphelion is reached during the southern winter. Thus the southern hemisphere seasons are somewhat more extreme than the northern hemisphere seasons; other factors being equal, we are currently in a warm cycle.

Add these factors together and you get a Milankovitch cycle. Milankovitch cycles are not thought actually to cause ice ages, but to modify the depth of them. We have currently been cooling from 6000 years ago and the theory predicts we will be in a warm period for some time and the next ice age will be in 50 000 years' time. This has effectively been going on for three million years.

To a bag of bones and water like you or me, who only live to 70 years, a 100 000-year Milankovitch cycle is going to feel like an eon. But to the evolving genes of *Homo erectus*, it is going to feel as if they live in an evolutionary tidal pool. Anyone who has walked in the intertidal zone will know that it is buzzing with life. This is our small glimpse of the sea. Compared with the sea, the land is an evolutionary desert. The sea is a whirlpool of speciation, the rate being much higher than on the land. You can spend a lifetime tracking the evolution of one group of mollusks.

For example Ethiopia goes from a desert, harsher than we know it today, to a swamp like the Okavango Delta and back again, in a blink.<sup>141</sup> The rapidly changing environment is a sink or swim decision. Some species are wiped out and some make the changes required. *Homo erectus* is the chameleon master of this change.<sup>142</sup> This low-lying seafood buffet with a side salad of fynbos, as a speciating Eden, is a long way away from the Genesis apple orchard or Richard Leakey's fruit-laden equatorial jungle. But it is here, in this unlikely place in southern Africa, that we make our last big evolutionary hop, one that is destined to change the world as we now know it.

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<sup>141</sup>The Okavango Delta is an inland lake system in Northern Botswana

<sup>142</sup>This is where I come up with my name of *Homo adaptus*, because his most striking feature is his ability to adjust to the changing environment and still live through it. Thousands of species around him fail.

Ice makes change and change makes species. Hopefully when you have finished reading *God's First Fishermen*, you will have the same interest in human origins that I do. Read *Snowball Earth*.<sup>143</sup> Based on unexpected ice age rocks in Namibia, Joe Kirschvink proposes an earth, 600 million years ago, entirely covered with ice. Not a wishy-washy extension of the poles, but a full-on transformation to an ice world, the whole thing, sea and all – the mother of all ice ages! Underneath this global ice cap boil the earth's volcanoes, creating a calcium-rich hot soup which eventually melts the ice and kicks off the Cambrian explosion of multi-cellular life.

We can attribute the biggest changes in our evolution to the effects of ice. We have had three of them already. Formation of a skeleton 565 million years ago, bipedalism 4.5 million years ago and encephalisation 200 000 years ago. I have not followed the climatology beyond the period 55 million years ago when we developed our separate thumb, but I would not be surprised to find that ice was involved. For followers of Intelligent Design, you have to believe that the Old Man likes to stick his hand into the fridge every now and again, not to cool off, but to heat up the process. Maybe the Old Man just likes to grab a beer and take a short break before getting back to work on the unbelievably complex job of sorting out all the those billions of intertwined evolutionary niches that make up the patchwork of the living earth. In a moment of brilliance he creates Intelligent Design and delegates the hard graft to the atheist unbelievers.

*H. erectus* with his 900 cc brain isn't the brightest kid, but in the land of the blind, the one-eyed man is king. Over two million years he walks himself over four continents, and reaches as far as Java.

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<sup>143</sup>The account by Gabrielle Walker of the work of Joe Kirschvink in proving that we were subject to the mother of all ice ages between 700 and 600 million years ago.

There are many times in the last two million years when you can walk from Asia to Indonesia. In Africa he also walks down south and checks into the Garden of Eden and has no real reason or inclination to check out. In fact he can check out but never leave, the Cape Fold Mountains are a huge wall to climb over.<sup>144</sup> In periods of ice age, when temperatures are lower in the Garden, things are not great but they are still livable. Behind the mountains lie a rain shadow and a harsh desert akin to the Namib or the Atacama. Our southern group of *H. erectus* is trapped and isolated, in a rapidly changing environment, a perfect place for an evolutionary jump.

As the Old Man pours himself a sundowner at the end of the sixth day, he looks on his work and is really pleased that the plan is coming together. It takes quite an imagination to get your head back to 200 000 years ago when Eve takes her first bite of the whale. What, biting a whale? Wasn't it an apple? Wasn't it Jonah that got swallowed by the whale? Whoah! Where are we going here?

One of the game-watching pastimes in the Cape is whales. Like Londoners who look down from second-floor flats and watch starlings picking at hubcaps in the streets, we like to sit on our porches and watch whales copulating in October or giving birth a year later. Do you still think the Cape is not the Garden of Eden?

Copulation is always interesting to watch, but in whales particularly so. Whale copulation is group sex extreme. When the female she is ready, like a swinging single in a Berlin porn clip, she calls all the guys round and for two days there is a whole lot of moving and grooving in the swirling water. What the female is doing is collecting sperm from each of the males and storing it internally. When she is finished getting it all, she kicks them out, and they move on to the next girl who is willing.

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<sup>144</sup>“On a dark desert highway, cool wind in my hair. This could be Heaven or this could be Hell. You can check out any time you like, but you can never leave!”  
Hotel California by the Eagles – a masterpiece of 20<sup>th</sup> century music.

The female then decides which is the best sperm sample to use for the baby and chooses that for her ovulating egg. This goes on for about 30 days, nobody fights and everyone gets a turn to get their rocks off with all the best girls at the party. The fathers never know which baby is theirs and the whole group ends up looking after all the offspring. Analyzing whale mtDNA is going to be an interesting PhD. Those Japanese researchers who break the International Whaling Commission agreements to hunt whales for “scientific purposes” should spend more time doing this analysis and less time rushing the waste to the restaurant market where they can toss it away for up to \$500 a steak.

Stephen Gould and Richard Dawkins will likely haul me over the coals for incomplete science, but you have to suspect *sapiens* woman can also control which sperm gets used.<sup>145</sup> I have to be careful what I say here. When the Old Man decides he has had enough of my current earthly contribution to evolution, Gould, along with Bertrand Russell, Douglas Adams and other deceased atheists, will probably be my new bosses at Intelligent Design. Fifty-one percent of children born are boys. I postulate that in periods of war, the population has a self-correcting increase in the birth of boys. Women determine this.<sup>146</sup>

A statement like this is like Louis picking up one tooth in Olduvai and rewriting history, but my own anecdotal evidence involves my last son, who was born on 11 June 2002, exactly nine months after 9/11. Because I was interested in this topic, and because childbirth has always been easy for me, I had time to check the births register that night at the hospital. Thirteen of the fourteen newborn babies were boys! I knew we should have stayed up watching television.

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<sup>145</sup>I am not alone in this thinking, no less than William James of The Galton Laboratory, University College London, also proposes this.

<sup>146</sup>This sweeping unsubstantiated statement. This is an inference from wide ranging economic data and would need refined testing before it can be taken seriously.

It is not a PhD topic, but could one of you zoologists please do an honors dissertation to check if my experience is part of a valid hypothesis, or merely the product of a posteriori thinking on an inadequate sample chucking out an outlier from a simple binomial distribution. Even Kerrige would have to miss the rations handout trying to flip 13 out of 14 heads in his prisoner of war camp.

Compare the whale mating system to our chest-thumping, sand-kicking methods of getting the best girl. I have never understood scientists from Abrahamists <sup>147</sup> upbringing, who still think that the Vector of Evolution points in an upwards direction and we *sapiens* males are the top of it. As a further comparison of two top-of-the-food-chain operators, currently we have one species of hominid and about 40 species of whale. Humans have had three species in the last million years namely, *sapiens*; *neanderthalensis* and *erectus*.

Whales are not common today and we do not have much contact with them. It wasn't always like this. For the last 200 years we have devastated the whale population. Only the recent banning of whaling has allowed them to recover their numbers and have the confidence to come in close to us again. On a recent sailing trip around Cape Point, I saw groups of as many as 20 whales and a pod of dolphins no less than 1000 strong. Even on the present numbers our bays of the Southern Cape Coast gets really crowded in the whale season. During MIS6 whale numbers would have been substantially greater than the present numbers. Add to this that the ice ages would have pushed the whales northwards towards the beaches of the Garden. For *Homo erectus* it must have looked like Margate beach during the sardine run – or the northern Margate on Bank Holiday Monday.

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147 Ex Abrahamists are people like you or me that have grown up as Jews, Muslims and Christians, but grow up to see Reality. It is hard to let go of Old ideas.

Where you get whales, you get whales beaching. We haven't figured it out yet. Is it an integral part of their dying process or is it the human equivalent of our kids drowning in the swimming pool, one of our major causes of child mortality.

Several hypotheses have been put forward to explain these strandings, which likely have multiple causes. The whales may be sick or hurt, and illness or parasites may affect their sense of direction. It is believed that whales use magnetic fields and underwater topography to orient themselves. For this reason, a magnetic field deviation or an odd coastline formation could cause confusion. It is not an uncommon occurrence for beached whales that have been returned to deeper water to be stranded later on the same beach from which they were freed. Their reference points may wrongly lead them to believe that deeper water lies in the direction of the beach.

Strandings often occur repeatedly in the same area, in zones with specific characteristics. Whales that are more at home in deep, mid-ocean waters may get caught off-guard by the falling tide in shallow estuaries. In the case of a mass stranding, whales may simply be following a confused leader, or they may be swimming to the aid of an already stranded whale which is sending out a distress call. Strandings remain mysterious. What we do know about whales is that every now and again whales drop up on the beach and say bye bye to the world. To *Homo erectus* it is like having a fish deli on the corner. In a world of famine, he gets regular servings of the finest meat on the planet. This is where the idea of the Old Man sending manna down to his chosen race first begins.

*Homo erectus* walks into this valley before 200 000 years ago and, as he had been doing for the last two million years, follows a diet based on scavenging. Stranded between the mountains and the sea, *erectus* has nowhere to go. Up pops an ice age and belts get even tighter.

Eating sea food is not a choice, it is simply the best and sometimes only protein available. By adding wasabi and soy sauce it tastes delicious. This humble dish changes the course of history.

Antionette Jeradino from the University of Cape Town has shown us that the Beachwalkers ate shell fish and mollusks. Fifty meters from where I am writing this book, the Arizona State University dig is proving that we were eating mussels 167 000 years ago. I am not suggesting that *erectus* builds himself boats to go out fishing; he doesn't have to, it comes to him. All he has to do is walk along the beach every morning and pick up nature's bounty. The good news is that Christmas comes more than once a year, and when it does there is more than enough whale meat to go around.

I am not suggesting that the Aquatic Ape Theory holds water.<sup>148</sup> The AAT puts early man as some sort of prototype dolphin, who actually enters the water. We are not even saying that *Homo erectus* has great fishing skills. He simply scavenges from the seashore. The most positive indication of fishing skill is that the leftover bone material comes from a few species not a wide range of species, indicating that *sapiens* had a method of scavenging particular species.

Now we get to the part of encephalisation. What makes us different from gorillas, chimps and even *Homo erectus* is the size of our brain. In a period of 50 000 years our brains grow from 900 cc to 1400 cc. This is astounding. It takes a lot of blood and complex nutrients, regularly pumping through, to keep the organ moving. But a brain is a very useful thing and history has shown that those with a big brain win. This is why, in *Sleeper*, Woody Allen says his brain is his second favorite organ.

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<sup>148</sup>The original theory was proposed in 1960 by Sir Alister Hardy, a marine biologist (an expert on plankton). It is now treated with derision by paleoanthropologists.

The exact time frame of encephalisation is still a hot debate amongst paleoanthropologists. I deal later with the idea of *Ancient sapiens*, a theory that *sapiens* existed somewhere else in Africa and even in the rest of the world before 200 000 years ago. This would mean that it is *sapiens* and not *erectus* that enters the Garden of Eden 200 000 years ago, and he comes in with an already anatomically enlarged brain. This would relegate Out of Africa *carpensis* to a small social event like the rise of agriculture in the Levant, or the industrialization of Britain. Evidence is scant for this line of thinking. No coherent hypothesis has been put forward for encephalisation at another location. What we do know is that there is no evidence yet of any modern human behavior outside of the Cape more than 60 000 years ago.

Kyle Brown of the Arizona State University puts forward an explanation of the Beachwalkers' complex stone tools. These include points, blades and hand axes. They are made from silcrete, stone material that has been brought from some distance to the caves at Pinnacle Point.

To get the hard sharp edges to their tools, the Beachwalkers have forged the stones in fire. To make the chemical change necessary in silcrete the stones have to be kept at high volumes for at least eight hours. This is a sophisticated art of planning and manufacture not found anywhere else in the MSA. This is the first industrial revolution.

Why should we believe that our brains suddenly grow 200 000 years ago? And why should we believe that this all happens in the Southern Cape?

First, we discover that early *sapiens* populations demonstrate greater intelligence. Chris Henshilwood provides this for us at Blombos Cave artworks and ochre remains. Results in Europe suggest

that Neanderthals ate mostly red meat from the larger animals that roamed Europe that time.

In contrast, the bones of early modern humans found in Britain, Russia, and the Czech Republic, dated 20 000 to 28 000 years ago, showed that fish and seafood accounted for 10–50% of their dietary protein. The findings at Blombos show that early human behavior there 70 000 years ago precedes Europe by 30 000 years. Southern sites like Klassies River and Ysterfontein back up this early evidence. This points to Southern Africa as being the first place of the demonstration of modern human activity and therefore, the first site of encephalisation. Without the Cape origin, you are left with the result that *sapiens* grows his brain for no reason. Keeping a large brain is an expensive habit to have in an ice age with low levels of ready protein.

Second is the discovery that docosahexaenoic acid, DHA, is a large contributor to brain growth. This research is lead by nutritionists Michael Crawford and Stephen Cunnane. Two thirds of our brain is composed of fats. Brain cells require specialized fats. To build brain cells you need fatty acids. Two kinds of fatty acids are considered “essential”, which means you must get these fatty acids from the food you eat. Your body cannot manufacture them. The first essential fatty acid you need is alpha-linolenic acid, ALA. ALA is the foundation of the “omega-3” family of fatty acids. Food sources of omega-3 ALA include flax seeds, chia seeds, walnuts, sea vegetables, and green leafy vegetables. The second essential fatty acid you need is linoleic acid, LA. LA is the foundation of the “omega-6” family of fatty acids. Food sources of omega-6 LA include cold-pressed sunflower, safflower, corn and sesame oils.

Third contributor is the discovery that DHA is found in seafood. *Sapiens* gets his oils from secondary sources. Put these three pieces together and we easily conclude that humans who lived near water sources and ate seafood experienced the big brain change!

Stone Age men and women collecting shellfish could have easily provided themselves with a plentiful source of brain-specific nutrition, especially omega-3 fatty acids, and their children will have naturally participated in the exploitation of this rich nutritional resource.

There are enough omega-3 and omega-6 fatty acids available in their diet to provide many generations with fuel for fetal and infant development as well as childhood and adult needs for the cardiovascular system and the brain.

The link between omega-3 DHA and growth in the brain is still under research, and there are compelling arguments against it. Jim Moore runs a popular website that criticizes the AAT. Much of his argument against the AAT also applies to Out of Africa *carpensis*, *Homo erectus* eating sea food in the Southern Cape.

If dietary determinism were a valid way of suggesting encephalisation why do all creatures which eat fish not have huge brains? Diving ducks, sea gulls, herons, otters, seals, why aren't they at least dolphin-smart? Why are fish dumb enough to land on the sushi table? Even dolphins have brains only as large as those of monkeys and apes, which eat mostly fruit and nuts.

*The especially rich sources of DHA are found in cold water marine fish which are certainly not the type of fish available, by any reasonably conceivable scenario, to our ancestors at the time we see increased encephalisation. They were simply not within a thousand miles of them. The fish that were available were, so to speak, a different kettle of fish.*

Katharine Milton, another critic of the idea, puts it this way,

*In this Lamarckian scenario,<sup>149</sup> the quiescent brain appears to be waiting patiently for humans to discover aquatic foods and then, eureka, the brain is free to enlarge and modern humans result. Not only are the selective pressures involved in this scenario unspecified, no information is provided as to how these large-brained humans were then able to provide DHA and other brain-specific nutrients for themselves or their developing offspring once they moved away from lacustrine or shore-based environments.*

These are fair arguments. Tuna are exclusively fish eaters. The only tuna I have met are not even clever enough to get off the hook and avoid you smashing their heads in, gutting open their stomachs, covering them with wasabi and soy sauce and eating them almost alive. This is something that an intelligent individual would surely strive to avoid. My answer to these critics is to look at the behavior of *Homo erectus*. The Garden of Eden provided for the first time a chance to settle, live in cave shelters and provide a nurturing environment for children. *Homo sapiens* grows the brains, not through direct absorption of DHA, but through the indirect intake of mother's milk. In the Garden of Eden, for the first time *sapiens* gets this over an extended childhood period.

Recently many nutritional studies have come to the conclusion that DHA is a likely breast milk nutrient that provides improved academic outcomes for breast-fed children. Mother's milk is high in DHA, and children who receive adequate amounts of DHA are shown to have higher intelligence than children who didn't get enough DHA.

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<sup>149</sup> Lamarck was a pre-Darwinist, who ascribed purpose to evolution. He is much loved by proponents of Intelligent Design.

Researchers at the University of Kentucky Chandler Medical Center found that the IQs of breast-fed babies are higher than that of formula-fed babies, after adjustment for key factors, such as the mother's age and intelligence, birth order, race, birth weight, gestational age, and socioeconomic status. This is in addition to an increase associated with maternal bonding. The enhanced cognitive development is seen as early as six months and is sustained through to 15 years of age. The longer a baby is breast-fed, the greater the increase in cognitive developmental benefit.

As for the argument that *Homo erectus* did not have access to DHA-rich, cold water fish. This argument is clearly wrong. The MIS6 Southern Cape was goddamn cold, so any fish found in these waters would have been of a cold water variety. Shellfish has since been proven as a source of omega-3. Most telling of all is still to come. It is my personal contention that whale meat was a key diet of *Homo erectus* in MIS6. A byproduct of Japanese research that still requires the killing of humpbacks confirms that whale meat is the richest source of omega-3. Any day now, with a bit of inside help from Curtis Marean and the Guys at Intelligent Design, my much anticipated, decorated whale bone is going to stick out of the archaeological record - living proof of the Old Mans work!

*Homo erectus* chilling out in the Garden of Eden would have been the first time in evolutionary history that a nurturing mammal mother would have had access to high quality omega-3 oils. Kids get this source of nutrients and mum lies in bed every night with the little ones, reading them *Harry Potter* while the older kids read *Moby Dick* and *Portnoy's Complaint*.

After putting the women and children to bed, we go looking for dinner. This is why today you and I seek out loose women in wine bars rather than trying to knock each other out of the tree fighting for banging rights.

Natural selection is the cornerstone of the theory of evolution. Millions of mutations keep the species changing, but the environment selects the successful, which are the ones to propagate. The environment itself does not alter the genes. The change is an indirect effect. For the first time in hominid history, rich kids are nurtured. These big-brained physical weaklings are helped through their early years by specialist mothers who no longer hunt. The cleverest survive. As adults they start out-competing their dumber siblings. When they do finally leave the cave these brats have become the fat bullies of the hominid world and are ready for a new active role in the destiny of the planet.

Encephalisation is rapid. This expansion shows up everywhere in our current anatomy. *H. sapiens* babies, quite simply, are born too soon. Whereas a whale or dolphin can swim immediately, we take years to develop physically. This is not surprising. The human fetus in the last days before birth is an exploding head. If you have been to any births, and I have been to three of them, the head is 90% of the effort. Get the head out and the rest is a cakewalk. Unlike us males, *sapiens* women really battle with childbirth and the reason is the explosion of encephalisation. The hips of *sapiens* women have not kept pace with the growth in our brains. God's introduction of the epidural cesar is Intelligent Design's way of dealing with the problem, and ensuring that the good-looking women on the cat walk still make great mothers.

No matter what the arguments for the effects of fatty acids and nurturing conditions, the basis of evolution is not through these methods. No amount of changes in your diet and environment can change your DNA. This can only be done with mutation and selection. If you followed the arguments on mtDNA then you will remember that females determine the route of the species, men just go along for the messaging. So how is it that big brains were chosen by our species? Is this the only organ we chose as preference?

The evolving anatomy in *sapiens* is not only reserved for women. Am I the only one that worries about why that 900-pound gorilla at the zoo has such a small shalogan? On average he has a 4 cm erection and the chicks still dig him? Am I the only one concerned that this is some sick joke that Intelligent Design handed out? Why do we even care about penis size? Daily my email box is filled with email marketers offering products to correct the problem for me. Sadly, anthropologists assure me that the only way to get a bigger penis is to evolve it and that is not much help to an atheist trying to get by on the one life on offer.

Compare primates and humans:<sup>150</sup>

- Sexual female behavior:
  1. chimpanzee: extremely promiscuous
  2. human: in between
  3. gorilla and orangutan: very faithful
  
- Penis size :
  1. human: longest and thickest penis (15 cm erect)
  2. chimpanzee: in between
  3. gorilla and orangutan: smallest (4 cm erect!)
  
- Testicle size:
  1. chimpanzee: largest
  2. human: in between
  3. gorilla and orangutan: smallest

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<sup>150</sup>This analysis comes from [penissizedebate.com](http://penissizedebate.com), a great resource for those that have these concerns.

Our knowledge of evolutionary biology tells us that evolution does not make mistakes. *God does not play dice*. There is *always* a reason that certain characteristics are favored for selection. Humans, above all other primates, have the largest brain and the largest penis per kg of total body mass. Racial jokes tell us about huge disparities in the caliber of the one-eyed heat-seeking missile. They place Africans as large, Asians as small and Europeans in the middle. It is not that funny. These same quasi-studies tell us Asians are the most intelligent, Africans the least and Europeans in the middle. We know that Asians are the most numerically successful; does this mean that the Vector of Evolution points to a smaller dick, with people of great intelligence worrying about it?<sup>151</sup>

Bell curve studies and pop websites excluded, there are so far no reliable studies that show a significant difference in the size of either organ across different races. So the next time someone cuts across you in the traffic, bring race into it by all means if it makes you feel better, but leave out organ size if you want to carry a genuine message. “Get out of my way you 1350 cc, 18 cm piledriver!”

For the sake of science, we still have to explain why man is king of the primate penile pushers. Darwin defined mammalian sexuality as male competition and female choice. Explaining mammalian males is easy; we typically strive to inseminate as many females of the species as we can handle. The investment is light and we have billion of cells to spare. The limit is females, who display a profound preference for men with what they, unconsciously, in accordance with their biological character, consider the best genes.

Female gorillas are the most faithful. One alpha male gets the full attention of two to three females. This means that when a male gorilla shoots his load into one of his favourite gals, his sperm will hardly

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<sup>151</sup> The Vector of Evolution is my terminology for the underlying purpose of Intelligent Design.

ever have competition from other males' sperm. It has all the time and chance to impregnate the female. No sperm competition means that even a small drop of semen will assure that *that* particular male will be the father of the offspring. That is why gorillas' testicles are extremely small. It is as quick as a dog lifting his leg to define his territory. It is all over in a few seconds.

Female chimpanzees in contrast are extremely promiscuous. At any given time, the female will have the sperm from at least two or three males inside her vagina. For a male to have a greater chance to make sure that it is one of his charges that wins the race, he needs to deliver the sperm close to the uterus – longer penis, or deliver big quantities of sperm – large testicles. The fact that gorillas and orangutans have small testicles and small penises proves that having big genitals is only an advantage under conditions of rampant female promiscuity, as is the case with humans and chimps. Longer penises deliver the sperm more efficiently in a vagina that already contains sperm from various other males. This explains to us why chimps have the biggest set of nutcracker twins. So far, so easy.

Remember the model of the females messaging genes between each other. Women know what women want, so in their offspring they want their male offspring to have the best chance of passing on their genes. Chimpettes figure that the hairy boys with big nuts have a bigger and more regular squirt and this will help their male offspring get more success. *Sapiens* females have also chosen for themselves big gonads. This is in line with behavior. They are bigger than those of gorillas because we need them more, but not as big as chimps, because chimp gals are even more promiscuous. *Capiche?*<sup>152</sup>

We have the Old Man to thank every day for sending us loose women; where would we be without them? “Thank heaven for little bad girls.”

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152 *Capiche?* – Italian for “Do you understand”?

But no matter how badly we view the habits of our opposite sex, it is nothing compared to what our troglodyte brethren have to endure. Chimpanzee females are even more promiscuous than humans. Nevertheless, we can thank Intelligent Design for not making our women faithful, otherwise we would be standing on our two legs alongside gorillas parading our 4 cm sticks.

What do we know about what women want? We already know that human females prefer more intelligent males. If you need time to figure that out, then you are already on the back foot.

The scary conclusion we also have to make is that human females truly do prefer longer and bigger penises. Studies come out at the same numbers. Human penises are on average 14.9cm (5.9 in) with a standard deviation of 2.1cm (0.8 in). Don't get put off by the giant dicks you see in porno movies, what the stats mean is that, Asians included, 95% of *sapiens* males have, in primate terms, large penises.

*Sapiens* females have a material interest in male-female bonding to preserve their genes. *Sapiens* females spend many years raising their young. Chimps and gorillas only give birth every few years, having raised the previous offspring in one year. *Sapiens* females have to take care of multiple offspring, born years apart, and possibly of different fathers. Through 200 000 years of evolution, our gals have developed a survival strategy that includes the permanent binding of a male partner. The benefit for the male partner lies in the permanent availability of a female for sexual intercourse. Now it has been shown that large-brained, clever *sapiens* outperform the dummies. So it is easy to see how the clever guys get it away. This has to be the explanation as to why the most successful guys have a really good barroom banter.

In Big Jim and the Twins, why does Big Jim play lead guitar and the Twins are left to make up the rhythm section? The twist in the monkey's tail is that no matter how comfortable it is back at the cave,

there is a definite interest for both the *sapiens* male and his female partners in being unfaithful. It is a no brainer for the male. Getting it away with another female means an increased chance to preserve one's genes at a very low risk. There is potentially no additional obligation. The female is inseminated, and after that, she alone cares for the common pool of genes, or even better enlists the help of another sucker who happens to be her permanent partner. *Smuck!*

The benefit of female unfaithfulness is subtler. In a society where one-on-one bonding is the standard pattern, only a few women end up with the best males, while other females form permanent partnerships with less than ideal males, who nevertheless can be of valuable help in raising offspring. However, the biological interest of these females is still to mix their own genes not with the genes of lesser males, but with those of the fittest men. The solution for females is to have occasional, even secretive, intercourse with an alpha male, and then take any male you can get as a permanent partner to help in raising the resultant offspring. *Bitch!*

It seems that *sapiens* males are not as dumb as women would think. With infidelity never far from our minds, a number of explanations come up. *Sapiens* needs protein for our second favorite organ, which in a chimp is less than the size of an apple. We don't want to waste our efforts pumping out copious volumes of wasted white slime when there are more elegant solutions. I like the one suggested by Gordon Gallup and Rebecca Burch of the University of New York State. Their basic argument is that a large penis acts as a scraping device to remove a rival's seminal fluid before ejaculation. Under conditions in which several males copulate with a female in close temporal proximity to one another, the male who mated with the female last would have an advantage, known as *last male precedence*.

The glans and coronal ridge of the human penis are also uniquely configured. The posterior portion of the glans is larger in diameter than the shaft, and at the interface between the glans and the shaft, the coronal ridge is positioned perpendicular to the shaft, the perfect scraper. In simple terms the helmet is the part that makes the bald headed champion look like Mr Mushroom. The coronal ridge is the sharp edge of the helmet. Chimps, like dogs, have no clearly differentiated glans or coronal ridge.

A greater penis length and squirt helps to place the contender's sperm closer to the cervix, and in support of this hypothesis, evolution gives us an immediate retraction of an erection on ejaculation. We would not want to scrape out our own offering!

Gallop and Burch also suggest how bipedalism could have played its part. In contrast to organisms that walk on all fours, the assumption of an upright posture and the emergence of bipedalism brought the female reproductive tract, and the vagina in particular, into a perpendicular orientation with gravity that is poorly suited to semen retention. Doing it lying down is good to prevent spilling, but is not great if she resumes walking immediately afterwards. Several mechanisms appear to postpone getting up after a sexual encounter, such as post-copulatory petting, polite conversation, soft music, patterns of nocturnal copulation, and the sedative effects of orgasm. Likewise, a long penis that provides for the release of semen deep in the vagina could also serve as a hedge against semen loss.

There you have it. The next time you look down with love and affection at Dr Robert Johnson, give him a break and realize that he may not actually be that much bigger or smaller than the rest of the military school graduates. Spare a thought for the Guys at Intelligent Design that had to figure out all of this evolutionary planning, just to ensure that we can enjoy a long stroke.

Was this in fact true of all hominids or is it a birthday gift from Intelligent Design? All this could be easily proved if those East Africans could find something useful – a fossilized *Australopithecus* penis. The archaeological record is hauntingly silent on penal expansion. In *Australopithecus* we know the average brain size to be 300 to 600 cc, but have absolutely no information about his pecker. I have even heard suggestions that the first cause of bipedalism was not to walk between trees, but for *Australopithecus* males to stand erect to show off their favorite organs. It is possible that *sapiens* females are not the first animals to suffer the sin of penis envy? Alas I fear we will never have the answer to this important paleoanthropological question. There simply are not any fossilized boners sticking out of the ground.

The big-brain/not-big-enough-penis conundrum has to have a better explanation than Intelligent Design playing a nasty joke. Can it be as simple as the fact that size in fact does matter and we just can't keep up. Females are faced with rapidly increasing brain size. Even though death in childbirth is common for small-hipped women, female bone structure can't adjust fast enough. The reproductive organs do their best to increase in size to hold the baby's increasing head and the *Homos* with the biggest erectuses just simply get more of the action.

Does the largely reduced red meat diet have any effect on the development of man? The carnivorous *neanderthalensis* develops a robust big brain, without encephalisation. In a shorter period the aquatic/vegetable diet of *sapiens* produces a completely different, highly intelligent animal.

Along with Adolf Hitler and a billion supposedly intelligent Asians, I have been a vegequarian for 30 years. This means a basic vegetarian diet supplemented by packaged protein and certain non-fatty marine foods. Vegetarians start out for health reasons, religious reasons, moral reasons or because they simply can't stand the smell of

rotting flesh, but they end up having all of these reasons. Have no doubt that vegetarians are different. Our sense of taste is heightened. For example we can taste the difference in colour between red and yellow peppers or chillies. We notice the oiliness of a meat-eater's skin and we can smell them from close up. We even start to notice the economics; the meat industry is traditionally controlled by the right wing. Vegetarianism changes the way that you look at life.

A non-meat diet changes the way that your brain develops. A drummer I once played with had a day job as a brain surgeon at a local hospital in Johannesburg. He specialized in cancer patients. In his 30 years on the job he never missed a beat in the music and never met a vegetarian in the brain cancer ward.

As I only eat vegetables and seafood, I am always amazed how people crave meat, like a smoker craves a drag on the balcony. It is a known fact that modern human adults do not have a major requirement for protein. The craving is a desire for fat, the indirect omega-6 fat. It is the fat and the energy that it gives you, not the protein, that makes a barbie an absolute favorite from Alaska to Australia.<sup>153</sup> Fish oils and particularly derivatives like omega-3 have a completely different effect. On the seventh day those that ate fish became *Homo sapiens*. God looked on his work and it was good. He took the rest of the day off.

The brain size of *H. erectus* has been in stasis for two million years; he has been hunting and scavenging meat and supplementing this with a varied diet based on whatever he can pluck, rip or dig from the surrounding bush. Here in the Garden of Eden in MIS6 first class meat is in short supply. But abundantly available are shellfish, crustaceans, and if you believe my logic, whale meat.

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<sup>153</sup> A Barbie or barbeque is a fireside smoking of meat. Started by *neanderthalensis* and carried on today by Australians and Afrikaners.

In the cool conditions, about six degrees cooler than today, the arrival of a whale on the beach would have been a major life-bringing event that would feed the tribe for weeks. Like the modern Japanese whalers, those in control of the stock would surely, even then, have been able to get \$500 in cowrie shells for a fresh whale steak. You can imagine that with an expanding brain it was not long before tribal leaders, in times of need, began using the newly encephalised organ to pray to God to send us more whales.

Could encephalisation happen so fast? The Riss Ice Age lasted from 190 000 to 130 000 years ago. Was it possible for encephalisation to happen in a period of 50 000 years? Good question. Could all of this have happened in 200 000 generations? The Jehovah's Witness book on the myth of evolution says this is impossible. I mean how many bones were added to a giraffe's neck to make it so long? The answer is none, it has seven vertebrates, just like the rest of us dog-like mammals. It is just that in a giraffe, they are particularly elongated.

We have all heard the arguments about the students that breed rats and keep lopping off their tails and after ten generations the tails are no longer. All that the students need do is change the experiment slightly. To see the speed of evolution simply keep the farmer's wife out of the lab and use rats that are not blind. Do it like the German breeders of fine Alsations. Out of every litter kill all the babies except the two with the longest tails. Watch those rat tails grow rapidly. To speed up the experiment, put up the results of each generation in rat speak in the girl rats toilet, accompanied by vivid pics of the guys with the short tails getting their heads chopped off. Watch the guy rats with all the long tails suddenly get all the action.

You can see this even more dramatically in African elephants. Up until *Homo erectus* comes along and wipes out the sabertoothed tiger, big tusks are an absolute must-have accessory for all alpha male bull elephants. After the extinction of their only natural enemy, tusks get smaller, but there's no rush and the biggest tusks still get you the most action. When the guys with the fire-sticks arrive 500 years ago, all that changes. Suddenly big tusks became a liability and female elephants, like most mammalian mothers, don't like the idea of their young meeting early deaths. Tusks have rapidly diminished in modern elephants and in a few generations the results are remarkable. Evolution has moved faster than any conservationist or eugenicist could have operated.

Game rangers and professional zoologists say the above argument is total nonsense. Rats can't read, and the reason that elephants tusks have got smaller is not female choice, but simply that we shot all the big tuskers, every last one of them. The argument doesn't change the outcome. Remove a gene from the gene pool and quickly the species starts to evolve.

*Homo erectus* starts from a much higher base than whales or dolphins. We are not starting a whole new organ, we are merely encephalising an existing 900 cc brain. If dolphins were that bright, they would not be getting caught in gill nets. *Homo erectus* might not get into Harvard today, but he would certainly whip any *Australopithecus* at a game of chess.

It is only 300 000 generations since the first humans left Africa and in this blink we already have the variation between Aborigines and Vikings. Surely we could have expanded our brains and opened our minds in the 50 000 years of MIS6, the longest ice age of recent history? We were an isolated group in a new ecological niche.

Pilgrim, proof of the scope of the encephalisation still eludes us. It is here that the bone collecting has been hapless in contributing to the problem. It is going to be a whole lot easier to see what I mean when you make the pilgrimage yourself to the Garden of Eden, Bone collecting is going to be really tough and looks set to provide us with little help. We are in a warm high tide period. Whatever Al Gore does over the next 50 years, this is unlikely to change. The sea is at its highest level and likely to get even higher. Unless you believe Denis Quaid in *The Day after Tomorrow*, an ice age is not imminent. The Garden of Eden is near its smallest in 200 000 years. So while Africa drifts north and offers us extra inches each year, these advances are highly likely to get taken up by rising sea levels.

In the small band of seashore that lines the Garden Route are some of the most precious hominid sites in the world. Blombos Cave, Klassies River and Pinnacle Point lie on the coast line that was present 120 000 years ago and near to the coast line of 140 000 years ago and 70 000 years ago. But there is a huge danger lurking...

One of the highlights of my life was standing in a bunker on Simola golf course when it was under construction taking a piss with Jack Nicklaus. Unbelievable that the winner of all four majors, and on his way to becoming the second greatest golfer in history, does it just like the rest of us.<sup>154</sup> As we are shaking off the drops, Jack turns to Phil and says that he has flown up and down the coast by helicopter and identified 36 potential sites for new golf courses. I didn't have the heart to tell him that some of us think that maybe it is just a whole lot more important to be using the beach sites to sift through bone segments than it is to use it to putt on. Don't get me wrong, putting is important; it is just that bone sifting is even more important.

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<sup>154</sup>N Jack Nicklaus was a childhood hero. Jack was always number one, the greatest golfer, until Tiger came along.

However the coast lines of the Southern Cape can only give us so much of the story. We have this small window and bone chips and artifacts do turn up, but they are not going to give us what we want. We are looking at deposits that are 50 000 to 150 000 years old. Ideally we need to be looking for deposits that are 150 000 to 200 000 years old. The problem is that the early MIS6 coastline was roughly that of the modern day continental shelf, 200 km south of Cape Agulhas and Mossel Bay.

Archeology today does not have a branch to deal with the issues involved. Current marine archeology is restricted to pulling out statues from basements in Venice and looking for the lost continent of Atlantis. It is going to be a challenge to find further evidence of the Garden of Eden using traditional archaeological methods. This is not going to be like finding Greek statues in the Mediterranean. It is hard enough to find *Homo erectus* in broad daylight. I simply don't see us having the tools at the moment to go looking for him off Cape Agulhas. Looking for *visvuige* or fish traps in the sea off Agulhas would be a good start.<sup>155</sup> These are relatively large structures that may still retain some form of shape out in the sea. This should be an opening indication of activity.

The Agulhas sea plain has much to offer us. This is a unique part of the world that has a Mediterranean, winter rainfall climate and the effect of a warm current coming in from the east. The Agulhas current rips down along the edge of the continental shelf. In the height of the ice age, with the coastal plain exposed, it is possible that the Beachwalkers come to live very close to the warmer current. We are learning that the Southern Cape may be milder than most places on earth in MIS6.

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<sup>155</sup> *Visvuige* are fish traps used by the Beachwalkers to create a patchwork of rockpools that fill up in the high tide and trap fish when the tide goes out. Should all be national monuments. We will still find that these are be some of the oldest structures ever built.

Paleoclimatologist Rainer Zahn of the University of Barcelona points out that salt levels are strong indicators of warm and cold cycles. By examining drilling cores in the Agulhas plain, we will be able to tell what the climate was like and whether the fynbos followed the sea line out to the edge of the continental shelf.

There is much to be done and much to be learned from the Southern Cape coastline and it is only now that top level archaeological techniques are being deployed that the prehistory is starting to reveal itself. This would be a good time for God to reveal himself and let some American diving tourist bring up a *Homo erectus* or early *sapiens* skull, dated at about 170 000 years and measuring about 1200 cc. If that's not part of the Intelligent Design plan, then a decorated whale bone dated about 150 000 years ago will do fine.



## Famine in Paradise

15th February 2001. The public sector publishes the human genome in *Nature*.<sup>156</sup> The full sequence of who we are is now in the public domain. It becomes a lot easier for any scientific team to do genetic research. We start to develop a language and methodology for comparing DNA. The science of population genetics is born.

These dates, terms and acronyms are complex and must be bothering you. It is very difficult to grok<sup>157</sup> what 200 000 years is. Conceptually, it makes it easier if you think of it as one biblical day. Suppose modern human history spans 240 000 years and we are going to map it all onto one day ending at midnight. Then each hour is 10 000 years.

*For the first 11 hours, Homo erectus is wandering around the Southern Cape in the cold and dark, leading a pretty miserable life, scavenging for small game and picking roots and plants out of the ground. He comes across a dead whale on the beach and after hacking his way into it using a stone axe, he is delighted by the tasty meat he finds inside. He invites a few of his buddies down for a barbie and they all tuck in. The more they eat, the more they notice how intelligent the conversation is becoming.*

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<sup>156</sup>It is a great story how Craig Venter and Celera Genomics try to hook it into private patent.

<sup>157</sup>The Martian word for “get it”. Comes from Robert Heinlein's *Stranger in a Strange Land*. Banned as subversive material in the Old South Africa. Great science fiction in the rest of the world.

*11 am – A few of the members of the tribe, feeling confident with their new-found view of the world, walk out of the Garden of Eden just before lunch and head up both coasts of Africa. They don't find many whales there. They soon return to their hunter gatherer ways, but this time with their new-found intelligence they are a lot better at it. They make tools, take hallucinogenic drugs and paint merry pictures on the rocks. A small fraction of these artworks survives through to the end of the day to give us a glimpse of what this wondrous world of outdoor galleries would have looked like.  
Lunch is served during MIS5*

*4 pm – A few of them walk across the gulf of Aden into the new world and find that once you get out of Africa, things get a whole lot easier. Large animals stare at you blankly as you walk up to them and stab them in the face with a pointed stick.*

*9 pm – They have whipped the Neanderthals and half the big game on three continents.*

*11 pm – They make it to America where they finish off the mammoth, sabertooth tiger and giant sloth.*

*11-45 pm – A Jew in Israel declares himself the son of God and starts the most successful religion in business history. He tells them to go forth and multiply, which is exactly what they do.<sup>158</sup>*

*11-58 pm – Bartholomew Diaz lands in Mossel Bay and does not recognize his own people, even though they have been partying on the beach since 8 this morning.*

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<sup>158</sup>Not quite, it was Moses that came up with the idea of breeding dominance. All rabbits and rabbis since then have supported the idea.

*11-59 pm – They have produced 1.5 billion offspring and Charles Darwin takes a trip in the Beagle.*

*11-59 pm and 30 seconds – There are now three billion of us and God plants the Taung baby skull in the Buxton limeworks to confuse us.*

*Boing! 12 midnight – The carriage turns to pumpkin and as we look around us, there are six billion hungry monkeys jiving in the living room, climbing on the buffet, getting and spending and generally laying waste to the planet.*

Pilgrim, we are in an evolutionary Big Bang. How did this happen? How did we move from a humble and gracious tribe, eating and worshipping whales in the Agulhas basin, to this monstrous mass we have become?

The Garden of Eden is not that envisaged by Genesis or Richard Leakey. The Cape is an interesting place, defined by Eurocentrics as having a Mediterranean climate, but it is more than that. From the west the rainfall is almost exclusively winter-based and as you move towards Agulhas and Mossel Bay, you get splatterings of summer rain, but rainfall in Cape Town is 600 mm and to the east it drops to 400 mm. Technically it is a desert.

Cape summers are great for summer birds, who jet in from the north for a few days from December to April. They get bright sunny days that finish at 9 pm and are sure to give you great golf and guarantee that the Boxing Day cricket test will have a full five-day result. But for the locals, these are days racked by the dry dust of the rainless high pressure southeaster.

Those of us who live in Cape Town long for the winter, which brings rain, great storms and some of the best surfing swell on the planet, punctuated by beautiful warm windless days. The winter is the green season, the time of feasting. This is the time for mushrooms. This moderate climate is what makes the Garden of Eden a haven during ice ages.

Fynbos is a hardy bush. It lives through the summer drought and seems to thrive on no water. For a long time this confused the botanists of the Cape Floral kingdom. How could the world's most speciated plant kingdom survive this famine? The solution is clouds. If you have ever seen the southeaster blow the clouds over Table Mountain, the answer is staring you straight in the face. The locals call it the "Devil Smoking". It is from this humble mist precipitation that the fynbos sips its summer drink. The fact that mist is not evenly distributed over the small mountain ranges of the western and south Cape is the reason that there are so many different varieties. It is a little more complex than that; you have to add the effect of fire and nutrient variations to build the full model.

Of course fynbos was not of much interest to the *Homo erectus* botanical society, whose biggest problem was collecting fees from its members, nay worse, getting members in the first place.

For the encephalisation period 200 000 to 140 000, the infant *Homo sapiens* grows up in a paradise, but a small paradise. Without refrigeration, which is only brought much later by the Settlers, the Beachwalkers have to stay close to the sea. Seafood must be either in the sea, in the stomach or in the breast milk. The Beachwalkers get their protein from the seafood and their carbohydrates from the fynbos bulbs. We find the remains of the seashells in their cave dwellings.

We also know from studies of phytoliths done by Rosa Albert in the caves at Pinnacle Point that they were cooking bulbs. When bulbs are burnt in the cave fires, the ashes leave small hardened crystal-like

microscopic objects that take the shape of plant cells. Under microscope we are able to identify these cells and infer what they Beachwalkers were eating 140 000 years ago – bulbs. The Beachwalkers were trapped between the seashore and the inland extent of the fynbos. These were the virtual walls of the Garden of Eden. Inside, this becomes a way of life. The group that meet Diaz have been living on the beach like this for 200 000 years!<sup>159</sup>

This leads to the period 130 000 years BC, MIS5, where the climate is more or less as it is today. The sea is far forward, land is tight, game is less sparse. God has deserted us when we need him most and the whales have gone south again. Suddenly it does not look so bad on the other side of the Fold Mountains. The Eden leavers are groups that move away from the Beachwalkers and go on to become the sons of Abel, the ancestors of the modern San walking up the west coast, and the sons of Cain, the ancestors of the Hadzane in Tanzania walking up the west coast. Here the archaeological record is full. Up the west coast we are finding great evidence of human activity 120 000 to 70 000 years ago – 50 000 years before we find paintings in Cro Magon France. We find fields of hand axes.

At Klassies River east of Eden and then later at Border Cave far up the east coast, we find evidence of *Homo sapiens* in full party mode and packed for the trip north. However it is only after 100 000 years ago that we find a change to truly modern behavior. Either we have still to find proof of early modern behavior, or there is a surprisingly long gap between the two events.

Richard Klein of Stanford is one of the most eloquent researchers on this period.<sup>160</sup> Not everyone can play Paleoquaterback. It is especially difficult to do this in Africa. He likes to sit out the special team plays on the bench in the comforts of California.

<sup>159</sup> It is likely to be more complex than this as much could have happened in this duration

<sup>160</sup> *The Dawn of Human Culture*, Richard Klein

For 30 years he comes annually to South Africa. For many years he is the leading voice in *Out of Africa* and he works the Southern Cape sites remotely. The period 200 000 to 50 000 years ago is sparse on human fossil evidence due to unfit conditions for fossil formation and the small populations. However the litter he leaves is plenty of evidence of man's dirty work.

Klein analyses the bones at Klassies River and notices that there are more eland antelope bones than buffalo bones, even though buffalo is the dominant species. After 50 000 years ago, buffalo bones become the majority. Humans love a buffalo braai, but it is only after 50 000 years ago that we develop the sharp pointy sticks that allow us to attack dangerous animals at a distance and organize coordinated attacks. The Beachwalkers are arming themselves for the later assault, where they take over the world.

Klein is also the leading proponent of the "replacement theory", a euphemism for that fact that *sapiens* arrive in Europe and are directly or indirectly involved in the genocide of Neanderthals.

*Looking at Neanderthal and Cro-Magnon artifacts was an eye-opening experience, Klein says. Cro-Magnon artifacts were clearly more sophisticated than those of the Neanderthals. For instance, only the Cro-Magnons had made ornamental objects out of bone and ivory. When he tried to classify stone artifacts, Klein was struck by the difference between the two peoples. He found that he could easily sort the Cro-Magnon artifacts into many different categories, such as projectile points, engraving tools, knife blades, and drilling and piercing tools. The Neanderthal artifacts, by contrast, were often difficult or impossible to classify.*

Early *sapiens* behavior is important to our story because it is in the Southern Cape that the killers' advantage is honed and developed.

The ability to organize killing is then exported to the rest of the world. The European descendants simply add the tanks, the mustard gas and the atomic fission explosions.

The Beachwalkers expand right up to Enkapune Ya Muto, a cave in central Kenya, which provides 40 000 year old evidence of ostrich eggshell beads. These beads are interesting because they mimic the behavior of modern San, who also use ostrich shells in a gift-trade ritual. These beads, among the earliest instances of personal decoration in the archaeological record, document an element of the mind that Klein considers to be uniquely human: cognitive ability to communicate and interpret symbols.

Evidence of man in this period of Africa is very rare, and suggests that we had far fewer members of our race in those days. It is also evidence that we came from a compact beginning. One of the earliest bits of evidence of the Eden leavers comes from Kraal Bay near Langebaan, about 100 km from Cape Town up the west coast. In 1995 Dave Roberts of the Council for Geoscience finds modern human footprints in the dunes 1.4 meters above sea level. This puts these footprints into MIS5, between 130 000 and 110 000 BC. These results have been verified by Lee Berger of Wits.

Meanwhile back in the Garden of Eden, even though the party has lost its buzz, people stay on and the Beachwalkers go through five ice ages. It is like living in an evolutionary tidal pool. They continue to eat marine-dominant diets and carry on like this until the KhoiKhoi arrive 3000 years ago. They begin trading cattle with the Bantu in very recent times. By the time Batholomew Diaz meets them, cattle are a big part of their lives and they have the largest brains in the history of the world – they have maxed out at just over 1400 cc. They are still doing more or less what the original Beachwalkers were doing, hanging out at the mall, doing drugs and trying to get laid.

At Klaassies river and Blombos we find evidence of shells strung together in jewelery around 70 000 years ago. When one looks at this compelling archaeological evidence, you can only conclude that from a very early age, we were singing and dancing and moving to the grooving. You have gotta believe that even the earliest *Homo sapiens* was praying to some God to deliver him the next whale carcass.

If you are starting to get my drift, Bayesian paleoanthropology works with scenarios. We pick the possible scenarios and try to create likelihood functions. Sometimes this is rigorous mathematics, sometimes we simply have little to no data to work on and we have to fill in the gaps as best we can. This suggestion of mine is going to have Louis Leakey's ghost splitting his splitter pants and rumbling up and down the Rift Valley, scaring off rookie US field students lying awake in their tents on moonless nights. Louis' style of science would have preferred that we spent the next 50 years looking for that missing whale bone, to see if the Beachwalkers swerved their fish straight up, sashimi style or sushi style with rice, and whether they passed the finger bowl from left to right or right to left. We are forced to make do with what we have. The maxim is that absence of evidence is not evidence of absence.<sup>161</sup>

These pioneer breakaway Beachwalkers in the 130 000 to 110 000 years period are likely to have stuck to the coast. They move very slowly. No matter how much Intelligent Design pokes them along, this isn't a mission to get to South America. *Homo erectus* and his encephalised descendant *Homo sapiens* are not driving around Africa in a Landrover with the express purpose of finding the next step on the evolutionary ladder. They aren't actually going anywhere, they are simply ambling around, hunting and gathering and looking for their next fix.

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<sup>161</sup> Attributed to Carl Sagan the famous astronomer.

*I wanna walk like you, talk like you, Oobedoo, can learn to be Human to-oo.* Slowly but surely *Homo erectus* was to be the first victim of man's expansion out of Eden.

The period one million years ago to 20 000 years ago is tough for bone collecting in Africa. Unfortunately the soils of Africa have leached away the evidence. It is hard to see where *erectus* ends and *sapiens* starts. In the African markets of microbial life, calcium is a prized commodity. Any bone left lying around is soon biodegraded and fed to the starving microbial billions in need of calcium. Only the bones left in limestone quarries, where calcium is abundant, are left for posterity. This is where Broom finds *Australopithecus* in the 1930s.

80 000 years downward to 10 000 years it is still vague. It is all there, lying in the sand and genes of Mozambique, Tanzania, and on the west coast in Angola, Congo and Nigeria. Who were the people that left Africa 60 000 years ago? Take a look at the map. Remember these hunter gatherers have a fear of flying, so it would not seem unreasonable to assume that the western San go up the west coast, and stay in sub-Saharan Africa. The eastern branch becomes the ancestors of the Hadzebe. Some of these east coasters are the ones that walk out of Africa 60 000 years ago. Much later the ones that stay in Africa are pushed back down south and absorbed by the migrations of the Bantu.

The history of the rest of the world after 60 000 years ago is well-plotted by the boom in population geneticists. *Sapiens* spread out first to Asia and Australia and later to Europe. America is the last to get colonized. Everywhere they go *sapiens* sows a wave of destruction on an unready world. Very few of the world's large animals survive.

What is not yet known is how the West Africans develop from the Beachwalkers. Are they a development of the west coast branch, or are they also descended from the east coast branch?

We do know that the Central and West African branches split off around 90 000 years ago. In this time new groups are formed – Pygmies, Negroes and much later Bantu and then Afro-Americans. I know in this book that I take the piss out of Afro-Americans, but by now you will have picked up that I dig hardest at the people I like the most. The West Africans are a superb race. They contribute in so many areas. I lived in the era of great heavyweight champions. Boxers are warriors, they should not be rated by their social skills or business acumen. This is why I name my second son Mike.<sup>162</sup>

I play the double bass which is an instrument ruled by Afro-Americans; Paul Chambers, Charlie Mingus, Ray Brown, Ron Carter, Stanley Clark, Christian McBride are my idols. The irony of it is that when black Americans come to South Africa they find that have more in common with white South Africans than black South Africans. I feel the same way when I go to the US. I have more in common with Afros than Rednecks.

My main contact with Negroes comes through American football. Around the time that the Americans become interested in African paleoanthropology, I become interested in American football. I thought it a fair exchange. Gridiron and paleoanthropology are very similar. There is something deeply satisfying about knocking another man back onto his butt. Anyone who has ever played Gridiron football knows that players of West African descent make the best football players. Everyone who has played paleoanthropology knows that the aim of the science is to knock the other back onto his butt. Explain it whatever way you like – strongest guys making the ship journey, cross-breeding with Viking immigrants, Intelligent Design. God might be interested in human development, but in my experience, he sure as hell is not interested in football. There is absolutely no evidence to suggest that *Homo erectus* was interested in football either.

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<sup>162</sup> In his rise to the heavyweight title, Mike Tyson sets a new standard in boxing.

The point I am trying to make is that in a football context, West Africans are a superior technology. This difference is a deep-rooted genetic difference between themselves and Europeans.

Rugby is the main game that South Africans use to bash each other on Saturday afternoons. But in my fighting days, this was controlled by the Afrikaner right wing. We simply did not scrum with a racist bum. American Football was the alternative. For ten years I run the Wits Vikings American Football team. While Tobias and Berger study anatomy at the Bernard Price Institute, we rearrange it down the road.

Playing football leads me to a really alternative life style. In 1988 I play a game in a stadium of 10 000 people, in Manchester, UK of all places. There are about 100 players on the field and about 100 white spectators in the stands. The rest of the crowd are black Britons and Afro-Americans. This is at the height of the sports boycott and most of these people have never met any South African, let alone *Never met a Nice South African*.<sup>163</sup> Word soon gets around that there is one in the game and by the end of it they are fighting each other to get a piece of me. Even though we lost, I would like to think that at the end of the game they still have *Never met a Nice South African*.

If you are used to the biting and scraping and kicking that was eighties rugby, to play football for and against West Africans and Afro-Americans is a privilege. They are passionate, committed and meticulously honorable sportsmen. They come at you with a clean, powerful fist and hit you in a way which you just don't find easily elsewhere. It is absolutely no coincidence that they dominate contact sports. It is in their genes and in their custom. I thank them for inviting me into this culture and never making me feel out of place, right at the height of sport sanctions.

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<sup>163</sup>My barb at the Spitting Image cartoon series who dined out at our expense on the royalties of their song, "I've never met a nice South African"

The current thinking on Africans is that Negroes are the quintessential form of African, but the genetics is proving otherwise. The West Africans are an adaptation of the Beachwalkers that leave the Garden of Eden and probably walk up the west coast of Africa, the split of around 90 000 years ago. From there they started a different genetic journey to the rest of us, who are descendants of those that left Africa via the east coast. The prehistory period 80 000 to 10 000 inside Africa is still cloudy, but with work this can be solved.

It is still early days in the analysis of the genome inside Africa, so much of this is speculation on my part. The Pygmies are a different group and look likely to precede the Negroes. Pygmies don't make great geneticists. Geneticists tend to focus their on their own European ancestry. This should change in the near future when Pygmies themselves take up doctoral studies and focus research on their own tribes. It should show that Pygmies developed and pushed into the bulge of Africa, where they find bounteous country, but also malaria.

The big adaption for the Negroes and Pygmies is a dark skin and a resistance to malaria. Malaria seems to be the driving force behind West African adaption. In non-African populations, variation in MCR1 is several time higher than other DNA variations. This shows a willing ability to adapt skin color. When we look at MCR1 in West African populations there is strong functional constraint which ensures dark skin. The cost of this adaption was the inability to lighten skin because, like Elvis, these genes have left the building. The anti-malaria adaption also brings up complications like sickle cell anemia. This explains why Afro-Americans, even though they are essentially a mixed race, still retain their dark color. The genetic split between West Africans and the rest of the world is deeper than the Out of Africa move 60 000 years ago. I look forward to watching the results as the prehistory of Western and Central Africa is worked out over the next few years.

Human origins is big business, and the Europeans, East Africans and Americans are the major market players. Teams digging away in Europe, North and East Africa are not there to prove that *sapiens* originated in the Southern Cape. Such a line of thinking would not be very profitable for finding research funding. The finds that they make are very likely to provide Out of Africa *carpensis* with more problems than solutions. Any hypothesis of a southern Out of Africa *carpensis*<sup>164</sup> is going to have to deal with Kibish and Herto. As I am proposing *carpensis* here, let me open the bowling. Fortunately I have been brushing up on my inswingers and am ready for some bodyline bumper attacks.

First in to bat is Richard Leakey with the Kibish Omo fossils. More precisely, coming off the bench, as a pinch-hitter,<sup>165</sup> is his replacement, Frank Brown of University of Utah College of Mines and Earth Sciences. The skulls are first brought to the attention of the world by Richard, whose team unearths the specimens in sediments along the Omo River in Southern Ethiopia, near the town of Kibish, in 1967. They find the skull, minus the face, and partial skeleton, parts of arms, legs, feet and the pelvis, of Omo I, and the top and back of the skull of Omo II. These are initially dated at around 104 000 and 130 000 years respectively, based on the decay rate of radioactive uranium atoms contained in oyster shells found near the skulls.

“But that date should always have been taken with a pinch of salt”, says Brown, who leads a US–Australian team on a mission to re date the Omo fossils using modern techniques. The new results are regarded as far more robust. They depend on the known decay rate of radioactive atoms of potassium 40 into the gas argon 40 in feldspar

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<sup>164</sup> To clarify, Out of Africa 1 was *Homo erectus* leaving Africa 1.8 million years ago. OOA2 is *Sapiens* leaving 60 000 to 80 000 years ago. OOA *carpensis* means that *sapiens* started in the Southern Cape and moved up and out from there – *carpensis*, from the Cape – my name for it

<sup>165</sup> In cricket a pinch-hitter is someone who is expected to make runs quickly. Not necessarily many, but the rate is fast.

mineral crystals. These crystals are retrieved from chunks of pumice in volcanic ash layers above and below the skulls.

Argon-based techniques used in East Africa on volcanics are highly precise, of the order of 2–3% of age, but are typically used to date bracketing sediments. Brown is firm on these dates and gets around the bracketing problem with some additional climate evidence on ancient flooding in the region.

*Potassium-argon dating shows that a layer of ash no more than 10 feet, 3 meters below Omo I's and Omo II's burial place is 196 000 years old, give or take 2 000 years. Another layer is 104 000 years old. It is almost 160 feet, 50 meters above the layer that yielded the Omo humans. The unconformities represent periods of time when rock was eroded, so the fossils must be much older than the 104 000 year old layer and close in age to the 196 000 year old layer.*

*The clinching evidence comes from sapropels, which are dark rock layers on the Mediterranean seafloor that were deposited when floods of fresh water poured out of the Nile River during rainy times. The Blue Nile and White Nile tributaries share a drainage divide with the Omo River. During ancient wet periods, monsoons on the Ethiopian highlands sent annual floods surging down the Nile system, causing sapropels to form on the seafloor, and sent floods down the Omo, making Lake Turkana rise and depositing Kibish Formation sediments on the river's ancient delta.*

Brown is like OJ Simpson, he has the answers before you can even ask the questions. It does seem odd to go back after 40 years into Africa and find the exact location of a find before the age of GPS, using old scientific reports, photographs and film to identify the precise dig co-ordinates.

*The records and maps are correct and we actually went back and found a few more pieces of the skeleton and some of them glue on to the pieces that were found in 1967.*

My only help comes from Chris Stringer of London's Natural History Museum. Stringer is the Benedict Arnold of European paleoanthropology.<sup>166</sup> Until Stringer, Europe is bewitched by *neanderthalensis*. Don't worry about what the South Africans have been saying for 50 years or what the American geneticists have been saying for ten years, it takes one of their own to finally convince the Europeans of the African origin of *sapiens*. The geneticists have already begun to allude to the African Event, but it is Stringer's book *African Exodus* that keeps me awake at night in 1996 with the full story of the African beginning.<sup>167</sup> After *African Exodus*, no starry night is ever the same again in Africa, every one of us who has read it, and stands in Africa, feels a new bonding to the dust.

Stringer, who worked on the Omo skulls more than 20 years ago, felt that the Omo finds were about 100 000 years old. But to Brown and his team 104 000-year-old skulls don't buy any press. Fortunately the Guys at Intelligent Design lend Brown and his Antipodean teammates a hand and "with some additional climate evidence on ancient flooding in the region, the team was able to show the Omo finds were actually very close to the 196 000 year mark". The team finishes with a sweeping statement that puts the specimens close to the time expected for the evolutionary emergence of our species just over 200 000 years ago. "These are the earliest known examples of our own species and that suggests they lived earlier still," comments *Nature* senior editor Dr Henry Gee.

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<sup>166</sup> Benedict Arnold is the famous American traitor who sides with the British.

<sup>167</sup> *African Exodus* is cowritten with Robin McKie.

Brown's Australians, like Donald Bradman, can hit anything you bowl at them. They cover all the angles, while I struggle to tell the difference between potassium and argon and a disco light. I am left clutching at straws, such as, *if the bodies were 104 000 years old, we know from the Israeli sites that these people buried their dead, could they have buried them lower than they actually died?* When Richard Leakey pulled these bones out in 1967, he would not have been looking for these signs, in situ. He would have been like Robert Broom, blasting rocks out of the walls.<sup>168</sup>

*Sapiens* in Ethiopia in 197 000 BC just does not make sense. MIS6 at this time would have Ethiopia looking a lot drier than it does today. Besides spice farming, what was *sapiens* doing in Ethiopia? He must have needed a still suit to retain water, like the Freeman in *Dune*.<sup>169</sup> Why don't we find fossilized sand worms and deposits of spice? If *sapiens* starts in East Africa and walks from Ethiopia down to Mossel Bay, why does he leave no evidence of his trip on his way down to Pinnacle Point, where we find him in 167 000 BC, like, say, dropping some of his golf clubs in Tanzania or Mozambique on the down trip?

I have even written to Intelligent Design asking them if Omo is simply another one of their confusing fossil deposits. In typical fashion they refuse to answer and expect me to wait until I hear the owl call my name.<sup>170</sup> Until then, the only certainty I have about the *erectus sapiens* transition is death and taxes.

Striding to the crease at first change for the East Africans is Chris Stringer with the Herto Fossils.<sup>171</sup> You can't blame Chris Stringer for dissing Brown's analysis of Omo; however, this is not because he is a

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168 At the end of his career, Robert Broom used dynamite to blast away the limestone at Sterkfontein. This eventually led to him being banned from the site.

169 *Dune* the science fiction novel by Frank Herbert, has the Freeman of Arakis, mining Spice for the master of the universe.

170 A euphemism for impending death.

171 In cricket, openers face the fast balls and your best batsman comes in at first change

friend of Out of Africa *carpensis*. Stringer, along with Tim White of UC Berkley and Berhane Asfaw, put their chips down behind a rival Ethiopian hominid site at Herto. The whole effort is nicknamed “Out of Ethiopia”. The fossil-rich site was discovered in 1997 by White in a dry and dusty valley bordering the Middle Awash River near a seasonally occupied village.

Tim White casts a long shadow over the sport of paleoanthropology, ever since he beat out Richard Leakey in the eighties.<sup>172</sup> Legend has it that Richard was flummoxed by his awkward Southpaw stance. Since then no one has dared get into the ring with White. Not even Don King can get him a fight. White writes in a review about the work of Lee Berger, South Africa’s premier paleoanthropologist and the current boss at Wits.

*Footsteps of Eve, the Berger and Hilton-Barber book, will be remembered for having tarnished the reputations of the authors, the National Geographic Society, and the University of the Witwatersrand. Its false nationalism was a disservice both to science and South Africa, and, as the professional community immediately recognized, the book set new low standards for the genre.*

I played most of my football at the Wits Stadium in Johannesburg. You can imagine that when White gets the ball in a homecoming game, a roar for his blood goes up from some of the more rowdy elements in the crowd. At least when *God’s First Fishermen* gets out, Hilton-Barber and Berger will be spared this notorious label, as a new low standard will surely be set.

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<sup>172</sup> Story goes that because of the Leakeys’ ball twisting monopoly over Kenyan digging rights, White moved north to Ethiopia and found even better sites up there.

White, remember, is the “King of the Splitters, the desert VIP”.<sup>173</sup> Like a St Peter trying to get through a road block, White denies his splitter label, and sees himself as a lumper. This no doubt means that when he does see a new species, it must truly be new! White’s team can’t get it right to launch Herto as a new species, so they name Herto as a new subspecies, *Homo sapiens idaltu* – to “differentiate” them from contemporary humans, *Homo sapiens sapiens*. Do you think that they will accept some skulls that I found about 100 meters apart in an apartheid cemetery in Jo’burg, *Homo sapiens boerci* and *Homo sapiens sowetan*.<sup>174</sup>

The concept of a subspecies in humans is itself anathema. With an evolutionary history of only 200 000 years, modern humans have simply not been around for long enough to develop subspecies. Chimpanzees living only in West Africa and central Africa show more than twice the genetic variation that *sapiens* do. It is even questionable that we can regard race as a differentiating factor between human populations. Remember that we have inherited our ability to adapt from *Homo erectus*, which is why I call him *Homo adaptus*. Splitters, I am afraid that *Homo sapiens idaltu* is about as valid as me calling myself *Homo sapiens capensis*.

The Herto skulls are the fossilized skulls of two adults and one child and are dated at 160 000 years, making them, until the Omo redating, the oldest known fossils of modern humans. The Herto skulls are promoted as filling a major gap in the human fossil record, an era at the dawn of modern humans when the facial features and brain cases we recognize today as human first appeared, precisely from the time when biologists using genes to chart human evolution predicted that a genetic “Eve” lived somewhere in Africa.

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<sup>173</sup>With apologies to King Louis.

<sup>174</sup>Boer is a name for Afrikaners and Soweto is a black township outside Johannesburg. Under apartheid, we also separated our subspecies, even after death, by burying them separately.

The Middle Awash team consists of more than 45 scientists from 14 different countries who specialize in geology, archaeology and paleontology. In this single study area, White's team has found fossils dating from the present to more than six million years ago, painting a clear picture of human evolution from ape-like ancestors to present-day humans.

*The human fossils from Herto are near the top of a well-calibrated succession of African fossils. This is clear fossil evidence that our species arose through evolution, precisely from the time when biologists using genes to chart human evolution predicted that a genetic Eve lived somewhere in Africa and gave rise to all modern humans.*

White stops one step short of implying that the Herto finds are a continuity of the early *pre-Australopithecans* finds. Pilgrim, keep in mind here that *Homo erectus* is not some salmon returning upstream to his home, after swimming around three continents for two million years, to encephalize and become us. The origin of *sapiens* is an event independent of the origins of the earlier species.

The Awash research team also unearths skull pieces and teeth from seven other hominid individuals, hippopotamus bones bearing cut marks from stone tools, and more than 600 stone tools, including hand axes. All are from the same sediments and, thus, the same era.

White's team members give a clue as to the "need" to place these finds at 160 000 BC. "This set of fossils is stupendous," says team member F. Clark Howell, UC Berkeley Professor Emeritus of Integrative Biology and co-director with White of UC Berkeley's Laboratory for Human Evolutionary Studies.

*This is a truly revolutionary scientific discovery. These well-dated and anatomically diagnostic Herto fossils are unmistakably non-Neanderthal. These fossils show that near-humans had evolved in Africa long before the European Neanderthals disappeared. They thereby demonstrate conclusively that there was never a Neanderthal stage in human evolution.*

Berhane Asfaw, White's Ethiopian running back, makes the hard yards.

*The evidence clearly shows what molecular anthropologists have been saying for a long time – that modern Homo sapiens evolved out of Africa. These fossilized skulls from Herto show that modern humans were living at around 160 000 years ago with full-fledged Homo sapiens features. The 'Out of Africa' hypothesis is now tested. We can conclusively say that Neanderthals had nothing to do with modern humans. They went extinct.*

The Herto fossils provide strong support for the hypothesis that modern humans evolved in Africa and subsequently spread into Eurasia. This hypothesis goes against the multiregionalist theory that modern humans arose in many areas of Europe, Asia and Africa from other hominids who had migrated out of Africa at a much earlier time.

If you have ever joined a political movement that starts with a fervor of idealism and grows, it picks up momentum and gets a life of its own. As the movement grows membership, ideology is sacrificed for pragmatism. The Buddha is killed at the side of the road. Somehow knocking the Neanderthals with the Out of Africa hypothesis morphs into the Out of Ethiopia hypothesis. Chris Stringer is the one sent outside with the carving to knife to take the fat bald kid for a walk in the bush.

In June 2002, Stringer produces “Out of Ethiopia” in *Nature* magazine and the deed is done. He comes back into the tent and they all quickly clean the knife.

Stringer describes the many African sites that have *sapiens* evidence between 250 000 years ago and 130 000 years ago as “incomplete” and lacking “chronological certainty”. Herto is a shining light, a new subspecies firmly dated as older than anything else. “The fact that the geological age of these fossils is close to some estimates obtained by genetic analyses for the origin of modern human variation only heightens their importance.”

The splitters call for a round of cold beers, and they play a techno remix of “Lucy in the Sky with Diamonds”.<sup>175</sup>

There is no evidence of anatomically modern behavior in Ethiopia until recently. I have got to word this carefully, because we are talking about some of the world’s most preeminent scientists here and because I don’t want to get struck off the Natural History Museum’s Christmas card list or get banned from the guest list for the Church of the Latter Day Saints’ open day luncheon.<sup>176</sup>

I am a scientist myself and scientists are not prophets, like Moses scribing God’s message in the Pentateuch, they are men like you and me, who need to promulgate their own theories in the short time that they have available before taking up an eternal career at Intelligent Design. You have to sift through the statements, even those from the highest authorities in paleoanthropology. Smith Woodward of Piltdown fame was Britain’s highest authority. To follow my logic you need to take a careful look at the press releases coming out of East Africa.

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<sup>175</sup>My little dig at Donald Johanson, White's predecessor, who called Afarensis “Lucy” after listening to the song by the Beatles.

<sup>176</sup>Stringer is head honcho at the National Museum and Brown is a Professor of Geoscience at Utah.

The main motivation for East Africans, to date, has been to discredit the idea of a *Neanderthal* beginning for modern man. This has required earlier and earlier discovery and dating of *sapiens* skulls in Africa. We know that DNA leads us back to 160 000 years ago, so when we find a *sapiens* skull we slap it straight there, giving no time for encephalisation. Such is the desire to stamp out the Neanderthals. However this is not a game we can win. Neanderthals have an ancient history that precedes encephalisation. By allowing the Europeans the soapbox of *heidelbergensis* and “*ancient sapiens*” we extend the *neanderthalensis* reign to an untenable number of 500 000 years plus. We cannot win the argument on age of fossils. To win Out of Africa 2, we need to take the battle elsewhere.

Fortunately genetics has now saved the day and thrown Neanderthals off the *sapiens* tree. We don't need the few African skulls that we do have to be that old. Anything over 50 000 years proves the point. It is clear cut and simple. Sixty thousand years ago we got on the bus and moved out for an away game. In their own backyard, with our supporters back home watching the game on cable in the wee hours of the morning, we shut out a European civilization that goes back over half a million years.

What we do need from our African skulls is to fit into a coherent story of African human origins. By placing *sapiens* skulls in East Africa in the 100 000 to 140 000 range we place them in MIS5, a warmer period when hunter gatherers would have been far happier on safari in East Africa. The problem with *sapiens* skulls at 196 000 years ago is that there is no accompanying civilization.

Brown has a reconciliatory finish: “I think it is fairly clear now that encephalisation, which begins much earlier to roughly modern size, precedes behavioral modernity by a good deal of time.” As yet no proponent of this school proposes any explanation of the process.

Brown's politeness is one that one does not often associate with the Boreal races, but nevertheless one that I find difficulty going along with.<sup>177</sup> The risk of slapping away Brown's hand of friendship is that so doing extends an invitation for the beast of creationism to enter the parlor.<sup>178</sup> Pilgrim, in accepting Out of Africa *carpensis*, we are acknowledging that the genetic and the ecological-killer evidence points to a blinding flash of change at a late start. *Sapiens* rises rapidly and unleashes himself on an unsuspecting world.

Similarly I do not wish to give hope to the multiregionalist Eurocentrics with their ancient man ideas. Next thing they will be using valuable research grants to buy ads in the Frankfurter Zeitung announcing the death of Out of Africa 2. The evidence points to 200 000 years ago, with Ground Zero in the Southern Cape.

Far from being unapproachable, both White and Brown are very friendly in their answers to my questions. Don't believe what you read about these guys. They are passionate about human origins and very open and approachable. Anyone that can tolerate me has to be. But they stick to their guns. Brown says more will be coming out on the Omo fossils and the dates will be reconfirmed. White says that any attempt by me to move the Herto dates is wishful thinking and merely part of an ill conceived, unprofessional, inaccurate, biased, politically-inspired rendering of human origins. I have to keep reminding myself that we are on the same side. I have nothing against the East Africans; I like them like a New Yorker likes Tom Brady. Just say I prefer the girls.

Without Neanderthals stealing all the research grants, we have time for a more rational approach that begins with a reevaluation of a southern beginning for the process of encephalisation.

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<sup>177</sup> Boreal is "Northern" as opposed to Austral which is "Southern"

<sup>178</sup> Legend has it that a Vampire cannot enter your house unless you invite him in. A kind of variation on "don't talk to strangers"

Dating techniques, while they have come a long way, are not like fingerprints. Carbon dating up to 40 000 years is deadly accurate, but figures after 100 000 years get a lot more stochastic. Dare I suggest that we use the television replay to take another look at that potassium argon dating data, this time without the pressure of the Neanderthals doing the Mexican wave.

I wish there was a smoother way out of this, but we cannot all be right. The only possibilities are: modern man did not come from the south; the start of encephalisation has to be put back another 50 000 years and we have to deal with the complete lack of any evidence of *sapiens* in the 200 000 BC plus period; somehow the Omo and Herto fossils, or more specifically their in situ position in the beds, are actually closer to 100 000 than 200 000 years old; one of my ex-girlfriends is now working at Intelligent Design and is really out to get me. As I am very kind to my ex-girlfriends, it is probably one of the former options.

Stringer is perhaps the best compromiser, when he says, “We will need further evidence from the whole continent to build up a complete picture of how our species began. Nevertheless the Herto fossils are landmark finds in unraveling our origins.” When he says this, he is playing to the Eurocentrics in the expensive front row seats and to the first world press. I don’t believe that there can be such a cozy compromising outcome. Stringer has not fully realized the full horror of *sapiens* coming out of the south. This is East Africa vs South Africa in the final game of the world series of paleoanthropology. Fortunately, this time we don’t have Louis Leakey playing head coach, being head referee and running the TV broadcast. Luckily we now have the benefit of the television replay.

I have to believe that in the enthusiasm of the announcements, my learned East African friends overlook that Ethiopia in MIS6 makes modern Ethiopia look like the apple orchard in springtime.

The timing of 160 000 to 200 000 years is slap in middle of the Riss Ice Age, possibly the worst time that anyone could possibly want to live in Ethiopia. Also it is just not true that the genetic markers point to East Africa 200 000 years ago. They point southwards. Omo and Herto would still be significant even if we place them at the other end of the estimate, namely 120 000 years, and still be the oldest known examples of ancient *sapiens*. Life is beautiful as it is; why do we have to put fairies at the bottom of the garden.<sup>179</sup>

Curtis Marean is more polite. He sees Herto and Omo as accurately dated branches of *sapiens* that later become extinct. This is a political answer that will bring up more questions than it answers. It would be great to have a feel-good solution that pleases everyone, but each paper that comes out on this topic raises the stakes to an all-in game.

Our genetic diversity is so narrow that it now appears that we are all descended from as few as 600 individuals living 150 000 years ago. They are very unlikely to have been scattered in multiple locations.

One of the first contests to play out after the lifting of the apartheid sports blockade was an Olympic match over 5000 meters between an Afrikaner athlete from Cape Town, Elana Meyer, and Ethiopia's Deratu Tulu. Tulu won that event and I trust you can remember our gracious sporting behavior in defeat. It is not necessary for us to have a rerun of that competition here. The data that we find in old African *sapiens* skulls is rare indeed. It should be used in a coherent unemotional manner. Ethiopia is an important crossing-point in modern human history, and the Awash is an important site for early hominids, but it simply does not stack up to the claim that Agulhas and Mossel Bay have on the modern Garden of Eden.

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<sup>179</sup>With apologies to Richard Dawkins.

MIS6 and MIS2-4 are very harsh places indeed for life. A serious school of thought says mammals die in this period not as a result of man's activities, but simply because they don't have the ability to adapt. The ability to adapt is what brings *Homo* through this. One has to consider that there are very few places in Africa in this period where *Homo erectus* can survive. The fossil record is not silent simply because it can't sing.

It can't sing because the chorus is hiding out in a very small section of the continent, now under the sea off Cape Agulhas.

There is an interglacial warming for 20 000 years between the Riss and Wurm ice ages. For most of MIS5, the period 130 000 years to 110 000 years ago, Africa is very similar to today. The hunter gatherers have a much wider field of movement than the Beachwalkers. They hunt game and they gather the precious vegetables that Africa has to offer. Besides a common ancestor, what I share with these Beachwalkers is that I too am a forager, a mushroom hunter. Like them, I learned this by word of mouth and by following the masters who had followed others before them. In the Cape the masters are usually German and Italians, who have brought this skill from Europe. It is a secret that is now being slowly revealed that the Cape has the some of the world's best mushrooms. What we seek is *Boletus edulis*, the king of the breakfast mushroom.

I know you all want me to tell you about magic mushrooms, so I will. These are *psylocybin*, found mostly in the Eastern Cape in the dung of cattle. I have got too old for them now, but in my younger days, they were an interesting diversion from life's main purposes, women, sport, music and science. What I have never had and simply don't have the courage to touch are *Amanita muscaria*. I would also recommend that you folks do not try this at home. Wherever you find *B. edulis* you are sure to find *Amanita*. One of them, *A phalloides*, is the death-cap mushroom.

*Amanita phalloides* tastes absolutely delicious, but two days later, it turns on you and destroys your liver. No known medical treatment can stop it. Once it poisons you, it is incurable. Only a liver transplant will stop *phalloides* giving you the most painful of deaths. *Amanita* are also used by the Dutch as Fly Agaric; a crushed bowl of them kills all the flies around the house. *Amanita muscaria* are the big red mushrooms with white spots that you see depicted in fairy stories. Picking mushrooms is like choosing women with HIV. The prettiest mushrooms are the most deadly. The round brown ones are the most juicy and delicious.

In the fungus-eat-fungus world of mushrooms, they are all fighting for precious space. The poisons are used by fungus to protect turf and beat off enemies. Fortunately the mushroom's enemies are sometimes also our enemies, so fungi have extensive medicinal benefits. As hunter gatherers the Beachwalkers learned about the use of mushrooms. They also learned about the hallucinogenic effects of *Amanita muscaria*. This becomes a ritual to them. The whole tribe gets together, pops a couple of caps and just as we still do today, go on a 12-hour party binge of dancing and painting. This is when all the rock painting gets done.

Gary Goldman of the Cape Mycology Club tells a great story of how San social hierarchies share their stash. *A. muscaria* are rare and so there is not a lot to go around. Urban legend has it that tribal leaders and elders get the first bite. Those further down the food chain wait patiently until the boss gets up from the party to take a leak; they collect his urine and share this amongst themselves, picking up the remnants of *Amanita* in the process. That way everyone gets to share in the party. In the morning they all wake up dehydrated with a pain in the liver. Broom might be right, we have stopped evolving.

Whatever they used for motivation, these early psychedelic van Goghs, the hunter gatherers, have a quality of art that has not been surpassed in the ancient world. The rest of Africa paints with a crude finger-painting style that palls in comparison with the southerners'. This high quality art is only found otherwise in a small pocket in northern Tanzania and suggests a link between the two groups. This quality of brush art does not appear again until it shows up in France, as much as 35 000 years later.

Of interest to us is a hypothesis put forward by Benjamin Smith of Wits. He points out that Pygmy art has a very distinct geometric shape. This art form appears in the modern Khoi, who are the people that meet Diaz on the beach. The implication is that in the later periods Pygmies have migrated south and mixed with the modern people of the Southern Cape. This is borne out by early genetic cross-codes, haploid markers. It is a long and dangerous walk for a woman from central Africa down to the southern shore. It is tough enough for a Dutch woman to come by boat from Holland; it is tougher overland.

This will be an interesting body of research to follow. We have yet to establish if the Southern Cape represents a continual human line from 200 000 years ago, or if there were periods when it became depopulated and had a second or third migration. Only research will give us this answer.

20<sup>th</sup> century African history focuses first on telling the colonial story. African prehistory is a fiction written largely by writers like Ryder Haggard who writes of lost white tribes in *She* and *King Solomon's Mines*. This distorted, white man's history, is replaced with a history that tells of the Bantu colonization. This is the empires of the Zimbabwe and the Mapangugwe ruins. Even modern anthropology tells us of the *Advance of the Bantu* and not of the *Retreat of the Khoisan*. Not much is known of the prehistory and movement of the Khoisan before the early iron age and neolithic farming.

It is ironic that man's earliest history will be the one written last. Much of this will be written in the next 50 years. Archaeologically, we are going to have to dig under the southward Bantu migrations of 2000 years ago and find the proof of the northward Khoisan movement 80 000 to 100 000 years ago.

From mtDNA, we are going to need the algorithms that split off the input of the colonists, namely the Europeans and the Bantu and, if Smith is right, even the Pygmy influence on the Khoi genes. Current mtDNA describes the Cape Coloreds as being of mixed African/European origin – duh.

To get answers on the forms of early Africans we need to analyze the genes of the colored people, by first “removing” the outside influences and focusing only on the African components.

There is much information that we still have to glean from the archeology and the genetics of the Southern Cape, and the movement of its people over the last 100 000 years. This is not *Australopithecus* and I am not Louis Leakey with 50 years of *National Geographic* funding to think about it. According to what we know now, using cigarette box logic, the children of Abel became the West Africans and it was the Beachwalkers' East African branch, the eastern Eden leavers, the ancestors of the Hadzabe, the children of Cain, that walked up the east coast of Africa, out of the gulf of Aden and caused all the mayhem.



## God Forgives Us

11<sup>th</sup> September 2001. Osama Bin Laden sends a group of his closest followers on a suicide mission to fly planes into the World Trade Center. This is the biggest attack on home ground in American history. It blows the bellows under an already simmering religious war and polarizes a world into two religious camps. A religious fanatic is returned to the White House for a second term and all over the world fundamentalists rise up in support of their side. The voice of reason and secularism is pushed to the side. By both sides, neutrality or indifference is construed as complicity.

*Homo sapiens* is forged through two ice ages, the Riss from 180 000 to 130 000 and the Wurm from 110 000 to 11 000. We have had two interglacial periods, MIS5 from 130 000 to 80 000 and the Holocene from 11 000 to the present. MIS3, 50 000 years ago, was misdiagnosed as a warm period.

It is now clear to us that *Australopithecus* was hunted rather than did the hunting. This is largely as a result of the findings at Sterkfontein, where we find vivid evidence of our ancestors being served up as leopard's lunch. *Homo erectus* is more equipped to avoid becoming a carnivore's victim; he is much faster and taller and more able on the ground, but he is nevertheless largely dependent on scavenging for food. His fellow hominid, *Australopithecus robustus*, is almost exclusively vegetarian. From 200 000 years ago *Homo sapiens* begins to develop communities that aid each other and work together in food collection. From 130 000 years ago *sapiens* starts to spread and to adopt active hunting practices. This is still in the little leagues and dangerous animals are avoided. From 60 000 years onwards all this starts to change.

Particularly in the New World, outside of Africa, *sapiens* finds that he is the smartest and meanest kid on the block. Once he gets the taste of organized hunting, nothing is safe.

It is hard for us to visualize humans as a small race bordering on the brink of extinction, but this is the reality of most of our prehistory. For 70 000 years we are trapped in the Riss Ice Age in a valley that, far from being the horn of plenty, is more of a refuge where we are able to scrape out an existence.

This is replaced at 130 000 by a hunter gatherer society, more organized than *Homo erectus*, but nevertheless still incapable of modern behavior. We are still victims of our environment rather than rulers of it. This subordinate lifestyle continues, but we start showing signs of modern behavior. In particular, we set about killing or crowding out any animals that have a mass of greater than 50 kgs.

In Africa as little as 30 000 years ago we are still living in the Middle Stone Age, MSA. After this our tools become progressively more advanced and we enter the Later Stone Age, LSA. However the Wurm Ice Age is still raging and our numbers are very small. We know this because there is little evidence of our existence. It is very hard for our archaeologists to find quality sites. A few thousand years from now whoever looks us up will have rich days uncovering the stories told in cities like Johannesburg.

Population genetics, looking at mtDNA diversity in *sapiens*, shows us major bottlenecks in the growth of our population numbers. Five billion people are the descendents of a group of as little as 1000 that leave Africa around 60 000 years ago. Recent studies are showing that we are possibly all descendants from no more than 600 individuals that lived around 140 000 years ago. It is strange to think that we could easily have disappeared from history with a tsunami or flu.

Jesus never shows much interest in Intelligent Design, preferring to keep to his father's pastimes like speechmaking, carpentry and fishing. When he walks into the office at Intelligent Design, mid-morning on the eighth day, and announces that he wants to go walk about with the Jews, it puts the Old Man into a total flap and he sends out memos and calls an emergency meeting of the *sapiens* management committee to see what can be done about the sorry state of the *sapiens* race.

No expense is spared and nothing is good enough for God's favorite. Decisions are made quickly. The ice age is stopped, iron smelting is introduced and logistics sends in cattle, agriculture and construction. Bouquets of burning bushes are fedexed off to the chosen race to announce the coming of the messiah. The whole thing is done in such a rush, to keep the Old Man happy, that someone forgets to put the firewall back up and the Romans sneak through at the last minute. *F@#k!*

The last glacial maximum, LGM, is 20 000 years ago and as usual after a cold period, things warm up very quickly. By 15 000 years ago things are cooking. Around 12 000 years ago there is a short, sharp cold relapse, known as the Younger Dryas. In the Middle East, communities condense and gather around the oases.

In previous cold snaps this would have led to extinction; by now *sapiens* is a more capable survivor. He turns to agriculture to supplement his diet and the Neolithic Age is born.

Population dynamics change considerably. In hunter gatherer societies, it is not convenient to have more than one child at a time, so children are spaced around four years apart and each female has very few children. The Neolithic Age brings stability, communities and specialization. Women can have children at a much faster rate. It also provides the opportunity for certain members of the tribe not to be

engaged in agriculture, but to organize instead. This is the start of the system of chiefs, kings, generals and wars.

World human population is estimated at one million at the LGM. Domestication of cattle provides a constant flow of food. Only a few of the many species out there make it as domestic animals, but with them and the enclosed conditions come diseases like smallpox and plague.

God's chosen species keep finding new technologies and we advance relentlessly:

19 000 BC:	1 million
8000 BC:	5 million
3000 BC:	14 million
1000 BC:	50 million
500 BC:	100 million
1000 AD:	300 million
1900 AD:	1.6 billion
1950 AD:	2.5 billion
2000 AD:	6.0 billion

The biggest change is the advent of agriculture and the Neolithic Age. Without the starting point of the Neolithic, we would not have spreadsheets and football today. It is still uncertain exactly where the Neolithic Age begins; it is largely accepted that it is in the Levant, but evidence from a number of other areas competes with this. In particular, evidence from the Nile River basin points to agriculture as long ago as 15 000 BC.

The Neolithic population is still small compared to the coming industrial revolution. There are a few stops and starts. In 1798 Thomas

Malthus predicts that we will catastrophically run out of food. Once females discover the higher rates of reproduction, they are voracious.

The Neolithic story has been told many times; it is to be found on six continents. Each of these stories is exciting and there is a world boom in our prehistory. I will focus here on Southern Africa and in particular the role of the Beachwalkers and their close cousins the San. For details of your own Neolithic ancestry, I suggest reading *Guns, Germs and Steel* by Jared Diamond or *After the Ice* by Steven Mithen.

In South Africa, we get our information on our post-LGM history from rock art, linguistic analysis and archeology and by observing the characteristics of the modern hunter gatherer tribes, particularly the San. There is a danger to this. The Khoi are also an old race, but in modern times we meet them in a far more modern context. They live in the cities of the Cape. It is difficult to see that a short while ago the ancestors of these urban dwellers were living more or less as they had for 150 000 years. The introduction of cattle is recent and the absorption of modern European culture is an evolutionary yesterday.

The retreat of the Wurm Ice Age brings a new warmth and wetness to many parts of Africa and the few tribesmen here start to thrive. The introduction of LSA tools, blades and sharp points gives the Beachwalkers a new ability to hunt the abundant game. It is not abundant for long, and like their brothers all over the world they soon dispatch the Cape horse and the giant sable to evolutionary history. About 5000 years ago there is an extinction of major land animals in the Cape. Environmental factors are put forward, but the explanation of man-made killing is more likely. These animals have lived through hundreds of thousands of years of varying environments and still survived, yet something dramatic happens 5000 years ago. This is why you will find me unsympathetic to the claims of the so-called modern hunter gatherers, who would have us roll back the last 400 years of history and allow them to continue in their hunter gatherer ways,

killing off the last of Africa's game. I am as sympathetic to them as I am to Japanese whaling research.

The evidence of man in the last 15 000 years is prolific; from Drotzky's Cave in Botswana to Rose Cottage in the Free State, the hunter gatherers move everywhere. From 11 000 years ago they thrive in Southern Africa. As a trained economist I take a great deal of interests in the anthropologists' description of the San people's "gift-giving". It seems that in times of hardship gifts are given from one group to another as exchanges of goods and help. Evidence of this is still scant, but there are sure signs of the division of labor, where for the first time women are relieved of hunting and concentrate on child rearing. We haven't dug up any Stone Age ATMs or even remnants of old ledgers, but the use of beads tends to suggest a form of currency. Even if there is no currency, there is evidence that groups of reasonable size and proximity would interact and help each other. They would share migratory wells and caves. This cooperative behavior is never found in the dog-eat-dog world of the Pleistocene or any earlier ages. Cooperation among groups is the first sign of human civilization.

Looking at the modern-day picture of the world, you have to be amazed at the reversal of fortune of the hairless ape. In a short period of 20 000 years, we have changed the face of the earth. Certainly nothing like this has happened in two billion years of the history of life. When we talk about the Cambrian explosion 565 mya, the Eocene adaptive radiation 55 mya, or the rampant speciation of fynbos three mya, we are still talking about events that happened over a period of millions of years. This explosion of *Homo* is over a period of 20 000 years. It is hard to imagine a world without telecommunications, air-travel, skyscrapers, refrigeration, software, and God-given destiny.

What caused this change in the monkey's fortune? I would argue that the groundwork is laid down for the modern world in the culture developed in the Garden of Eden.

Before Eden we are hunter gatherers. There is still an argument that we had begun encephalization before *erectus* walked into Mossel Bay. Either way it is splitter politics. Whether man walked into Eden with or without a big brain, the outcome is the same. It was here that he was able to settle into crude communities and the specialization of labor began.

For a creationist, Out of Africa *carpensis* represents an entry point of sanity. Creationists will have us believe that our formation was sparked by the external management of a higher power intervening with miracles.

This makes us special, different from animals, different from apes. You can have all these old world apes leading up to a certain point and then God comes in and makes Adam from the beach sand at Mossel Bay. The rest of it makes sense from there. He expands out into the Levant, breeds the Jews and offers up the legends of Abraham, David and Jesus.

For creationists this is a whole lot easier than taking the position that *sapiens* is nothing more than a variation of *erectus* and that there is no proof of a link between early *Homo* and *Australopithecus*. Pilgrim, if it is a blinding flash of light that you are looking for, then *carpensis* is it. Why would God create man as *erectus*, a 700 cc idiot, and have him walking about in a cloud of stupidity for two million years before delivering him from evil and offering him a 1400 cc brain with which to worship him? If you are looking for the "break" between man and ape, 200 000 years ago is as good a place as any to pause for reflection and offer up an animal sacrifice.

Scientific realists, like myself, have many advantages over theologically-schooled believers; the big difference is in the very

nature of “belief”. Scientific belief is not hard cast like faith or respect. We do not take a position and remain there until they pull the nails from our fingers or twist our phalanges in a thumbscrew.

Like Henry Higgins, we are not the type of men that would “take a position and staunchly never budge”.<sup>180</sup> A scientific hypothesis is something we take as a means to making sense of the complex world around us. A creationist who would say, “This is too complex to fathom, it must have been put together by a power more intelligent than ourselves, that is why we can’t understand it.”

When I say that man arose 200 000 years ago off the coast of Agulhas and went onto conquer the world, this is a hypothesis, the Out of Africa *carpensis* hypothesis. It is not a sacrament. You can scream obscenities, denigrate his legacy, jump up and down and burn a graven image of *Homo erectus* - it is not offensive. Further, bring forward evidence of an alternative and if your case is strong and compelling we will change instantly.

Discussing theology with learned fundamentalists is like *sapiens* hunting mammoths. You can bring them down in the end, but you can’t do it on your own. You will need the help of the Old Man. I meet fundamentalists in family discussions and the staunch ones always have an argument along very closed lines. Jews simply don’t get into the discussion. God is a personal relationship for them, a private matter between Jews and God, and you are not really invited in to discuss it. It’s a chosen race thing. As for all the gods of other religions, for the Jews there is no problem; you can choose to believe or not believe in them at your own discretion. Outside of their own personal matters, Jews are committed to truth.

Christians will also not engage rationally. They pride themselves on their faith and would rather lean on that than trouble about reality. Muslims regard any discussion about God or Islam as *kadith*. The

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<sup>180</sup> My Fair Lady, the movie version of Bernard Shaw's work, *Pygmalion*.

Koran is the Word of God given directly through the Prophet and to even question it is to lower oneself to the level of the infidel.

This does not leave a lot of room for logical argument, scientific deduction or progressive proof. To win an argument with a fundamentalist, you simply have to get the Old Man involved. Only one event turns the mind of a fundamentalist. They have what alcoholics call a moment of clarity, what Moses would call a burning bush or St Paul would call a road-to-Damascus experience. Somewhere, privately inside their 1400 cc organ, a synapse connects, a bright light switches on and the argument of evolution starts to race around their heads. A memo is passed at Intelligent Design, they are cut loose and become free to think. Without this divine intervention, no amount of argument or pressure will do anything to budge faith.

Here is a hypothesis – 48% of Americans believe that man was created more or less in his current form less than 10 000 years ago. This is deduced through sampling with market research. This research is probably funded by a Christian foundation, and the data is probably massaged, with the question being loaded upfront, and the hypothesis is contrived. However you would only have to test this on a few of your colleagues at the office to realize that it is not far from being accurate. Therefore I am happy to *believe* this hypothesis and stay there until some other information is presented that will change my mind. Accepting this hypothesis helps me to deal with the reality that of the remaining 50% – we can drop the 2% for ease of use – will have a fragmented view of human origins, with the minority accepting Out of Africa *carpensis*. So the scientists' position can actually be included in there with other minority positions such as the alien abductors, the reincarnationists and the aquatic-apists.

How did we get to this position where half of Americans believe in fairies, with the stats being worse in other parts of the world such as South Africa?

If you have followed the events in this book, then you will have seen that the truth of the day, the Zeitgeist,<sup>181</sup> is not necessarily the one argued out the most logically, but rather the one shouted out the loudest. Daune Gish is the poster boy of the creationist movement. He is what the religious right love, a scientist, a biochemist in fact, turned against the scientific establishment, because he has now had cause to see the light. Gish is head of the Institute for Creation Research, ICR, located in San Diego, California, which is a leading center for the promotion of creation science. Over 20 years it publishes hundreds of creationist books, tapes, and teaching aids. It is the group responsible for the creationist bills introduced and passed in state legislatures.

Normally I would simply dismiss Gish as a clown. He will get none of the acerbic comments one reserves, out of respect, for splitters and multiregionalists. Creationism plays to the same emotions as the 19<sup>th</sup> century British prigs. There is an audience out there, desperate to feel important, so desperate that they will happily avoid the deduction of truth.

What really pisses us off about Gish is that the muggles love him.<sup>182</sup> The truth of the matter is that most normal people, including scientists from other disciplines, find the terminology of paleoanthropology confusing and are simply too embarrassed to admit that they can't follow the argument. Gish is an accomplished debater and public speaker, who has polished his act to perfection. He is on a roll with the ICR. He collects funds from generous old ladies concerned that they are about to meet their maker and he gives them a show that places them right in the middle of God's holy will. The best of it all is that with a fundamentalist administration in power, ICR is regarded as a non-profit company and has very lax tax reporting

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<sup>181</sup>Zeitgeist is the German word meaning spirit of the times.

<sup>182</sup>With apologies to J.K. Rowling. Muggles are the people in *Harry Potter* who do not know about magic; in this context they are those who do not understand science or theology.

requirements. Few people grasp just what really big business American religion is.

Here is the inconvenient truth. Even scientists from outside a discipline rarely understand the technicalities of a given internal argument. I have been reading books on paleoanthropology for 30 years and I would still be unable to pick out a hominid tooth or a haploid marker or compare isotopes in an ice core?

Even scientists rely more on the joint testimony and conclusions of a group than on the evidence itself. We have confidence in the peer review process. We are all standing, most of us are squatting, on the shoulders of giants. Given the history of the academic discipline and the clear evidence of self-interest, it is hard to see why we have such confidence in paleoanthropology.

Our argument against Gish is that he masquerades as a scientist, pretends to take on our methodology, and when shown to be incorrect merely forges ahead with his own ideology, repeating the same errors and ignoring the arguments. To the muggles he is just a well-meaning guy offering them a scientific explanation of human origins wrapped with a good dose of eternal salvation. Evolution comes along with a whole lot of ifs and buts and a list of references as threatening as it is confusing. To top it all, we offer the listener a meaningless life in a godless world destined to be “short and brutish”.

It is a fundamental tenant of the scientific method that the search for truth is more important than defending our own parochial position. Gish’s arguments are eloquent and compelling.

Dr Gish, we don’t reserve these attacks for you, we also speak about each other in this manner. From there stems the real strength of Gish’s arguments. The field of human origins is plagued by scientists following their own self-interest.

Gish and the creationists are no more guilty than the bone collectors who withhold fossils from public view for fear that it might provide a chance for someone else to advance or give ammunition to some opposing scientist with an alternative view.

*Our only intent is to make available from the fossil record, the laws of probability, the laws of thermodynamics, the evidence of purpose and design in biology, and evidence from other areas of science that provide evidence that strongly support the creation of living organisms by an intelligent agent external to and independent of the natural universe. In other words, we contrast the evidence expected on the basis of a theistic, supernatural special creation to a mechanistic, naturalistic, non-theistic evolutionary origin. We insist that this should be done without reference to the Bible, the Humanist Manifesto, or any other religious literature of any kind.*

*Creation scientists nevertheless are shocked by the vicious unprincipled attack against our integrity and science. If evolutionists really do have a solid scientific case for evolution and can destroy the arguments of creation scientists based on this scientific evidence why don't they just state the facts and let the facts speak for themselves? Why must they resort to obviously questionable and untrue charges concerning the personal character of creation scientists if they believe their case is so secure?*

Yet for all his eloquence I do not believe that Dr Gish is a true scientist or that he is genuinely interested in the truth, or that he would publicly acknowledge his errors should they come to light, or that logic could persuade him to change his mind.

Creationism is not a scientific hypothesis. It is a misguided attempt to support the literal interpretation of the Bible. It cannot be modified to fit new evidence; it can only be reworked with the intention of propping up a position that was established thousands of years ago.

Gish is a theologian and like Bishop Gray of Cape Town, 150 years before him, he knows that once you acknowledge evolution the stability of faith crumbles and the pack of cards that is scientific theology collapses. If there is no Garden of Eden, then there is no Adam and Eve and there is no original sin; if there is no original sin what was Jesus doing on the Cross? Did he go through all that pain knowing that it was all for nothing? It is all bound up as one.

I said at the start of this book that we do not need to debate the merits of evolution; that is a book on its own, one not essential to the story of human origins. However, the incompleteness of evolutionary theory is key to the creationist argument. But after getting the public to reject the theory of evolution, they are then forced to look for the only alternative – *Genesis*.

There are a number of forms of creationism. They range from flat earthers, geocentrists, young earth creationists, and old earth creationists to gap creationism, day-age creationism, progressive creationism, and intelligent design creationism. Then it starts to fall apart. The apologists enter the fray and you get evolutionary creationists and theistic evolutionists. The forms and arguments that creationists have between themselves is enough to fill a book on theology. It is similar to the paleoanthropology debates, but without the benefit of structured evidence.

Much as I don't agree with Gish and the creationists and feel acutely embarrassed for them defending the undefendable, you have to admire their ingenuity. Anything less than literal belief in *Genesis* soon leads to positions that are even less defensible.

Holding on to the full literal text is fundamental and anything less becomes even more embarrassing as you peel off the layers. It reminds me of myself talking about splitters – here is Gish arguing against theistic evolution.

*Genesis 1:1 states, 'In the beginning, God created the heaven and the earth.' God put that great truth in the very first verse of the Bible.*

*He wanted us to know, right from verse 1 of the Bible, that He had created. The theistic evolutionist brushes aside these objections by asserting that the early chapters of Genesis cannot be taken literally. This is an arbitrary, ad hoc assumption, contrary to the plain reading of these Scriptures, and taken only so that the theory of evolution may be made acceptable. The language in Genesis, however, is that used to set forth simple historical truths. It is neither allegorical nor poetical. The theistic evolutionist, biblically, has placed himself in an untenable position. How does one decide which portions of the Bible should be taken literally and which should be brushed aside as devoid of historical and scientific significance? The Virgin birth of Jesus Christ, the raising of Lazarus from the dead, the changing of water into wine, all were miraculous events. None can be explained biologically. All involved instantaneous acts of divine creation.*

Pilgrim, you made this bed, now you lie in it. From where I sit as a scientific realist, an atheist to you, I simply have no idea how you sleep at night. It seems a whole lot easier to me to live in a godless meaningless world than to have to deal with this paradox. Your only defense against logic and reality is faith and miracles. I guess a good old bit of 1400-cc-brain-restricted thinking helps you to get by.

If you can't follow the arguments either way then you are right, do what Pascal did, go for salvation!<sup>183</sup>

Gish states, "The teaching of evolution to young people convinces many of them that they are hardly more than a mechanistic product of a mindless universe, that there is no one to whom they are responsible, that they are only responsible to themselves." In this he is correct. The rationale behind this book is that in finding out who we really are, we will be able to act out our future with integrity.

Abrahamists should start with this, by the great Muslim philosopher al-Kindi who writes around 850 AD, "No one is diminished by the truth, rather does the truth ennoble us all." In our modern age Westerners easily dismiss Islam as a source of innovation. While the Catholic Church led us into darkness for 1000 years it was only Islam that held aloft the virtue of science. Al-Kindi's position was, "We must not hesitate to recognize the truth and to accept it no matter what is its origin, no matter if it comes to us from the ancients or from foreign people." Sadly, later actions by the guardians of Islam, also under fire from a world of scientific revelations revealing a world in contradiction to the holy teachings, don't show the same embracing openness.

Can we have a God that is not made in a creationist image? Traditionally religion addressed deep questions of the day, like: Where did we come from? and, What are our moral obligations? These were laid out in the Old Testament, the Torah and the Koran. As the borders of scientific knowledge have been pushed back, the conflict has become apparent to anyone with a rational approach. There are many proponents, including practising scientists, who still want to hold onto a relationship with the Old Man. This is the argument of the duality of religion and science, namely that the two exist in independent spheres.

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<sup>183</sup>Pascal's famous wager says it is better to be wrong about believing in God than face eternal damnation.

Physics Nobel Laureate, William D. Phillips gets it down to business,

*A scientist can believe in God because such belief is not a scientific matter. Scientific statements must be “falsifiable.” That is, there must be some outcome that at least in principle could show that the statement is false. By contrast, religious statements are not necessarily falsifiable. I might say, “God loves us and wants us to love one another.” I cannot think of anything that could prove that statement false. Some might argue that if I were more explicit about what I mean by God and the other concepts in my statement, it would become falsifiable. But such an argument misses the point. It is an attempt to turn a religious statement into a scientific one. There is no requirement that every statement be a scientific statement. Nor are non-scientific statements worthless or irrational simply because they are not scientific.*

Pilgrim, if taking two of these every night helps you to sleep and there are no apparent side effects, then I guess keep taking them. To relegate 2000 years of Abrahamist history to the scrap heap of spiritual aesthetics like astrology, palmistry or numerology seems a little disrespectful to those that have died cleansing our sins. For me it's a simple choice, recognize Abrahamism for what it is, part of our culture like hunter gathering, tool making, the dominant seventh scale, but recognize that it has been sidelined. Inuits have a tribal tradition. Their elderly go blind early in middle age, because of the white light reflected off the northern snow. They become a burden on the group. It is the duty of the eldest son to relieve the tribe of the burden of the old man when he can no longer fend for himself.<sup>184</sup>

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<sup>184</sup> My father would keep me awake at night telling me this bedtime story about old Eskimos getting pushed into open ice holes. I have never checked its validity.

We don't feel religious conviction or grave loss because Neanderthals got taken for a walk in the snow. Are atheists simply ungrateful for life? Should we not simply be happy to live in a creationist world that has thrown up the Appassionata and the run and shoot offense.<sup>185</sup> Why not just leave the creationists to believe what they want. So what if creationists believe that we came from fairies? Is it *that bad*?

There are two reasons not to go with creationism. Firstly, there is an inborn desire to seek the truth, the reality that is not made up by us, but is a fair reflection of what is out there. Anything less deliberately cripples us mentally, intellectually, and emotionally. The hoops and self-denial that one has to go through to believe in the creationist reality and simultaneously in the scientific reality requires a pathologically split personality.

Secondly, the creationist message *is* "that bad". You have seen through this book how evil men will manipulate truth to suit their purposes. It becomes a lot worse when you allow them to manipulate fantasy for their own purposes. Take part in any domestic argument, business dispute or court action and you cannot help to be amazed at how two parties can see the same transaction differently. When divine right is added, even the simplest disputes become irreconcilable.

Creationism leads to a chosen species, which leads to a chosen race, which leads to God-given rights, which leads to entitlement, and we are very quickly back to racial eugenics and Catholic oppression. It is easy for men to justify the most terrible actions in the name of religious zealotry. Atheists and evolutionists may have been involved in wars, but you have never heard us start a war over a scientific argument.

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<sup>185</sup>The Appassionata is a Beethoven sonata and the run and shoot offense is a beautiful style of football that uses a single running back and favors a passing team.

In the scientific process we don't smite our enemies with stones and hatred, because they hold a different view on human morphology. You certainly won't see me drive an airplane into the National Museum or send my marines into Berkley, no matter how much I disagree with Chris Stringer or Tim White. We even conference and have lunch with splitters. No hot-blooded scientist with a lump in his pants is going to turn down the advances of some female splitter paleoanthropologist based on religious differences, no matter how far she likes to split – now that's tolerance.

## The Prodigal Sons Return

6<sup>th</sup> April 1652. The Dutch, led by a company accountant, Jan van Riebeeck, arrive in the Cape and multiply into the Afrikaner nation. Like Jesus, it is a virgin birth. Jesus has only a mother. The Afrikaners have only a father. The Dutch bring very few women with them, but miraculously they produce a white race in Africa that is pure and traces its roots back into the merchant cities of Holland. The mixed-race kids that keep popping up on the streets are the products of local Khoi women and “passing sailors”. Well, that’s how they taught it to us in apartheid schools!

Nelson Mandela calls the Afrikaners a humble and gracious people misled by their leaders. The most famous South African of all time is himself a Xhosa. And the Xhosas and Afrikaners are going to dominate any discussion of the colonial history of the Beachwalkers, so I am going to have to explain to you who they are and how they fit into the Beachwalkers. This is a short lesson in the black and white of being colored.

The people that Diaz meets on the beach at Mossel Bay, are the descendants, as are you and I, of the original first humans. Whether they have been there all the time or migrated away and come back matters not much. If they did migrate away, it could not have been far, for they share with the San and the Hadzabe the oldest divergence in mtDNA .

It is a romantic idea. I would like to think that the Beachwalkers have been in the Garden of Eden all the time and that the Cape Coloreds are their direct geographical descendants. If the Beachwalkers had stayed there and not moved inland, things might have turned out much better. God could have sent his only begotten son to teach us fishing in Mossel Bay, we would have given him a much better deal than he got from the Romans and the mammoths, not the Jews, would still own America.

Envy is one of the seven deadly sins and someone at Intelligent Design has other ideas. They bundle Judas into the download and Jesus gets an unpleasant ride that he did not expect.

I will call these the modern descendants of the Beachwalkers the Khoi<sup>186</sup> and shortly thereafter I will refer to them as they refer to themselves today, the Cape Coloreds.<sup>187</sup> Don't confuse these with the Coloreds that you see on American TV sitcoms. The Fresh Prince of Belair is a mixture of West African and European immigrants and he is genetically about as far away from the Cape Coloreds as Settler me, or Chinese Tiger Woods. Five billion of us are the European children of the seven daughters of Eve.<sup>188</sup>

Similarly, don't confuse the Cape Coloreds with the colored communities that have sprung up in the Eastern Cape, Natal and Transvaal as the result of my ancestors taking a more than academic interest in Zulu and Xhosa anatomy. Cape Coloreds are the cross-bred descendants of Dutch immigrants and the original Khoi people. They are not a mixture of European and Bantu immigrants.

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186 Same pronunciation as the Japanese carp fish.

187 As most of these people speak Afrikaans they actually refer to themselves as Die Kleurlinge

188 Not quite. *The Seven Daughters of Eve* by Bryan Sykes plots the development of the small Out of Africa group into the group that populates the world, but concentrates on Europe; it is a bit more complicated than that.

As a conscript in P.W. Botha's racially picked army, fighting "the total onslaught against South Africa", bungalow talk would often turn to the women of South Africa. Afrikaners assure me that the only difference between black and white women is the first inch. Those of you who are recent black white mixes may get really great tans but unfortunately, as you will get from the core of this book, for finding your place on the phylogenetic human tree, skin color means little. Even in Africa, the Transvaal Coloreds, along with us Eastern Province Settlers and the Natal Zulus, are going to have to come to terms with the fact that we are really all recent foreign migrants to South Africa. Jo'burg is the African melting pot and each generation brings us closer. If you do make the trip to Sterkfontein to see *Australopithecus*, stop by in Jo'burg and take time out for a shopping visit to Sandton. The women are beautiful.

Modern anthropology carries an obsequious tone of apology to the remnants of ancient races who have avoided modernization. It is a religious ancestor worship ritual that implies that modern communities owe a debt to those that still live this way of life. This stems from our awe over their apparent primitiveness and their ability to avoid modernism. It is the modern equivalent of Rousseau's "noble savage". So we are not allowed to call a San a San, out of respect; we are asked to use some unpronounceable word with a click in it like !Xun.

We are not encouraged to refer to native Americans as Indians, we must refer to them as Native Americans. They are respectfully depicted in Hollywood movies as having a bonding with the "spirits of nature". It is an unwritten rule to simply ignore their modern Asian origin. Forgive me if I don't fall into this ritual. What is missing from these ancient races is not the will to go out and murder, but simply the technology.

These ancient races, of which we are all guilty members, stand accused of having just perpetrated one of the worst atrocities of mass killings in evolutionary history. If this were Nuremberg, we would be stringing them up with piano wire.

I stand before the court, my own hands covered in blood. I say this as a member of the English colonial Settler tribe. When the English colonists get to America and New Zealand, they find local tribes in apparent harmony with nature. The evidence of the slaughter only comes out later. The Clovis people – out of sensitivity to their feelings we won't call them Red Indians – devastated North American wildlife.

The Maoris ate every one of New Zealand's giant flightless birds. The stories go on. None of us is exempt, but my tribe carries the distinction of pulling off the only true fully implemented genocide since the Neanderthals. We killed each and every one of the naturalized Tasmanians and took out the Tasmanian devil, a top-of-the-food-chain marsupial predator, while we were at it. Not all the perfumes of Arabia will ever cleanse us.

If there are any San reading this book that do take offense at my nomenclature, then you have either got hold of an unauthorized Afrikaans translation, or probably don't rank yourself in the class of primitive ancient people anyway. While I admire people that can lead a life of avoiding *The Man* and all those annoyances, like tax returns and prepaid electricity, that come with the territory of western asset accumulation, at the end of it, mate, we are all in this together and an 80 000 year mtDNA differential compared with a 140 000 year one is really no big deal. Most of the San I have met are professional rugby players, computer programmers, tour guides in Kimberley or accountants.

I have not met any "pure" San in my life; sadly, I doubt if any exist. The San I have met speak Afrikaans. I am told by Afrikaners that all San speak Afrikaans. I was also told by an Afrikaner that the

San prefer being called Bushmen and that San is a word that anthropologists invented.

Benny Alexander, whom I met in the Pan Africanist Congress, changed his name to Khoisan X. So that is my anecdotal motivation enough for using Khoi and San for referring to these southern people. The genetic reality is that they are nearly identical to modern coloreds, Afrikaners, Tswana and Xhosas.

The Khoi come through Botswana and settle along the Vaal river about 2000 years ago. In 200 AD a tribal difference causes a scattering. The Korans stay in central South Africa. Those with goats move westwards and became the Nama and later mix with incoming Bantu to form the Hereros in Namibia. Another group with cattle come straight down to the southern valley and mix with the local Beachwalkers. The return of the first prodigal son is hidden in the mists of African prehistory. The echoes of Pygmy and Ethiopian genes are there to remind us of this pan African origin.

The sites of Khoi inhabitation between the time of Christ and the arrival of the Europeans are numerous. The significant ones are Bambata in the Transvaal, Geduld and Falls Rock in Namibia, and Kasteelberg, Boomplaas, De Kelders, and Nelson Bay Cave in the Cape. This period of Khoi history is still an interesting point of research. The prevailing thought is that they are not people that have migrated from central Africa, but rather people that were living in Southern Africa, but were quick to pick up on trading cattle and goats with the Bantu who arrived in the Zambia and Zimbabwe areas at the time of Christ. It is even been suggested that the differences between the Khoi and the San were nothing more than who had livestock and who did not.

It is always with a nod of arrogance that we point out to Africans that until the Europeans got here, there was no written history. Africa's history is reduced to a verbal hand-me-down.

It is ironic that our own arrogance has led to the same set of circumstances. Our early accounts of Africa are so poisoned by the eye of the beholders that they provide us with little objective view of what happened as little as three centuries ago. Racist and Eurocentric thinking provides a jaundiced view of the colonial Hottentots.<sup>189</sup> In an early history of the Cape, Kolben describes the Hottentots as “in many respects, the filthiest people in the world”. Kolben describes customs of the Hottentots as “unfit for publication”.

What he does describe is isolation of old people to die of hunger and exposure and the burying alive of unwanted children. This is in complete contrast to earlier descriptions of the Hottentots as “the most friendly, the most liberal, the most benevolent to one another that ever appeared on Earth”.<sup>190</sup>

After a short stay with the Khoi in the 16<sup>th</sup> century, Bartholomew Diaz packs up and goes back to Portugal. A few years later Vasco da Gama rounds the Cape and lands in Mozambique. He becomes the first person to sale the trade route to India. The Portuguese are basically in the import export business and at the time slaves are the biggest export that Africa has. The Portuguese land again in the Southern Cape and suggest that the Khoi trade some of their children to be taken off to Portuguese colonies for a lifetime of hard labor and forced child prostitution. The Khoi take offense to these offers and in 1500 the Viceroy of Portuguese India, Francisco d’ Almeida, is killed in a skirmish with Khoikhoi at the mouth of the Salt River in Table Bay on his way back to Portugal. To their credit the tribes of Southern Africa take little part in the slave trade. The Portuguese move their dirty business elsewhere.

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189 Hottentots is the colonial name for the Khoisan, after their click language, which has all but disappeared. Only the slurry “brey” is left in the speech of Cape Afrikaners.

190 This account from *After the Ice* by Steven Mithen.

Europeans avoid South Africa until 1652, when the Dutch land to set up a trading station at the Cape. The Khoi make the grave error of not impaling the Dutch on stakes right there and then leaving the rotting corpses on the beach as a warning to anyone else that may try to land. Instead they accept gifts of peace and trade. These gifts ultimately prove just as costly as the \$24 accepted by the Indians from the Dutch for Manhattan Island in 1626.

Autshumato or Harry the Strandloper is one of the earliest persons recorded in Khoikhoi history by the Europeans. He is taken by the British to Batavia and learns English and Dutch. He becomes the official interpreter used by the Dutch. He moves to Robben Island, with his clan, part of the Goringhaiquas. He becomes the local agent and postmaster for passing ships. Mundy's account of a visit to the island in 1634 reveals that Autshumato was dressed in "English habit from head to foote". In 1658 Autshumato is banished to Robben Island, becoming one of its first prisoners. Nelson Mandela is one of its last. Autshumato also becomes the first prisoner to escape from this imprisonment. One year later he applies for and receives permission to again live and work near the Dutch settlement, resuming his role as an interpreter. He dies in 1663.

Sailing is a tough business. If you are used to the cycle of love, out there the motion of the ocean and the brightness of the stars will soon get your mind thinking of home. All sailors will tell you the same story. Just as you smell the sea first thing as you get out of the plane at Cape Town Airport, out on a boat you smell the stench of land long before you actually see it. It starts to boil inside you, and by the time you hit port, your body is raging with shore fever.

Sail, even for a few weeks, and you will know how lonely it is out there away from women. It is a silent curse for sailors, not talked about on the high seas, where gossip and rumors can cost lives.

This state of mind, not the fresh vegetables, is the reason the Cape grows in stature as a halfway refreshment station.

Finding a woman who loves sailing is like finding a woman who loves beer. It is not that they don't exist, they are just in very short supply. The majority of them prefer to stay at home. Epidemiologist Dr Sander Hunter of the University of Louisiana was one such woman.<sup>191</sup> Out in the bush, in the middle of a domestic argument, she asks me to "drop her off". I tell her that no matter how difficult she finds the situation, it is just not practical to "drop off" an American woman in rural Africa. OK says she, drop her off at the Yacht Club. It is her opinion that any woman, anywhere in the world, is always welcome at the Yacht Club. She is right of course.

Sixteenth century trans-Atlantic sailing carries a nasty bite with it. Mortality is high. This was before the Poms invented a means of carrying immune-system-boosting vitamin C on the ships and pick up the name "Limies". Of the sailors that leave the shores of Europe for Africa, 50% never return. Now that is even worse odds than a First Lieutenant in France in 1915. The Dutch intend to set up a halfway station to refresh sailors. They bring seeds and cattle stock, but they do not bring women. This bottleneck means that after less than 14 generations most members of the Afrikaner nation naively traces their lineage to one of only thirteen European woman.

When they first meet the Khoi, the Dutch are repulsed by their appearance; mostly it is the ochre and entrails. The Khoi have the habit of covering their skin with rancid animal fat. As the months wear on, some of the women start to look not too bad. Some enterprising midshipman hits on the idea of giving them a bath and getting them to leave the carrion-smelling animal fat off the make-up list. The result changes a nation and invents what we now know as Langarm.<sup>192</sup>

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<sup>191</sup> An epidemiologist is someone who studies diseases on populations as opposed to individuals. This science is closely related to genetics and statistics.

<sup>192</sup> Longarm dancing. The Afrikaner version of the tango. Easy to learn, women love

Soon Khoi women are rocking up at the Yacht Club for sundowners and to learn the dancing and having such a good time that they only leave the next morning.

There is a legend among all 17<sup>th</sup> century southern sailors in ports all around the region that the Khoi women have exceptionally long labia majora. It is said that in former times Khoi deliberately exposed the labia to the view of men in the course of erotic dances. What appear to be enormously elongated labia are represented in many examples of Bushman rock art. Although the artists were experts at the naturalistic representation of animals, and also produced tolerable likenesses of Negroes and Europeans, their representations of members of their own, both male and female, are highly stylized and fanciful. The earliest records on this subject are rather vague. There seems to have been some reticence at the start in referring to the matter in print. Dapper, writing on Hottentot women in Dutch in 1668, remarked mildly that “the lining of the body appears to be loose, so that in certain places part of it dangles out”.

Captain James Cook, then Lieutenant, later famous for discovering much of Australasia, calls at Cape Town in 1771 on the homeward voyage of his first circumnavigation of the world. Ever the curious scientist, he takes the opportunity to investigate what he calls “the great question among natural historians, whether the women of this country have or have not that fleshy flap or apron which has been called the Sinus pudoris”.

This branch of scientific endeavor leads us to the sad tale of Saartjie Baartman. In the 19<sup>th</sup> century investigation of the subject has by no means stood still, for San have begun to appear in Europe, and to allow themselves to be examined by anatomists. In 1804 there is a great shortage of food among the Bushmen living in the northern part of Cape Colony, and one of them, who happens to be personally

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acquainted with the Governor, asks him to take care of a young girl, Saartje Baartman, who then lives in Cape Town for many years.

She attracts the attention of a visiting English ship's surgeon, William Dunlop. What makes her a curiosity in the doctor's eyes are her extraordinary *steatopygia* – enlarged buttocks – and her unusually elongated labia.<sup>193</sup>

She agrees to go with Dunlop to England to become rich and famous as a subject of medical and anthropological research. She is 21 when she leaves Cape Town for London. At first, she is indeed put under anatomical scrutiny by scientists, who named her genital condition the “Hottentot apron”. The only success she achieves is as an exhibit before the general public.

Contemporary descriptions of her shows in London say Baartman is made to parade naked along a “stage two feet high, along which she is led by her keeper and exhibited like a wild beast, being obliged to walk, stand or sit as he orders”. People pay one shilling to gawk at her, where she is depicted as a wild animal in a cage, dancing for her keeper. For several years, working-class Londoners crowd in to shout vulgarities at the protruding buttocks and large vulva.

In 1814, after spending four years being paraded around the streets of London, Baartman is taken to Paris and is heartlessly abandoned to a showman of animals and exhibited under the misleading description of “La Vénus hottentote”. Her body is analyzed by scientists, including Georges Cuvier. Pseudo-scientific articles are written about her, testimony at the time to the superiority of the European races.

Baartman works as a prostitute in Paris and drinks heavily. She dies a lonely alcoholic in 1816, probably of pneumonia. She still suffers further indignity.

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<sup>193</sup>Much of the description of this event comes from an article on [www heretical.com](http://www.heretical.com) written by John Baker.

After everyone who wishes to see her enormous buttocks and other physical peculiarities has had an opportunity to do so, her corpse is made available to Cuvier for more exact study. He describes her anatomy before an audience in 1817, and on this occasion takes the opportunity to exhibit her external genital organs, bottled and prepared in such a way as to leave no doubt as to their true nature. He confirms that the organ projecting from the vulva consists in its upper part of the prepuce of the clitoris, while the whole of the rest of it represents the greatly enlarged labia. Fascinating work for those who can get it.

Cuvier casts her body in wax, dissects it and has her skeleton articulated. Her genitalia and brain are pickled and displayed at the Musée de l'Homme (Museum of Mankind). They are finally withdrawn from public view in 1974, and her remains are assigned to a storeroom and forgotten. The dehumanizing treatment of Baartman is one of the first topics taken up by the new government in South Africa and eventually her remains are returned to South Africa, where she is a symbol of the style of treatment handed out by the colonial Europeans to the local Africans of the Cape.

While we are down here talking about fishing, one has to wonder about the evolutionary purpose of this complex female anatomy? In early man we are dealing with rapidly evolving reproductive organs. Encephalisation is throwing the whole hip structure of women out of balance with the rest of our anatomy. This is why the current Governor of California, Arnold Schwarzenegger, remarked that the reason he took up bodybuilding was that "when I looked down at myself in the shower, I knew that I had to get those legs into proportion".

Sexual function in males is simple. Orgasm is clearly a means of getting out the DNA messages from one woman to another. The male orgasm is simply there to reward us for keeping up the good work.

In women this is a much more complex process. It seems to provide no biological purpose. The big question from gorillas to garage attendants is - Why do women orgasm?

Males and females are not separate entities, shaped independently by natural selection. Both sexes are variants upon a single DNA ground plan, elaborated in later embryology. The vast majority of DNA is shared. It is crucial to note that the penis and the clitoris are the same organ in men and women; there is an organ in the primordial, undifferentiated embryo that turns into a penis if it receives a dose of hormones, otherwise it matures into a clitoris. In other words, the penis and the clitoris have the same embryological origins and are thus called “homologous” organs.<sup>194</sup>

Anthropologist Donald Symons gives as explanation of female orgasm:

*The capacity for orgasm in females stems for the fact that they share with males the basic neurological mechanisms that underlie a capacity which is biologically important only in males. For the sake of simplicity the genetic blueprints for males and females remain as similar as possible without incurring reproductive disadvantage. Thus a female canary has all the mechanisms for singing but does not demonstrate this ability unless injected with male hormone. The human male has vestigial nipples which are quite useless to him and are not erotically sensitive unless he is given oestrogen. A woman's clitoris is likewise a vestigial penis and, as such, is rather small and not located in such a place that heterosexual intercourse is the optimal method of stimulation. If sufficient clitoral stimulation is given, orgasm will occur.*

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<sup>194</sup>*The Case for the Female Orgasm: Bias in the Science of Evolution*, Elizabeth A Lloyd.

Confirmation of Symon's "artifact" theory of female orgasm comes from the discovery that male hormones increase a woman's sexual responsiveness. By contrast, attempts to treat female orgasm difficulty by using anti-anxiety drugs to counter the supposed inhibitions deriving from upbringing and religion repeatedly fail. This does not devalue the female orgasm in any way or the efforts made by sex therapists and women's consciousness groups to help women achieve it, but it does help if we abandon the myth that men and women are "made for each other" – that is, constructed in such a way that in the absence of any pathology they will naturally experience simultaneous orgasm during intercourse.<sup>195</sup>

The enormous size and strange form of the buttocks in the female sex are among the most striking peculiarities of the Khoisan. The term *steatopygia* is used. Very large buttocks occur sporadically among European women, and are depicted by Palaeolithic artists in European caves, but their form is rounded. Khoisan artists depict their women with asses that project as a right-angled triangle, the upper surface being nearly horizontal. It is improbable that the enlarged buttocks of female Khoisan represent a storehouse of nutriment on which the body may call in times of scarcity. The Khoisan cannot be regarded as people adapted by natural selection to desert life as game was plentiful. It is far more likely that the buttocks became enlarged in response to sexual selection.

This is what Darwin implied in the case of Hottentot women in whom "the posterior part of the body projects in a wonderful manner". He mentions the admiration felt for this peculiarity by the males of their tribe. This should indeed not have surprised him, for he wrote his work on sexual selection at the time when bustles were in fashion in England, and he must have realized that the women who wore them

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<sup>195</sup>Much of the description of this comes from an article on [www heretical.com](http://www.heretical.com) written by Glen Wilson.

were under the impression that this change in their appearance increased their charms for members of the opposite sex.

The admiration for this particular feature of feminine anatomy must, however, have been much more lasting among the Khoisan males, for the remarkable results achieved suggest selection over a long period. Imagine the evolutionary shock to women around the world when some Italian fashion designer decides in 1960 that slim is a better look. His success fires up both a new fashion industry and an industry of clinical psychologists dealing with bulimia.

With this kind of press you can imagine that the womenless Afrikaners of the 17<sup>th</sup> century also took it upon themselves to advance the boundaries of scientific research.<sup>196</sup> However, what happens to women once they leave the Garden of Eden? Europeans seem to have bred the clitoris to near extinction, which is why British women will tell you that the difference between a pub and a clitoris is that English men can always find a pub.<sup>197</sup> What of those advanced races, the Asians, the Negroes and Bantu, who have common tribal customs of cutting women at an early age, the idea is to makes them more reproductive? Understand now why we have to fight for secular rights in South Africa? *Oobedoo – we want to be like you-oo.*

On the change in women's genitalia, the African fossil record is once again frustratingly silent. Like a virgin at a matric dance, the large labia seemed to have disappeared from the Khoi along with the clicks in the language. Modern occurrences of the genitalia are much harder to confirm in the mixed races of modern South Africa. I have made it my life's work to follow this research in the field and, sadly, I can only report that so far the sample is too small and the work urgently needs further data. It will now be up to younger men than I to finish this valuable line of inquiry. For those of you that need extra

<sup>196</sup>Trekboers or moving farmers, were the Afrikaner farmers who spread out from Cape Town into the Overberg and down into the Garden of Eden.

<sup>197</sup>Pub is short for public house, meaning a bar. Lovely girls, the English.

supervision of your dissertation, let's meet down at the Yacht Club to have a beer and discuss the details of the hypothesis.

Against the evidence of two billion years of evolution, the Langarm dance between the Dutch and the Khoi supposedly creates not one, but two new races. At the apartheid white Schools, National Christian Education teaches us that the Afrikaners are the pure white guys who keep to themselves and reluctantly tolerate Khoi as servants and imported Malays as slaves. The Coloreds are the Khoi who mixed with the new slaves and with the drunken sailors stumbling around the foreshore docks raging with shore fever. Now for you white supremacists, who like to dress up in khaki<sup>198</sup> short pants, wave swastika flags and go horse-riding on Friday nights, I have some very bad news for you. Unfortunately, as very few of you can pronounce "mitochondrial dehydroxiribonucleic acid", very few of you will be able to follow the logic or swallow the result.

The construction of the Afrikaner and Colored races as separate genetic entities is a legislative footnote, dreamed up one night over brandy and coke. mtDNA shows us that these races are closer than the English and the Scots.

You don't have to have a degree in applied mathematics to understand a simple population mixing model. In an oversimplified model, say two races meet and only 1% mix per generation. After 1 generation 1% is mixed. After 2 generations, another 2x1% mix, plus the first 1%, so 3% is mixed. After 3 generations another 4x1% mix, plus the 3%, so 7% is mixed. After 4 generations 15% is mixed and after 5 generations 31% is mixed. Can you see where this is going? Afrikaners have been mixing with the Khoisan for 14 generations. There are not many Afrikaners that can deny their African heritage.

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<sup>198</sup>A light brown cotton colored man's dress first introduced by the British troops in Africa. Also worn by Hitler's 1930's Brown Shirts.

In a more recent history, the Jewish holocaust is made to look totally nonsensical. Jews have been mixing with Germans for 700 years under similar models to the Afrikaners and Coloreds. Hitler doesn't murder six million Jews. He murders six million Germans! The irony of this genocide and fratricide is lost on the so-called civilized world.

The dominant mixing was Dutch males to Khoi females, simply because there were so few Dutch women in the game. But it was not restricted to this relationship. I live on the Steenberg Wine Estate, a farm started in 1682 by one of these exceptional European women who did make the boat trip, Katharina de Ras. Ms Ras had four husbands and numerous children and was a personal friend of the Governor of the Cape, Simon van der Stel. A writer for the time gives the game away by describing Katharina's "Brazilian looking children" riding bareback around the farm. White women were a Cape rarity and it seems our Kate didn't restrict spreading herself around only to the Dutch locals. Must have been quite a lady.

The Khoi and Bantu can stand up to the European Settlers with genes and sex, but are unable to stand up to the onslaught of Christianity and the technology of warfare. In a puff of gunpowder smoke and the cracking sound of a closing bible, 200 000 years of history disappears. After leaving Africa the Europeans spend 60 000 years conquering and being conquered. This produces a culture with an adoption and rate of assimilation of technology that is unmatched in Africa.

When the children of Cain return to Africa they are built for war. War has never been a part of African history. Even by 1850 the best the Africans have to offer is the Zulu empire. The war machine here is about on a par with the Spartans of 500 BC. This puts the Africans approximately 2000 years behind the Europeans in the arts of war.

Shaka overwhelms all before him with simple stabbing tools. He uses no catapults or animals as machines of war. Any conflict between the incoming colonists and the Bantu is completely one-sided and the colonists bring a savagery as foreign to Africans as it was to Neanderthals. Conflicts with the San are even more one-sided and are more like organized game hunts than military conflict. In a short time all the local inhabitants are brought first under the control of the Dutch and then under the control of the British Empire.

History's irony is that it is the races that are conquered the most that come out as conquerors. The Jews, conquered by Canaanites, Egyptians, Romans and Germans, today top the American system. The English are a race conquered by Picts, Romans, Saxons, Danes, Normans and Americans. The English strike back and build the biggest empire the world has known, built on little more than the knowledge of how to do it. In colonial Africa, South Africa is the first to be colonized and the last to be liberated and consequently the country to assimilate the most of European technology.

As the Afrikaners spread eastwards from the Cape colony, their first move is into the Overberg and down into the Garden of Eden. Wherever they go, they spread their paternalistic society, their Calvinist branch of Christian religion, their new Afrikaans language and billions of the smallest cells in the body. The Khoisan exist with little change for 200 000 years, and in 150 years transform themselves into a new race of Coloreds living in towns with quaint names like District 6, Macassar, Calvinia and Genadendal.<sup>199</sup> The new language is Afrikaans, a derivative of Dutch, with very few Khoi words.

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<sup>199</sup>Genadendal, the town for getting near. The Coloreds that lived close to the Afrikaners were known as the *Bywoners* or near-livers.

Dancing together and separately through ten generations, the Afrikaners and the Khoi moved northwards and eastwards, until they come up against the Xhosa at the Fish River. The Xhosa are the southernmost group of tribes of the Bantu immigrants.

The Bantu expansion eastwards and southwards is driven by iron age implements, agriculture and cattle herding. The Bantu move at a leisurely pace. They have a culture of mysticism and witchdoctors. If these witchdoctors could actually have seen the future, they would have hurried to the Cape and been there to kill the Dutch as they first set foot in Africa. For once this foothold is established, the white man just keeps coming, and he brings a barbarism with him, honed by years of fighting in the tribal battlefields of Europe.

The Xhosa are the first to meet the San. The San do not take up the Bantu culture, but choose war instead. The San lose and get pushed back off the coast into the dry interior. In each ensuing battle, the San lose and their women and children are taken in and adopted into the Bantu tribes. This is why Nelson Mandela looks like he does and Shaq O'Neil looks like a West African.

At a similar time, 1000 years ago, a central migration of Bantu Sotho-speakers enters the territory and meets the western San. We have still to document their prehistory, but it appears that they mix far more easily with the San. These are the Sotho and Tswana people of South Africa. Rather than murder the San, they enslave them and teach them industrial arts. It is the beginning of the end for the hunter gatherer society. The Sotho build the gold mining industries of 1000 BC, and set up the legends of lost white tribes that colonials write about later.

In the west, first the Dutch and then the English ignore the dry territory of the Namib. By 1904 the Germans have established themselves as rulers of the territory and they deal harshly with the locals.

The Namas make themselves famous by siding with the Hereros in a revolt against the Germans. The result is the first genocide in the history of the 20<sup>th</sup> century. Fifty thousand Herero and 10 000 Nama perish at the hands of German general Lotha von Trotha.

The Nguni Bantu move down the eastern coast of Africa with their cattle and crops. The agricultural advantage of the eastern Bantu runs out at the Fish River. The Bantu have crops like millet and maize which don't grow in the Garden of Eden's low summer rainfall. Like Bartholomew Diaz, they look into the Garden of Eden and see drought and famine. Five hundred years later the Dutch come into the valley, bringing winter rainfall crops like wheat, oats and barley.

There has to be something in these Khoisan babes, because the basic deal for the encroaching Bantu is to drive off the males and to take and keep the women and children. In zoology this is most unusual. When an alpha male lion wins control of a new pride, the first thing he does is kill the cubs so that it is his genes alone that are passed on. For the Khoisan women, the currency is food, shelter and most importantly the opportunity for us both to spread our seeds. The Dutch understand the deal immediately.

The English Settlers arrive in the early 1800s and settle in the Eastern Cape, between the Coloreds and the Xhosa. They spend the next 100 years making up excuses to raid the Xhosa and steal their cattle. By the late 1800s they have completely broken the power of the Bantu tribes all the way up to Natal and disenfranchised them, a situation that stays in place until 1994.

Keeping cattle is, for the Khoi, the first major change in 100 000 years. Things happen very quickly for them after that. First they start eating beef and the next thing they are speaking Afrikaans, baying at the moon, European messiahs and Middle Eastern prophets. Worst of all, the girls lose the anatomy for which they are most loved.

Most Afrikaners regard the 1900 Anglo-Boer war as the Civil War of South Africa, but in reality it is a side show. The real family conflict is between the Afrikaners and the Xhosas, two half-brothers each with their own allies. For the next 200 years the Xhosa and Afrikaners fight for the soul of South Africa. By 1900 the current racial mixes of South Africa are settled. We have three races. Eurasians are recent immigrants primarily from England, Germany and India. Khoisan-Eurasians include the Cape Coloreds, the Afrikaners, the Namas and the San. There are no pure San left. The Khoisan-Bantu are the mixed race of Bantu and San, including the Zulus, Xhosas and Sothos. There are no pure Bantu left in South Africa.

We enter a period in our history directed first by colonial whites and then by neo-colonial blacks in which South Africans define race by completely subjective criteria. It is indeed an irony that the world's earliest tribe denies this common, royal African Khoisan heritage and spends the next 100 years pretending to be everything but itself. Pilgrim, if this is not proof that there are really sick minds at work at Intelligent Design, then nothing will convince you.

## The Second Coming

11<sup>th</sup> February 1990. Nelson Mandela is released from prison and a new era begins for South Africa. Political parties are unbanned and the miracle of peaceful transformation begins. The vast majority of South Africans, black and white, enjoy a new freedom and many go on to prosper under it. Nearly 20 years later, however, people are still categorized by race in South Africa. A new group of social eugenicists rules in South Africa. The new laws are packaged in a completely different way, carry a new motivation and use a new terminology. While they cannot be compared with the devilishness of the previous regime, nevertheless they are still laws that measure and treat you by the color of your skin. Adam Smith's *The Wealth of Nations*<sup>200</sup> is not well read amongst African nationalists. While the new laws have noble intentions, they fly against the logic of 300 years of classical economics and serve only to perpetuate the economic status quo.

This is not a book on African politics. The new Africanism is important to our story, because it is the last case of ethnocentric thinking that suppresses the story of the Beachwalkers. We have seen that truth is suppressed first by the Catholics, then by the British and then by the East Africans. Our last chapter of the suppression of the truth about human origins is dominated by an unlikely source, the victims of apartheid.

There are six billion genetic stories to tell in the world and many of these have been covered. The focus of the last ten years of population genetics has been to describe the whites and their five billion descendants.

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<sup>200</sup> It is difficult for anyone to read. If you want get to grips with it read PJ O'Rourke's summary. PJ gives it a humorous touch that the Scots simply lack.

I will focus on the current position of Africa and the black diaspora. Our leading Africanist, Mike Muendane, tells us, quite correctly, that the Europeans invented racism. Racism was not a high profile concept in precolonial history. All non-Africans should only smile at the irony. There are five tribes in Africa and there are five tribes in the world. All five billion non-Africans fit into one tribe, let us call them the whites. The fact that Aborigines or South American Indians do not look white is simply the fickleness of genes.

The whites, all five Billion of them, came from a small group that left Africa 60 000 years ago, or 2400 generations ago. The expansion from Asia into Europe is as little as 40 000 years ago, or 1600 generations and into the rest of the Pacific-bordering countries less than 10 000 years ago, or 400 generations. Recently we have all been washed white again by the expansion of Europe and washed black by the expansion of the West Africans. It may seem strange to white readers that in the same way as Europeans see little difference between various African races, Africans can see little difference between whites. Serbs and Croats, Israelis and Palestinians, Sunnis and Kurds, Pakistanis and Indians, Baltics and Slavs, East and West Timorians are as indistinguishable to many Africans as Hutus and Tutsis are to most whites.

Few countries can carry the depth of ancient and recent genetic history that makes South Africa so colorful. We carry the genes of all five African tribes, four of them, Pygmies being the exception, in significant quantities. I will focus on South Africa and particularly the mixed races. The South African story is amusing and carries lessons for us all.

I think unless you have really experienced interracial contact it is difficult to understand the difference between racialism and racism in anthropological terms. Racialism recognizes our cultural differences and uses these as positives.

Racism uses negative perceptions that impair judgment. For example I find black South Africans to be some of the most racist people that I have met. Of all of the world's people, you would think that they would be first to cure themselves of this cloudy thinking.

We are all guilty of racist attitudes. Next time someone cuts in front of you in the traffic, don't tell me that race doesn't come into it! I would like to think that I am better than most, although you can be forgiven for misinterpreting my tone. I treat all people equally, while most people put up an insincere front when dealing with other races. This integrity is often mistaken as rudeness. To me, anything else is dishonest and patronizing.

Although I have not had the ultimate exposure to interracial relationships that sharing children from an interracial relationship brings, I have had deep relationships across religious and racial differences. Cultural differences do make it difficult. I had two separate relationships with Islamic women, one Arab and one black. Both ended in separation by mutual consent, simply because, while we were fond of each other, we struggled with the large cultural difference. Try Islam – it's a real drag. The Ramadan is a long dry period and gives little spiritual joy to nonbelievers. I even gave myself a Muslim name, Abdul Lateef, the Slave to Allah. It didn't help.

I now live happily with a fundamentalist Christian who cannot be further from myself on the theological scale, but has similar cultural customs. All of this must dreadfully upset my maternal Jewish ancestors and my paternal Anglican priests. They are always out there rooting for me. I hear that some of my ancestors have contacts at Intelligent Design and as long as I mend my atheist ways and beg for forgiveness they can apply to get me into the human female anatomy department, where I can spend eternity improving organs. I assure them that the moment I see the gates of heaven I will become the most ardent supporter of creationism. God works in strange ways indeed.

*Every* black South African that I have known has been a creationist. Some of them may not be devoutly religious people, but they *all* believe that we are created by a higher power. For a Christian, this evangelical conversion of Africa may be construed as the ultimate success – for atheists, we see it as cultural genocide. *Not one* out of all the black Africans I have known has the freedom of thought to see an evolutionary beginning. This is truly disturbing. Theologically, there is no middle ground, once you take the first step to adopting scientific thinking it is a slippery slope – you will eventually be embraced by the atheist philosophy. Eventually logic will destroy faith. Christians know that the only defense is not to think about it.

There are exceptions, but women don't make great atheists either. While some women that I have known can get to the point of indifference, they are not easily able to openly challenge God. They tend to cling to the vain hope that there is meaning in life. I guess it is something to do with the maternal instinct and wishing, against all logic, a better life for their children.

What Africans find in this fascination with Christianity and Islam is a mystery to me. Particularly when the alternative model proposed by paleoanthropology provides for them a clear explanation of their own importance in the development of the human race. When faced with associating themselves with the royalty of Africa they choose instead to play the role of second class citizens in a middle eastern fiction.

Black Africans need not take my word for it when they can simply follow the words of the good book, Genesis 9:

*Shem, Japheth and Ham were the three sons of Noah, and from them the whole earth was peopled.*

*Now Noah, a man of the soil, was the first to plant a vineyard. When he drank some of the wine, he became drunk and lay naked inside his tent.*

*Ham, the father of Canaan, saw his father's nakedness, and he told his two brothers outside about it. Shem and Japheth, however, took a robe, and holding it on their backs, they walked backward and covered their father's nakedness; since their faces were turned the other way, they did not see their father's nakedness.*

*When Noah woke up from his drunkenness and learned what his youngest son had done to him, he said: "Cursed be Caanan! The lowest of slaves shall he be to his brothers."*

*He also said: "Blessed be the LORD, the God of Shem! Let Canaan be his slave. May God expand Japheth, so that he dwells among the tents of Shem; and let Canaan be his slave."*

It matters not to argue that this reference had nothing to do with the future enslavement of Africans, what matters is that the concept of enslavement and secondary rights for certain racial groups is enshrined in the philosophy of all three of the Abrahamist religions. These are not my words, remember., they are the Word of God! At best you can say God had nothing to do with this, he was only recounting the words of a drunken Noah, the one man amongst all men that God had chosen to save from the flood!

For Africans, where the choice is to understand that you are closely related to the absolute source of humanity and that all people descend from Africans, or to give this up in favor of a foreign religion, with Jews or Arabs at the center, and in which you are unwittingly assigned a second-class role, is astounding. We are all supposedly equal in the eyes of God, but ask any Pilgrim that has made the Hajj to Mecca, if he does not think that the Saudis, just maybe, perhaps just a tad, think of themselves as just a smidgen more equal than others.

Settlers brought the Word of God to Africa. My missionary ancestors must be looking down from heaven and laughing as they order another round of beers.

South Africa's genetic story starts 200 000 years ago with the Beachwalkers, who split into the western Eden leavers, Abel's children and the eastern Eden leavers, Cain's children. The extent of the mixing with the Pygmy gene pool is not yet determined. The mass return to South Africa starts 2000 years ago with the Bantu immigration, followed 500 years ago with successive waves of Dutch, French, German and English immigration. Slaves are imported from Indonesia and East Africa. Asian workers arrive under British protection from India. Colonial Portuguese and white Zimbabweans arrive with the collapse of colonialism. Central and West Africans arrive when it becomes obvious to everyone that colonial-built South Africa actually has running water. Today, like America, the descendants of immigrants dominate South Africa. The native people, the San and the Coloreds, are pushed aside. The rest of us grow big horns, pummel our chests, parade our penises and stride around the southern savannah trying to blend in and look like *Australopithecus*.

The United States has only two races, mixed Afro-Eurasians and pure Eurasians. South Africa has a similarly interesting mix. We have three races: Eurasians of late arrival, mixed Khoisan-Eurasians and Khoisan-Bantu. It is a little more complicated than this, and it is not meant to be insulting to those minorities left out, but these are the major groupings. The San and the Bantu have been mixing for 120 generations and the Afrikaners and Khoi have been mixing for 14 generations. There are very few South Africans who are not of mixed race. The majority of Americans are also of mixed race. If this analysis offends you, put it down to my lumper insensitivity; however, genetics sides with me.

mtDNA is new in South Africa and its implications have not yet been fully digested. Today's Afrikaners are the children of my father's generation, the finger-wagging apartheid dictators of the late 20<sup>th</sup> century. Afrikaners have adapted rapidly to the New South Africa and have prospered in it. Yet most of them would be dismayed to find that their mitochondrial mother is not Dutch, she is Khoi.<sup>201</sup> Many African nationalists will be surprised how much European genes have poisoned their Bantu purity in as little as six generations of contact.

Black Africans will stand aghast at the revelation that the Dutch invaders have now themselves been genetically invaded by the San, and are therefore as close to the indigenous people of South Africa as the Bantu, possibly closer!

The Cape Coloreds have struggled for so long in their desire to be white that they have lost touch with their Khoisan heritage. The language and culture of the Khoisan is lost. Worse, they are mired in the grip of two fundamentalist religions, Christianity and Islam, which will have them believe that the true beginning of themselves was somewhere in the northern hemisphere. The Hajj is a yearly pilgrimage to Saudi Arabia to get close to the spiritual source, which is in fact right underneath their own feet. This paradox is so ironic, that it could only have been designed by some eighth century Arab slave trader who has worked his way up to committee level at Intelligent Design.

The South African Asians of Indian origin would like to think of themselves as a separate, non-African race, and this is largely true, as it is for the English Settlers. It is early days yet; they are destined to mix into Africa. I dated a woman of East African descent, who had a daughter of an Indian father. The combination is such a mix of beauty

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201 The concept that your mitochondrial mother defines your race is an American genetics invention born of necessity, of simplification of the genome. The reality is that recombinant DNA makes your genetic composition a much more complicated calculation.

that it is a product for which demand will surely just keep growing. Madagascan women are a mix of African and Indonesian decent. Madagascans get my bronze medal in the beauty stakes, after Bloemfontein and Berlin. Curry is a favorite dish in Africa.

Of course it is not true that all Afrikaners are of mixed race. Some of them are first or second generation of direct immigrants from Holland, Germany and France. This makes them effectively Settlers like me, Settlers who deny their European genetic heritage and pretend to be native Africans. One of the most famous of them is Hendrik Verwoerd, born in Holland and destined to lead the Afrikaners into a 47-year walk about in the desert wilderness of irrationality. Like Napoleon, Hitler and Stalin<sup>202</sup> before him, he comes to South Africa, joins the right wing, convinces them of their own racial superiority and proceeds to bludgeon his way to power. The Afrikaners are so drunk on the rhetoric of their own superiority that they forget Verwoerd's European passport. Nobody calls him a *saltpenis*. I guess if Settlers can claim Raymond Dart as one of ours, we can forgive Afrikaners this small oversight.

In a fever of religious racism, Verwoerd and his cronies dream up a crazy plan to keep South Africa's white race untainted by other groups, not realizing it is already too late. When they get a dissenting voice from their allies of 350 years, the Coloreds, they rig the election and get the Coloreds struck off the voting roll. Coloreds are now reassigned into the same category as blacks. It is indeed a strange time to live in South Africa. One evening I am out jogging and a neighbor's five-year-old kid jumps out at me and starts shooting at me with an plastic gun and imaginary bullets. A moment later his father arrives, smacks him twice about the ears and cries, "Have I not told you, not white people, you can only shoot Kaffirs."<sup>203</sup>

<sup>202</sup>Napoleon, born in Corsica to lead France; Hitler, born in Austria to lead Germany; and Stalin, born in Georgia to lead Russia.

<sup>203</sup>Afrikaans derogatory word for anyone not white.

Children go to separate schools. People are jailed for cross-racial sex. Huge parts of English literature are banned. Abortion is outlawed. Dissent is taken as treason and punishment is without trial. White soldiers are conscripted on the basis of skin color. Blacks are forced to carry passbooks and learn Afrikaans. We have separate sports teams, separate toilets and separate burial sites. This is a stamp collector's paradise. South Africans carry different passports and have border controls at the new *sovereign states*, dotted like leopard spots on our country's map. Indians can pass through the Free State, but not stay overnight. Dimitri Tsafendas, son of a Greek father (another immigrant) and a black Mozambican mother, assassinates Verwoerd and a nation goes into mourning with a seven-day drunken orgy of dancing and celebration.

The Coloreds enter a really weird era in their history. Government policy dictates that ten times more money is spent educating white children than on non-white children. It is perfectly obvious to everyone that being white grants you a whole lot of advantages over being Colored. This is before DNA testing. Racial classification is done with an Auschwitz-style eyeball process. Families are split because some have blue eyes and light complexions, while others have curly black hair. Famous is the pencil test carried out by the department of Bantu Administration. A pencil is twirled in the hair. If it remains twirled or straightened then the person is white; if the hair springs back the person is non-white. If a pencil is pushed into the hair and comes out when the person shakes their head, they are Colored, if it sticks in their hair they are Black. Armed with this research, our nation sets about forging its destiny.

Being white means that your Colored relations can be a liability and get you reclassified. Invitations to Christmas dinner stop coming. Relatives walk past each other in the street without acknowledging each other, at worst they will part and never have contact again.

The racial police are everywhere. The Coloreds get relocated out of District 6 to Mitchells Plain and you have to wear dark glasses and travel miles to secret venues if you want to listen to great jazz.

This is nothing more hilarious than Woodstock, a mixed suburb in central Cape Town, with many first generation white and Colored mixed families. The Commission of Bantu Affairs comes in and starts categorizing people. Families are segregated by a patchwork of street blocks. Everyone wants to be white and a pale-skinned boy really gets to spread his genes around. Young alpha males with names like Witbooi and Smith, who grow up in this environment, tell nostalgic tales of a Woodstock that was once the Avalon of African sex.

Church communities start noticing that certain members come back from the racial commission and sit on one side of the Church only and then don't come back at all. People can't remember their slave surnames like Adams or April and start clinging on to their Afrikaner names like de Villiers and van Niekerk. Families have to move to a house over the road to comply with regulations. When you go to your grandfather's funeral, people turn up in the front row that you have never seen in your life.

Many Coloreds join the Communist Party and the ANC – duh – and are instrumental in securing the release of Mandela, the unbanning of the ANC and democracy in South Africa. Joy in the streets, the rainbow nation is born and we are ready to clip the peace dividend. Nelson Mandela makes the gracious step of forgiving whites and wears a Springbok rugby jersey. He walks into our gym one night and I give him some tips on bench press, no kidding. Mandela comes with none of the troops of security guards associated with the Afrikaner government politicians. Just a visitor to the gym wanting to learn a bit about bench press. True greatness.

Freedom is done and dusted you would think? This is not to be. We fight a long struggle against racial classification, which is supposed to end with liberation in 1994. The new ANC government wants to redress the imbalances of the past, so they introduce acts of parliament that mimic those of the Afrikaners. The terminology is softer, but the inference and justification is just as puerile.

The irony that we have struggled to overturn racist legislation, only to replace it with a muddled 21<sup>st</sup> century version, is lost on everyone clamoring to get a free government handout. At first the Coloreds are enthusiastic participants. Why not? The new Black Economic Empowerment clauses seem to work for everyone except able-bodied white males. It is now fashionable for *Bushies* to refer to themselves as black. White males, still embarrassed about the conduct of their fathers and grateful for Mandela's peace gift, say little.

Genetics tells us that all genes are passed to everyone, so it is a non-scientific statement to say that I have less than 10% of Jewish genetics in me. Those that have a bit more point out to me that Jews make up 2% of the American population and own 50% of the assets. The rest of us are still trying to figure out who the chosen race is. The fact that most Jews are in the top 2% of the wealthy in any country (besides Israel), is lost on South Africa's new social eugenicists, determined to build their racially demarcated society. No economic logic for us. Past imbalances must be redressed. We ignore the 100 year failure of central economies and we push on with our racial restructuring. Many of South Africa's Jews move on to London, Sydney and San Diego, where surprise, surprise, even without apartheid they are universally successful and instead of helping us, they use their skills to benefit other less racist societies.

Ten years go by and inequalities fail to disappear. Nonracialism is stillborn. Something must be wrong; we crank up on our full racial classification system and introduce apartheid-style points systems for blackness. A whole industry grows around BEE, Black Economic Empowerment. Black women are the most black and Colored males are not as black. White women are a bit black, and white men are definitely not black, but are OK if they are helping to put the finance together. We joke at the golf club that instead of putting together *Grassroots* companies we are putting together *Astroturf* companies.

No matter how hard we try, the pot does not seem to get shared out and white males still seem to make the most out of the New South Africa. This cannot be, we are in some kind of post-Keynesian nightmare, where the wrong guys produce the most output.<sup>204</sup> It has to be apartheid's fault, so back to the rack to tighten up on who is actually black.

Central African immigrants are definitely not black and your GPS position at birth becomes a vital component of how our society judges you. The Coloreds are now also not as black as they used to be. They find themselves being locked out of universities and factories by people who are more black and for the first time in 200 000 years don't need summer crops to come to the Cape. It is not about who you are, but about what race you are. The new pencil test is a racial scorecard that all organizations must fill out. The new test is about how previously disadvantaged you are, even if you were not there at the time. The pencil test makes more sense. Looking black helps. Christmas invitations stop arriving again.

Fifteen years go by and South Africans, instead of recognising the longest branch in human genetics that binds us, carry on developing separate cultures.

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<sup>204</sup>John Maynard Keynes proposed a mixed economy of government intervention to actively address imbalances like unemployment.

Underlying distrust festers. This explodes periodically as a pus-filled boil in the form of racially motivated attacks on other groups.

Afrikaners and Cape Coloreds have only themselves to blame for their own convoluted self-image. Afrikaners have a joke about The Cape Coloreds, “While we were making them it was fine, now that they are making themselves it is a mess.” For those seeking self identity, that DNA test is long overdue.

It would be a lot simpler if both these “tribes” recognize the significance of their joint recent and ancient history. They are both victims of the same corrupt thinking. This is actually one race with a pathological split personality, who happen to have, more than the other 99.9% of the human race, the longest direct history to the Beachwalkers. By playing down their joint Khoi heritage, the Afrikaners and the Cape Coloreds give up a genetic birthright to the Southern Cape, a birthright that extends back 150 000 years more than the claim of anyone else.

The San as hunter gatherers have all but disappeared and seem to be little more than entries on an anthropologist’s wish list. These self-styled anthropologists, guardians of a non-existent hunter gatherer race, are ever racially sensitive and overplay the hand of primitiveness. The San are not the earliest race, by a margin of 70 000 years. They are simply the first to leave the Garden of Eden, the descendants of the Eden leavers. They are not some poor cousin exploited by anthropologists and they don’t hold any more of a grip on the Beachwalkers than the Afrikaners. The main arguments that the San have with local governments are about space and the right to continue hunting Africa’s diminishing game stock, this time using 21<sup>st</sup> century technology.

The UN Ambassador to the San should informed them about the six billion hungry monkeys they spawned, and how much space a small family can expect to get in a flat in China. The San don't need hunting rights, more than anything the San need cellphones, computers and broadband Internet access. Don't shoot me, I am only the mtDNA messenger.

The Namas are a small tribe of Khoi found in the Northern Cape around the Richtersveld, south of the Orange River. They have been at odds with the San for thousands of years. They name a local cactus, *Pachypodium namaquanum*, the *Halfman*, because it always points north, looking towards Namibia from where they were driven by the San. They are now pastoralists and agriculturalists living in the Cape. They have a far closer link to the Khoi of the Southern Cape and have a lower mixing rate with the incoming colonists. They offer us an interesting genetic window to the Khoi prior to colonialism.

Around 200 million people make up the African diaspora. These are mostly people that "reluctantly" left Africa in the last 500 years and they live mostly in the western hemisphere. 30 million live in the USA. If you follow my models, you will see that my position is that they make up much more than 30% of the USA. In many ways they have borne the brunt of the import of racist thinking from Europe. No matter how much mayhem they caused in Africa, the Europeans have never been comfortable in quantity in Africa. Except in Southern Africa, no white people had travelled to the center of the continent Africa 150 years ago. David Livingstone was the first to do so. He died there.

African colonialism is a very short affair, lasting approximately 80 years. In the Americas, contact between black and white people has been going on for 300 years. Afro-Americans, and those Afro-Americans who don't even know their own heritage, should realize that far from being a minority they probably comprise the majority of

Americans.<sup>205</sup> How is it possible that the nation most advanced at genetics makes this understatement? Population genetics analyses nonrecombinant DNA, because this is easier to differentiate. The vast majority of racial mixing, however, is in the combining genes. Using DNA tests, this is a lot more difficult to determine. However, using simple mathematical modeling and the “one drop” principle, it is easy to see that genes get around.

Let the children of Abel reclaim the way of peace. The current racist rhetoric that comes from the leaders of the black community in America betrays that fact that while being partly from Africa, they now also carry the mark of Cain, the M168 gene. Afro-Americans – a more correct term would be Afro-Eurasians-living-in-America – like their white brothers, are of mixed race. America would be a better place if they recognized that historically Americans are children of Africa twice over.

Where does this leave the modern African in the world? The clearest modern voice we have on African Nationalism is Ngila Mike Muendane. If Muendane had made it as PAC President, the world would have been a better place. Ironically he came from the exile faction and his eloquence and western manners were regarded by the party faithful as not “indigenous” enough. Muendane offers up a number of solutions that are a 21<sup>st</sup> century version of how you would feel Sobukwe would think today.<sup>206</sup> The central theme is being proud of who we are and living that reality. A good starting point is to understand who we are genetically.

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205 This is entirely unsubstantiated and is only my speculation based on rough models of racial interbreeding. A small research project in population genetics should prove this.

206 Robert Sobukwe is the leading Pan Africanist thinker, who died in an apartheid jail. His thinking while not part of any successful political process, underlies much of the thinking of modern African politics.

Africa is awakening today to who we are and how we fit into a fast-talking, fast-bargaining world. While I come from the same political ideology as Muendane, our conclusions are opposite. For me, the ball is over and the clock has struck twelve. With the pumpkin skin already covering the carriage door, there is simply no time for one more dance. Africa's problems will no longer be solved by dwelling on colonial differences. We are all the children of colonialism. I ask only from the African nationalists that they recognize the aspirations of all South Africans equally and without racial or religious prejudice. And please, take some time out to understand the human genome.

The West Africans have a proud heritage. With their Bantu descendents, the children of Abel make up today about one billion people or 15% of the human race. Of all racial groups they stand apart as having committed the least amount of environmental damage. Where they have lived, Africa, Central America and in the southern USA, the environment may not have thrived, but it has certainly survived. Species extinction has been at a minimum under their management.

So forested was medieval England, that a squirrel, without touching the ground, could hop along branches from one side of England to another. To someone flying over England on a clear day it is clear that today it is at best a patchwork quilt of agricultural smallholdings and at worst an industrial wasteland.

My maternal family comes from the Transkei, on the south-east coast of Africa. This is also the homeland of the Xhosas and Nelson Mandela. As children we were told that when the blacks get control of the Transkei, they will "pull up the floorboards for firewood". The Transkei, even under the apartheid government, was controlled by the Xhosas. Today, after 20 years of black African rule, it is one of the most beautiful parts of South Africa!

Africa no longer plots her own destiny. We are now an integral part of the worldwide human juggernaut, and our destiny is tightly intertwined with the future of the world community. We started this mess and we should be part of the solution. Local culture is desirable, but it is a luxury. The driving global forces are natural resources, exchange rates, capital investment, international trade, environmental exploitation. Of all the continents, we have arguably looked after ours best. Soon, all eyes will turn to our assets. Africa faces the very real danger of being turned into a mineral quarry for the world's manufacturing process. We created hand tools and social organization; the new tools of human advantage are English, XML, computers, the mass media and the Internet.<sup>207</sup>

As South Africans we are not coordinated in a joint effort to advance our race. We are still under the misapprehension of being the rainbow nation. Both black and white South Africans struggle to recognize the recent migration of their ancestors and the integration with the Khoisan. Whites think of themselves as European guests. Black South Africans like to think of themselves as the indigenous people of South Africa. Whites are the Settlers and the Coloreds are half Settlers. Nice idea, but sadly far removed from the genetic truth.

The good news for black South Africans is that there is life after this revelation. As white South African children we grew up being taught by Dr Mengele and the other Nazi fugitives who made their way to South Africa and masqueraded as apartheid schoolteachers, that we were indeed fortunate products of the *Liebensborn*.<sup>208</sup>

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207XML is a data structure for transferring data between incompatible systems. This book is stored in XML.

208Not quite, very few Nazis came to South Africa. The Nazis created stud-farms called *Liebensborn* ("Fountain of Life") to increase the number of "pure Aryans" among Germans.

When it became obvious to the logical ones among us that this was probably not entirely true, the result was not mayhem. We have gone on to enjoy happy, productive lives as normal members of the human race. Longing after a fantasy African lost world or believing that blackness will give you some advantage in a world of six billion “killer apes”,<sup>209</sup> is as naive as those white kids we left behind in the segregated classroom. Africa is changing into top gear and we are in the driving seat. Our future is outward and forward, not looking down.

In the early nineties, I am putting up election posters for the Pan Africanist Congress in a township, working with another member, Themba. We are discussing the party leadership, which is coming up for reelection. I mention that I have met a few times with Patricia de Lille, a senior party member and Colored woman. In my opinion it would be good to present a woman candidate for election. Themba tells me that it would never work as she is not “indigenous enough”. Clearly Themba and the PAC members have not followed the recent progress of mtDNA in unraveling the human genome. I realized that my chances to be PAC president would probably also fall into the same category. Our party slogan at the time is *One Settler, One Bullet*. Patricia de Lille leaves the party shortly thereafter and my active participation lapses.

When I join the PAC I am one of the few white members. I am years working in the party before I actually meet another white person. White South Africans today will tell you how they were ardent supporters of the struggle in the apartheid years. They might have been, but I certainly never met them. However I am proud of the Khoisan of my generation, half black and half white, who were able to break 350 years of conflict and finally make a working arrangement for South Africa.

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<sup>209</sup> The term incorrectly used by Dart for *Australopithecus*. Dart did not know about *sapiens*' guilty record.

If you are familiar with the character of the Dutch Reformed religion, you will know what a big step it is to question or deny your father's values. For those of us active in the change, it is a great disappointment that the current ANC leadership continues racial classification and their own brand of social eugenics.

It is an anthropological absurdity to judge someone on race. What makes me different from a Zulu is not the color of our skin, but the make-up of our cultures. No one should be prejudged on culture or religion. Zulus have an unfathomable reverence for their ancestors and respect for their elders, while a Settler strikes the father dead and we only really start living when the old man dies. Zulus slaughter cattle in their backyard; I want to throw up when they serve chicken or beef in economy class. Settlerettes want you to send them flowers and chocolates when you are trying to get into their pants, Zulus send their girls meat. Sure we are different, but it ain't in the genes.

US studies show that *certibus paribus*<sup>210</sup> (that is, regarding ability), for the election of a candidate to congress, 90% will accept women, blacks or Jews<sup>211</sup> equally with a WASP (white Anglo-Saxon Protestant). 80% will accept a 7<sup>th</sup> Day Adventist or a homosexual. Only 48% will accept an atheist as an equal candidate! Americans will accept a president that smokes dope, as long as he does not inhale, and one that cheats on his wife, but apologizes to God and has his sins forgiven. We haven't tested this here in South Africa, but I am sure that attitudes would be worse. In my campaign to become president, my whiteness is the least of my problems. I believe brother, I believe, I believe.

South Africans will happily elect those with criminal records, and it seem that people will accept *bitches, spicks, faggots, niggers, dykes, yids* and *malungus*<sup>212</sup> fine, but *atheists* are a road too far.

<sup>210</sup>Latin for all other things being equal.

<sup>211</sup>Refer to *The God Delusion* by Richard Dawkins.

<sup>212</sup>Zulu word for whites, comes from the fluffy foam the sea makes as waves hit the

*My name it means nothing,  
my age it means less.  
The country I come from  
is called the Midwest.  
Oh the country was young then,  
with God on our side.*<sup>213</sup>

If you think I am insensitive or misinformed about racial issues, let me tell you what it is like living as an atheist in South Africa. Racists don't just hate one group, they hate all groups that are not them. The correlation coefficient of racism and religious bigotry limits to one.<sup>214</sup> If you don't like blacks, you certainly don't like gays, Jews, women, foreigners or atheists.

The US white nationalists Stormfront have as their slogan "When you silence the Men of the Word you will have to deal with the Men of the Sword." Racist behavior is usually a "God given" right. Religious tolerance is closely tied to racial attitudes. Even before they speak, racists reveal themselves through their eyes. Meet a perfect stranger and if the conversation has any religious connotation it shows immediately. In minutes he or she will be cussing about some or other racial group. I can tell a racist that I am a scientific realist, but the moment he knows that this means that I do not believe in God, he files me in with Buddhists, Taoists, dialectic materialists, heathens, nihilists, bankrupts, alcoholics or any other godless group that keeps him awake at night. Just the word "atheist" is bad enough to mark me as a "non-believer". I am not a non-believer. I am not even agnostic.

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beach – because white people arrived by sea. Zulus hate swimming, so imagine how they feel about Settlers.

<sup>213</sup>With apologies to Bob Dylan.

<sup>214</sup>Correlation coefficient is Garlton's way of connecting data, in which a correlation of 1 would be a perfect match. A limit is a calculus term for infinitesimally close to.

I have a full philosophy of life, with which I happily wrestle daily. I spend most of my hours, as you would expect from any theologian, critical mostly of my own and not others' religion. I am a contributing critic of atheist and scientific thought. Without self-criticism of what we believe in, how can we possibly advance?

Of course I believe. I just don't believe in the Trinity – an apathetic, diabetic, old man on roller skates with a marked propensity to procrastination and sloth,<sup>215</sup> sending his spooks out to rush around the sky sticking their nose in everybody's business, who has an out-of-control son with holes in his feet and an annoying need to keep cross-dressing-up in their image and going walkabout with his favorite species, the humans, and then go picking fights with the Romans. Similarly, I don't believe in some unseen force operating like dark matter on steroids, controlling the universe, but never revealing itself. I simply don't believe in God in any form that you may wish to package him. You get angry when I call you black instead of African, but you don't see that calling me an atheist is as offensive as calling you a non-white. Brother am I not like you, "Have I not hands, organs, dimensions, senses, affections, passions. If you prick me, do I not bleed? If you tickle me, do I not laugh?"<sup>216</sup>

I have three degrees in applied mathematics and gave up a successful academic career to enter business, where I employed hundreds of people, yet when I talk about God's existence, the racists view me as having some unfortunate mental disorder that is holding me back from the logic of being able to see the light. People that I have known for 20 years pray for me daily that I may be delivered from my state of godlessness. They are convinced that I am somehow unhappy and have a huge void in my life.

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<sup>215</sup>With apologies to Flo and Eddie.

<sup>216</sup>Shylock, the Jew in *The Merchant of Venice*, abridged and modified into the first person.

Can you imagine me praying to my god to deliver you from your blackness so that you could be ultimately happy? “Hi God, it is Philip here. I haven’t asked you for much in life, but please God can you make Siphon less black. I feel so desperately sorry for his predicament. He has this huge burden in life, being black. He is actually a very kind person and does not deserve the fate that your Guys at Intelligent Design have cast for him. Please God open your heart and make him more white!”

It is racist for anyone to put their own culture first. I have been a vegetarian for 30 years. Why do you offer me soya patties in the shape of burgers or sausages? It is like putting zero alcohol beer in green bottles. No, I do not long for meat in any form, ever. I am disgusted by its rotten smell. It is not that something is missing from my life or I am unhappy about eating a salad. I don’t ever want to be a meat-eater. While we may both wish to get into a bit of Christian punyani,<sup>217</sup> you don’t want to be white or vegetarian, whilst I, a fulfilled atheist, do not wish to be anything else.

In South Africa, Gareth Cliff, a Radio DJ, declares himself an atheist and the next moment people are calling in to have him taken off the airwaves, because he might corrupt their children. Others cry out that they feel desperately sorry for this poor fellow, who they automatically assume must be unhappy. Gareth protests that he is actually a happy and fulfilled person who does not need anyone to pray for him. This event makes headline news. He is touted as the first media celebrity to declare his atheist beliefs. In a free country, without prejudice, an atheist would go unnoticed.

The Currie Cup is our local rugby equivalent of the Superbowl. Can you imagine what it is like for someone with my strong convictions to watch a kid from the winning team strip off his kit and jump up onto the goal posts wearing a T shirt saying “Jesus is Lord”.

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<sup>217</sup>A Zulu word for female genitals.

Now I will grant you the right to climb to the highest hill and cry out with joy to your God with all your heart, but not when I am watching sport and please allow me then the full right to get up there with you and scream out that I think it is absolute drivel and that God is little more than a figment of your collective imaginations. When I accept an award, I want to stand up and my speech will say that this award definitely had nothing to do with Jesus. Grant me that liberty, that right, without apology or sympathy. That is tolerance.

Why all this talk of atheism in a book on paleoanthropology? Weren't some of the greatest contributors to paleoanthropology professed Christians? Why not let it alone and let paleoanthropology and Abrahamist religions coexist?

It is historically true that there are strongly religious people who contributed to paleoanthropology, but today it is difficult to find an Abrahamist paleoanthropologist. You will find much politeness. Paleo-anthropologists are as polite about others as they are vociferous about their own. Do not misconstrue their apparent agreement. In the study of human origins you have to earn the right to be abused.

I have no problem with the Abrahamists, only with what they are saying. Conceding to creationism out of politeness would be like conceding to Europeans that *sapiens* do descend from Neanderthals, like agreeing that Lucy is the mother of all *Homo*, like saying that the world is not actually heating up because you don't want to offend Americans or Chinese. It is simply wrong.

Pilgrim, I invited you into this book with no threat to your belief system. You are free to leave at any time. What you are not entitled to do is hang around in the lobby and not take a position. It is very difficult to reconcile creation and evolution. Being polite and sensitive about other people's theology will get you tied up in intellectual knots. Those that choose to walk this path will be derided by Dr Gish on the one side and by Richard Dawkins on the other.

Just as Osama Bin Laden and George Bush take neutrality to be opposition, so do we. Tim White brooks no fool who can't collect bones and Duane Gish despises theological evolutionists. Similarly you get the same disparaging treatment from me if you follow an agnostic line of muddled thinking.

In science we will happily review evidence no matter what the hypothesis; we will change if offered alternatives. But we are offended if people are offered clear proof, have no counterargument, and then faced with an overwhelming body - still reserve judgment.

In South Africa, for a modern government like the ANC to use race to legislate on economic redistribution is not only shocking economics, it is not logically justifiable, given the underlying science. If you have followed this book so far then you have seen the argument that skin color or "race" as some arbitrary assignment is unsupportable. The new eugenicists can just as well use eye color or the ratio of penis length to body mass. Racial policies purport to be a "free and fair" way of redressing apartheid's historical evils. Fixing South Africa's social eugenics has been an ideal means to reward the party members. You don't even need a regression engine to see that the biggest beneficiaries in South African handouts have been the inner party members, who all think it was a fabulous idea. Everyone else on the side looks on and gets really angry about how the Settlers seem to be making out better than them, and how the government is not doing enough to screw up economic optimization.

The new legislation is supposed to redress the advantages that the culture of white men had in our early history. A simple analysis shows that to attach modern South Africans to the crimes of a previous generation is completely unjustifiable, and genetically incorrect. White men are marginally closer to and in some cases even further genetically removed than others from the members of the previous government.

The only true motivation is a racist desire to promote the culture of the promoters over that of others. In a truly nonracial society, why would you care which of your members was successful? This only becomes an issue when viewed through the eye of a racist beholder.

Don't get me wrong, the ANC has made major improvements to South Africa. At least corruption is openly recorded here for everyone to see. Under the old white government, media were banned and controlled and the theft was never reported. The present situation may be neocolonialist racism, but it is a whole lot better than apartheid. You can trust my judgment. It is not because I am white or think that the sooner we get a man back on the English throne, the sooner the world's problems will get sorted out, it is because I have lived approximately half my adult life under Afrikaner domination and half my adult life under Xhosa domination. I am in a good position to make a judgment call as to which was better.

While I have good and bad things to say about them both, it is a no brainer when it comes to making a choice. It is a whole lot better living in South Africa under the Xhosas.

I have four children and I want them to have the best future in South Africa and in this world. I fear that with our current world view, they will always be judged on their race. Our schooling would be a whole lot better if we introduced paleoanthropology at elementary level science. A small understanding of archeology and genetics will show our children the futility of race or skin color as a measurement of difference. We should embrace our joint heritage and be proud to live in the country where modern humans first started. We should know that was a very recent event and that we are more similar than we are different.

I live with a fundamentalist Christian and this, you can imagine, causes some ethical controversy in bringing up our children. I came in on the tail end of a conversation between my wife and our youngest child, who was anxiously asking her what daddy meant by evolution and did we really have ancestors who were apes. She told him not to worry because the apes were only on his father's side of the family.

South Africa now stands at a unique place in history. We are the birthplace of humankind, possibly twice over (*Australopithecus* and then *sapiens*). We should have a serious rethink about how we deal with this. South Africa needs to rewrite its history. Currently we are only discovering just how shortsighted we were to see our history as a white colonial history. We are mistakenly replacing it with a black colonial history.

I am more than sympathetic to black South Africans. I enjoy their company and I wish them a prosperous destiny, one towards which I contribute daily. I have always followed black music, dance and politics. Whenever I travel the world I always find myself moving towards the areas where the black diaspora hang out, they remind me of the way that Africans enjoy life. Sadly, Harlem, Oakland, Notting Hill and New Orleans are not Africa, only a distant echo of it.

Integral to the black African nationalist movement is the promotion of indigenous culture and a desire to return Africa to the spirit of *ubuntu*<sup>218</sup>. As Settlers we accept that our ways are not indigenous culture; so is it with black nationalism. Ubuntu is the way of Abel, a central African concept. The true indigenous South African culture is a very different one. It is the way of the Khoisan. The Khoisan have chosen a very different way to live out the last 350 years, and we would do well to respect that right to be themselves.

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<sup>218</sup>*Ubuntu* is a common African term for "humanity", translated into Yiddish as "menshkeit".

Contrary to what the Afrikaners may joke, the Cape Coloreds have been making themselves for 200 000 years. By now, more than anyone, they should know just how to do it.

There can be no turning back for Africa. We can extract mammoth DNA and breed it into an elephant's womb, open an island zoo for them and give them a seat in parliament, but no more than Germany can undo the holocaust, can we turn back the fact that we murdered them all. The world is not an isolated place that will easily allow pockets of human evolution or culture to form. The Internet and global franchises cannot be stopped. We should not even bother to try. The world we see before us is not some outside force. The *total onslaught* against us is the creation of our own making. The murder of the mammals, the neolithic farming, the expansion of Europe, the export of the slaves, the industrialized division of labor, The Internet, these are all products of Africa. We are all Africans.

The black colonial history is interesting and certainly we want to tell it. We will learn much about ourselves by unraveling the early history of the Negroes, the Pygmies and the Bantu. As Africans, the desire to rewrite the skewed interpretation of white colonial history is strong, but we must temper this enthusiasm, keep our feet on the ground and realize that the black history, iron age and colonial, is echoed in later events. Both these colonial periods are flickers in the real history of the human race, the largest part of which was played out in a single valley of our world, a valley that just happens to be in South Africa.

The recent history of apartheid and particularly the Afrikaners' role in that is going to create an irony that will be difficult to grasp, and will be laughed about for years by the Guys at Intelligent Design. Like they sent Piltdown and the Taung child to confuse us, they also sent us Jan van Riebeeck and Hendrik Verwoerd. They didn't plant them into the fossil beds, they planted them slap into the middle of the Khoisan

gene pool, which is able to take us back the furthest, to our common ancestors. Most people's vision of a South African Afrikaner is an apartheid policeman beating up a black woman with a truncheon. It really is going to be hard to accept that it is these people who are close to the original Beachwalkers, both genetically and by the assimilation of their culture. Before this is resolved, some of us will be working at Intelligent Design ourselves. It is going to take years to sort this out.

Africa is awakening to the fact that over the last 500 years they have taken the brunt of European aggression. There is a new continental pride rising. We all want to drive this new force. However, the first humans are not the West African immigrants, they are the Colored people that inhabit the south-west corner of the continent. This strange anomaly is what we should be conserving. The sites of these people and their artifacts should be classified as World Heritage sites. It is not the contemporary history of later civilizations like Mapangungwe, Magersfonten, Isandlwana and Rorke's Drift<sup>219</sup> that is ultimately important, but the *sapiens* sites in the Southern Cape, which are not only our national treasures, but the family silver of the whole human race.

The assets of the Garden of Eden must be protected like any game park and shares in its ownership must be nurtured like any financial investment. We cannot rely on the external funding of first world countries to fund the scientific research required to reveal this asset. We should be allocating more funds into teaching our people what the Garden of Eden means and how we can be part of growing and protecting it for the coming millions of its children that will make pilgrimages there.

We do not protect these assets, we build golf courses on historic sites, we make no effort to preserve the fish traps and other relics that make up the remains of this history.

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<sup>219</sup>All sites of colonial heroism for various groups in our history.

Once the full implication of the Garden of Eden becomes apparent, we will look on Cape Agulhas and not Jerusalem as the Holy Shrine of God's work. Mossel Bay and not the Tigris Valley is where we stepped out in his own image. South Africans are the custodians of this asset and our responsibilities are not only to South Africa, but to all the people of the world. More than anyone, we should lead a nonracial example that carries the message that we are a modern race, with very few differences and a lot of family similarities.



## Revelations

12<sup>th</sup> October 2007. Al Gore wins the Nobel Prize for his work on climate change. This is for his tireless work in taking up the challenge: “We face a true planetary emergency. The climate crisis is not a political issue, it is a moral and spiritual challenge to all of humanity.” Are we finally recognizing that we are one human race with a joint destiny to be shared equally? Maybe not; Gore is a director of numerous private companies, and has amassed \$100 million in assets since leaving office. He has traveled most of his life by private jet, and unconfirmed reports put his home electricity bill at \$3000 per month. He is also a law-abiding citizen of the world largest carbon emitter and the last significant country to not ratify the Kyoto protocol.

Americans make up 5% of the world’s population and contribute 30% of the global warming. They think that it is a good idea if the rest of us share in reducing our harmful consumption. Ethnocentric thinking is a powerful sociological force.

Where are we going and what does this all mean? If you are still reading this, then you realize that I am not totally crazy and my irreverence for religious and tribal sacraments is born of the logic and revelation of the origin and destiny of *Homo sapiens*. You are now ready for this:

The Beachwalkers were white!

My goodness, the Klu Klux Klan are saddling up and all the black people are fuming and stomping out of the room. Anthropologists and sociologists are still reading, but can’t wait for question time to start screaming at me.

Don't let your own prejudice cloud your judgment. As sure as the Titanic will sink, the DNA evidence will reveal this. The Beachwalkers were lily white. I am not suggesting for a moment that they were a Ryder Haggard-style European lost tribe, merely a light-skinned group looking to pick up as much vitamin D as possible as they scavenged their mesolithic beach.<sup>220</sup>

In my boyhood years, when Africa was still on our doorstep, we would regularly collect chameleons. While it is true that they adjust the color of their skin, they certainly do not change to the color of the surface they are on. If you are a scuba diver and have ever met an octopus under water, you will know this to be even more impressive: an octopus can change color in less than a second, and can match the environment he is in.

We all grew up in an age when skin color was a major factor in the changes of our society. The southern civil rights movement gave us all those '80s TV series with the token black cop. Britain was invaded by millions of darker members of its empire arriving at Heathrow with their British passports. It could be worse, it could have been me arriving at Heathrow, saltpenis in tow, telling you that my sons qualify to play rugby and cricket for England. The largest population group of immigrants to South Africa's are first-generation Africans, escaping the freedom of their own countries for a country still in the grip of apartheid's long arm. These are events of our time. Race is a construction of our modern, misinformed mind.

The poster boy African of today is a dark-skinned West African with a shaven head and sweat on his brow. It is really hard to break the prejudice of this view. The West Africans adapted to the extreme pressure of hard sunlight and merciless attacks by malaria. A black skin was a question of survival. Even in modern times, the immediate descendants of the southern Beachwalkers have pale brown skins.

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<sup>220</sup>Time of the Middle Stone Age.

For most of our time on this planet, Africa has not been like this. It has been a much drier and colder place. In MIS6 a black skin would have been a serious liability.

Humans don't change themselves in seconds, but in an evolutionary sense they are even more flexible. The ability to change skin color gives *Homo* the ability to move all over the world. This ability is not even invented by *sapiens*; the credit for shedding the hair and dropping the tan goes to *erectus*. *Homo erectus* is one of the world's most effective travelers, none of the staying-at-home-with-mum syndrome for him. *Erectus* moves over four continents, through multiple sunny or cold conditions and does so over a period of two million years. Quick changes of skin color is a crucial element in *erectus*' ability to spread.

In the London butterfly world apparently appearance is everything. Standing out from the walls gets you eaten. Butterflies moved from being white, before the smokestack industries, to being black, *in a hundred years*, to being white again once the Londoners changed to banking and computer programming.

Northern Indians are light, southern Indians are dark. Either way, there is no better place than Paddington to get a Tandoori. Polynesians are dark, but their ancestors of just over 1000 years came from Taiwan and are light. Out there in the Pacific you need a tan to stop getting cancer, ozone layer or not.

In cold climates you need to be white to absorb the maximum in vitamin D in the least amount of sunlight. So the first Americans would have been light, the Neanderthals would have been light skinned. Neanderthals were also robust and large. They got this from having fair skin and taking in maximum vitamin D.

Evidence of this is right in front of your eyes. Swedes and Nordics are blond, blue eyed and big. It is no coincidence that the world's strongest man competition is dominated by names like Marius Puginowski or Magnus Magnussen. The Dutch are the tallest nation on earth.

Back to the Garden of Eden 200 000 years ago at the start of the MIS6 Ice Age. It was cold. For around 50 000 years we live in an extended ice age. We are in the Garden of Eden, an isolated population, eating whale meat, encephalising our brains. Whoever survives in this place has got to adapt to the conditions.

Europeans have difficulty picturing Jesus as black. Similarly, it is Afrocentric logic to believe that the Beachwalkers looked like Central Africans or even the San of today. Beachwalkers would be closer to the Inuit or the Northern Japanese, but without the Apple ipods and Nike Shoes. More likely the Beachwalkers would look like the current Teutons of northern Europe, at the very least like the Spaniards of today. Listen carefully, you can hear the umpah band practising for Hitler's birthday.

The Beachwalkers would have lived in a cool but not freezing world, with fluctuating temperatures, like the northern hemisphere. It will not be surprising to find a robust skeleton of an old Beachwalker, and he is likely to be big, not just because the one we find is the local bench press champion of 150 000 years BC. Even the modern San are likely to have had recent white ancestors. For nearly 100 000 years through MIS4 to MIS2, Southern Africa would have been a cold place, most likely with reduced UV exposure.

The ancestors of the San at the LGM are unlikely to have looked like the modern San of today. They would have been suited to the conditions of the LGM. That is the skill of *Homo adaptus*.

We have seen how the true story of the Beachwalkers has been suppressed by various ethnocentric interest groups. Yet this is a story that is not complete. It can still change. There is still much work to be done in all the supporting fields that make up this wonderful subject of paleoanthropology. The naysayers, who think man started on the south side of Chicago, must always be given their chance to speak and put forward their case. If it is logical and backed up, we will listen. That is the democratic strength of the scientific process.

Today Mozambique, Angola and the Congo are suffering from mini-versions of the 20<sup>th</sup> century South African academic boycott. It is a boycott of indifference rather than intention. For the last 50 years these countries have been embroiled in civil war. Politics, funding, local apathy and malaria have kept pale paleoanthropologists out. I look forward to the revelation that their archaeological record should soon throw up. I would be greatly surprised if it did not underwrite my interpretation of events. Under the sand lies the evidence of the hunter gatherers. We need to open up the archaeological digs of Central, South East and South West Africa. Africa's prehistory is not yet written, we will have to write it now. This history belongs to all of us.

Neanderthals have not had their last grunt. They have a weight of EU money behind them. After what happened 35 000 years ago, they have vowed to fight back this time. *Homo heidelbergensis* looms, like Kubrick's slab. *H. heidelbergensis* must move out or move about. For the Southern Garden of Eden to stand unopposed, either we have to lump *heidelbergensis* off the phylogenetic tree, or we have to show how he moved around. Splitters will need a rearguard action with Out of Africa 1.5. There is indeed something distinctly uncomfortable about *H. erectus* going two million years without much change and then bang, suddenly two totally independent brain enlargements that occur almost simultaneously.

We still need to follow the source of the Neanderthal kickstart before I will be finally comfortable with consigning them to a dead end branch along with *Australopithecus robustus*. *Australopithecus robustus* can still offer us an interesting outcome. The change that *robustus* undergoes echoes the change in the build of Neanderthals. Did *Homo*, 2.6 mya, respond to the cold by picking up weight and adding vitamin D?

Three million years ago Africa was having heavy ice ages. It is quite possible that this failed experiment also started in the cold south and *robustus* met his limitations in the tropics in a similar fate to that of the Neanderthals. It could be that fratricide<sup>221</sup> is a longstanding trait of humanity, crafted over millions of years.

History does not repeat itself, but it certainly echoes.<sup>222</sup>

While I feel that the game has run its course on the origins of *Australopithecus*, South Africa may still have some surprises in store for the East Africans. The transition from *Australopithecus* to *Homo* can still be clarified. It is not yet game, set and match as to where *Australopithecus* began. The East African sites do not yield any age advantage over South Africa. We may still show a southern beginning for these creatures. It is, after all, *Australopithecus* and not *Eastralopithicus*.

The written word started about 5000 years ago and paintings, at least the ones that remain, started around 50 000 years ago. In the mapping of our prehistory, the closer we get to modern times the more important becomes the work of the geneticists. The immediate future belongs to them. The study of DNA still has a long way to go.

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<sup>221</sup> Fratricide is obviously the wrong word because neither Neanderthals nor *robustus* were our brothers; at best they were our very distant cousins.

<sup>222</sup> This was said by the famous American author Mark Twain.

The current method of analysis reminds me of computer science 30 years ago. Languages were crude and code was written out in assembler language. There was no object oriented programming. Terminology then was obscure. Current genetics talks in hieroglyphic markers that are not fully understood. Only experts can follow the story. They meet behind closed doors. The rest of us have to wait outside, like the San at the hallucinogenic party until one of the inner circle comes out for relief, where we only get the news second-hand from someone who is already tripping and is holding the paint brush.

Unraveling the genetic network inside African populations will push the science of genetics further than it has gone before. Africa is a complex and much older network than the rest of the world. The relationships are much more difficult to follow. Expect Bayesian genetics to rise as a discipline. The new complex relationships will be solved by software programmers. We are going to need an entourage of supporting technologies. We should be training and financing researchers to develop the databases, algorithms and language interface to make this data easily accessible.

Currently we are “reacting” to the genetic code by taking samples and analyzing what happens. I anticipate a far more active approach will be developed. With the right software we will be able to test scenarios. It will take new calculations to prove that the San moved out of the Garden of Eden 130 000 years ago, evolved into the Pygmies, got blown up by the Toba eruption 70 000 years ago, moved into West Africa, where there they give up their ability to change skin color in favor of dealing with the more immediate threat of malaria, walk out of Africa 60 000 years ago and then go on to take on vampires and matrix machines that have taken over the world.<sup>223</sup> We want to show not only that this happened, but also to prove it on an accurate time-scale.

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<sup>223</sup>A reference to *Blade and the Matrix*.

The information we need is all there lying in the population DNA; what is required is the software to make the extractions and calculate the likelihood functions to prove it. As Africans, we cannot sit back and expect some Bible Belt University funded by an intelligent design benefactor to come up with this for us. It is for Africa to write her own history.

I have spent half the pages of this book telling you that skin color is an unimportant variant. Ironically, tracking MC1R genes may actually help us follow migration. We already have a pretty good understanding of the levels of sunlight in Africa over the last 200 000 years. Once we establish the relationship between UV levels and melanin production and how this is reflected in the genes, we may find information as to how fast and in what direction the Beachwalkers spread out. It will be interesting to compare the MC1R genes of *sapiens* has with those of the Neanderthals. Early researchers got the unlikely inside track on continental drift studying the fossils leavings of the humble trilobite.<sup>224</sup> *Homo erectus* has left much of his story about us in the genetic code. It is going to be a very interesting few years ahead.

The line of questioning around acquiring vitamin D may also throw some light on the origins of Neanderthals. Change in skin color affects the intake of vitamin D. Vitamin D is vital for the production of bone tissue. The changing of bone structure is a much slower process than changing skin color. Neanderthals were big-boned, implying that they had adequate access to vitamin D.

Cro Magnon man was a smaller-boned creature that moved quickly and efficiently into the best properties in bedrock and pushed the Flintstones off the mountain and out onto the cold wind swept flats.<sup>225</sup>

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<sup>224</sup>*Trilobite, Eyewitness to Evolution* by Richard Fortey.

<sup>225</sup>A barb at the Cape Coloreds, who allowed the Afrikaners to relocate them from the beautiful suburbs nestling under Table Mountain out to barren windswept areas known as the Cape Flats.

This may help solve that pesky question of why West Africans run faster than us and why they play better football.

Genetic computing needs a meta-language to make this information directly available to all of us. Just as this book is written in a common XML (extensible markup language) format readable by anyone wanting to alter or reproduce it, we need an XML schema for handling the genetic data. Easy access to data accelerates participation and accelerates knowledge. We need to develop the data structures for handling large datasets and for manipulating limited sets, a kind of spreadsheet for dealing with DNA datasets. Can you picture a world where taking a DNA sample is as simple as doing a blood sugar test and looking it up on Google? What a world that would be to live in, the Technozoic Era.

We now know that we are children of a very recent expansion that is destructive and overwhelming. Recently we have had our attention drawn to our effects on climate change. Personally, on this I am with Richard Leakey; I think that extinction of uncountable numbers of species at our own hands is a far more important threat than global warming. The world has changed climate before, far more dramatically than we anticipate with global warming. Global warming, to me, is not “all of our problem”; it would seem to be first and foremost a first world problem. We should have little confidence in first world politicians solving it for us. 200 000 years of evolution and 300 years of economics is against them.

I meet Al Gore briefly, a few years back, in the latter part of his vice-presidency. I am on my way to Johannesburg Airport, returning to my family in Cape Town for the weekend. Our traffic is stopped and along with 10 000 other Africans I am conscripted to wait at the side of the road for an hour while the highway is cleared to give Al Gore and his ten-car cavalcade a smooth ride to the airport. I miss my flight and the airport is in chaos on that Friday afternoon.

I could leave my TV on for the rest of my life, with my broadband permanently downloading YouTube, and I would not begin to approach the energy that Al Gore wastes in that one afternoon.

This traffic incident has subsequently made it difficult for me to be an Al Gore fan or to fully believe his credibility in the climate change message. It is hard not to view *The Inconvenient Truth* as a convenient publicity machine that generates a lifestyle for a political entourage that has found conventional campaigning unsuccessful. Al Gore is still someone who believes that his Friday afternoon in the traffic is more important than mine.

Al Gore for president? Getting the leading public figure for climate change to run for president is like asking Osama bin Laden to run for Congress or Bill Gates to stand as President of the Open Source Foundation. To ask the president of the United States to work towards reducing climate change is to completely misunderstand the problem or the role of politicians in society. The American people *are* the problem in climate change and their president can be nothing more than an obsequious puppet that panders to the self-interest of an over-indulged political power group. The president's mission is not to change the world, or search for truth, but to get airports named after himself.

Any criticism of the first world way of life is a modern-day heresy and chimes the patriotic bell. Before you take the easy route and run up the red, white and blue and put my passport on the black list, give me a chance to explain myself. I am not anti-American or undemocratic. I am a card-carrying member of the capitalist party.

Humans have been putting themselves at number one for 200 000 years. America is a self-serving electorate that demands primarily that the candidate who gets their vote makes it his primary task to perpetuate their position of privilege. To tackle the climate crisis is to tackle the very people that benefit the most from abusing this system.

Although they are the dominant group, the first world are not the only beneficiaries of environmental abuse, Settlers are right in there with the richest 1% of Africans. We are also a pampered class, but we are more honest about our desires, and like Al Gore, 400 million Americans and a billion of the world's rich, we have absolutely no intention of giving up our privileged positions. We like our 4x4 UVs. We like our jets and jet skis. We like sushi and rapid air travel and I like my electronics. It will take more than melting polar caps or expensive fish to move us. Give this up? It would be easier to persuade Hillary Clinton to do charity work for the Women's League. To stop me using electricity you will have to pry the mouse from my cold blue hand.

White South Africans grew up in apartheid South Africa as beneficiaries of privilege. What this experience teaches us is that people in a position of privilege find it very difficult to relinquish it. Similarly, Africans are not easily convinced of environmental issues. Conservation has never been a part of African culture, because until the recent arrival of the Europeans we were never really destroying it in the first place. No amount of logic or reason is enough to convince people to change. Only once the American people start to brand Al Gore as a traitor to their way of life, will we know that he has finally hit the rubber on the right road.

There is no integrity in asking the other 99% of Africans to make consumer sacrifices while we continue to indulge ourselves. Collectively the American people are 400 million times more responsible for this than an African. They need to sort out global warming themselves first, before selling us the idea.

If Al Gore truly believes in fighting for climate change he will become a lot less popular. What has to be done is not going to be popular. They will deny it today, but in the apartheid period, Nelson Mandela was not popular amongst whites.

Whoever successfully takes up the climate change baton will be truly unpopular with the world's rich consumers and even with the wannabe consumers. An honest statement of the climate position with a full explanation of what Americans will have to sacrifice will never lead to high support polls. *The Inconvenient Truth* may get us the Al Gore International Airport, but they should plan now for extra covered parking. It is going to be a real drag walking to your car in acid rain.

There is an inconvenient truth about *The Inconvenient Truth*. You should not assume that we will all suffer from global warming. London, Tokyo and New York may well be flooded, and Hurricane Katrina may look like a three-club adjustment compared to what is coming.<sup>226</sup> Down here in the Garden of Eden things get better as it gets hotter. For an agricultural society like South Africa, global warming is a boon. Similarly, West African sediments record the African Humid Period or Holocene Thermal Maximum,<sup>227</sup> an interval between 9000 and 6000 years ago, when the Sahara was much wetter due to a strengthening of the African monsoon by changes in summer radiation resulting from long-term variations in the earth's orbit around the sun.

During this period, the desert was dotted with numerous lakes containing typical African lake crocodile and hippopotamus fauna. A curious discovery from the marine sediments is that the transitions into and out of this wet period occurred within decades, not millennia as previously thought.

Even though we were born and forged in an ice age, this would not have been *Homo erectus*' first choice. Encephalisation was the idea of the Guys back at Intelligent Design.

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<sup>226</sup>In golf you adjust your club selection in accordance with the wind.

<sup>227</sup>The average temperature change appears to decline rapidly with latitude so that essentially no change in mean temperature is reported at low and mid latitudes. Tropical reefs tend to show temperature increases of less than 1°C. The southern hemisphere experiences temperatures not unlike those of today.

*Homo erectus* didn't choose to eat fish. It was thrust onto his plate and unless he ate it, there was no pudding. The first exodus out of Eden 130 000 years ago was in a hot period, not an ice age. The San are a product of good times. If it had been cold, we would have stayed home in bed for another 10 000 years. Southern Africa blooms with heat. As it gets hotter, the rain increases. Those hurricanes that are hassling the Gulf are actually bringing us higher rainfall than we have ever had in modern times. In my youth we never had the winter thunderstorms that are now regular showers of joy in Johannesburg.

Al Gore, if you want to save us from global warming sort, it out at home first. Lead by example. Give up the private jet, any air travel, big house, computers, electronics, cold beer. Not so easy is it? You will need to denationalize yourself and certainly not put the interests of the "American People" and your first world allies before the other five billion on the planet. First step would be to not assume that your Friday afternoon is more important than ours.

Where does this leave us, the six billion hungry monkeys? We come from a white tribe started in South Africa 200 000 years, bred into the San and then into the Africans of today. We walked out of Africa 60 000 years ago leaving six billion descendants with single mitochondrial mothers and returned 350 years ago to render unspeakable terrors and hardships on the descendants of the very people from which we came. We have destroyed the world before us and irreparably changed the history of our planet.

Like the home town fans, we still believe that humans are a beautiful race. Like the Grand Dragon of the Klu Klux Klan we believe the problem starts with any other race but us. There are no "other" races and the finger is pointed directly at each of us. The wave of destruction is not something recent that was invented by the industrial age, although that has accelerated it.

Humans have been killing and littering since we arrived. Understanding our destructive nature, pleading guilty to the charge and offering to go into rehab is the first step to healing this process.

For the Europeans, and your close cousins, the Native Americans, Chinese and Native Australasians, you have been misled about your true ancestry. Firstly you are close family with an enormous group of 5.5 billion people, who came from a very narrow group that left Africa no more than 80 000 years ago. That makes you a special part in the history of human origins. No matter how different you may look superficially, you are all very much from the same family, and have been doing it with your sisters for the last 60 000 years. Notwithstanding what you have been taught at school or hear in church, Africa is very much a part of your personal history. Africa may be a mysterious and forbidding place to you, but this is only misinformation. Your ancestors left here only a short while ago. Just as I still retain an interest in England and Jewish Germany, you should all have a strong interest in Africa. We should respect Africa for this heritage. This is the continent that is the mother of all of us.

For those of us living in South Africa today, we stand indeed at a privileged part of history. We are a special generation that can do special things. We have already proved that we can turn around 350 years of confrontational colonial history. The peaceful liberation of South Africa is a good front nine, coming down the back nine and our current objective should be tackling the problem of saving the species around us that can still be saved. It is time to think globally, and act locally. The opportunity is to turn against 200 000 years of history at two seconds to twelve, even as the pumpkin skins starts moving over the sides of the carriage, and do something that no one before us has managed to do, look after species other than those that immediately benefit us.

I have taken a few cheap shots at Richard Leakey, but that's just barroom banter. It was a proud moment for me to see a fellow Settler pass the flame to Daniel Arap Moi to torch millions of dollars-worth of ivory, a message to the world that Africa will no longer trade its birthright. It sets a beacon for Africans of all tribes to follow.

Human self-interest is a powerful enemy, ask the president of the Dead Mammoths Society. Most people and groups will not be with us in a quest to save species. There will be counter-arguments to save jobs and preserve primitive cultures. Logic is no weapon in this. We have been hunting abalone, *Haliotis midae*, in the Garden of Eden for 200 000 years.

As children we would collect the beautiful silver shells. For the first time in human history, the perlemoen<sup>228</sup> no longer wash the shells of their dead onto the beach. We have shucked them to near extinction. As we have got closer to the collapse point, the price for "white gold" has risen. Our Department of Fisheries has requested a blanket ban on all further removal to prevent the extinction. There is a pressure group of subsistence fishermen loudly arguing that this ban is taking away their livelihoods. The logic that there is no livelihood, as they have already destroyed it themselves by overfishing the resource, is lost in the self-serving shouting. They are adamant in their self-righteous desire to continue to rape the commons. Abalone don't vote, it is up to us to represent them. There are many species in Africa needing this help. A start would be for each African to adopt at least one species and work for the conservation of that species.

For South Africans, the majority of you are under the age of sixteen and cannot remember 20<sup>th</sup> century South African madness. You were not born when Nelson Mandela was freed. Be proud that you are part of the Bantu tradition that has been one of the most successful expansions of humanity, and even prouder that it has been an

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<sup>228</sup>*Perlemoen* is Afrikaans for this species found off the coast of the Southern Cape

expansion with little of the slaughter associated with the sons of Cain in the rest of the world. However some of your leaders seem hell-bent on a following a new racist agenda in Africa. Do not follow them there. It will only lead to weakness. You are no better than those nineteenth century British prigs if you believe that your culture is the core African culture. The archaeological record shows otherwise. Pushing the black African culture through its last frontier, the Southern Cape, is not overdue justice, it is colonialism no better than that of the the Portuguese. You may not like the culture of the Coloreds and Afrikaners and you may even be particularly repulsed by how they have chosen to evolve it. You should look to yourself to see perversion of culture. It is almost comical to watch your practice of a religion steeped in European traditions, praying to the son of someone else's European god. At least ancestor worship has some grounding in reality. I, along with most English Settlers, reject the European Christian religion of my forefathers, you suckle on it. Which one of us is more African?

Black South Africans should recognize the right of other tribes in Africa, as their right to be here is no less than your own, and in South Africa this precedes your ancestors' presence by thousands of years.

Just as you wish to exercise the ritual of animal slaughter in domestic environments, I wish to stop you. Settlers don't like ancestor worship, we are happy to build golf courses on the top of the birthplace of mankind. Before I play, I like to go hit some practice balls at the range, I don't like to spend my time clapping hands and circling a tree, waiting for the second coming, or warming God up to help control my slice. I like to tee off and hack my way through precious archaeological treasures because I can't keep my ball on the fairway. If you can tolerate me, you are well on your way to universal non-racialism. And yes, I may still want to run for president. I am counting on you to vote with your head and not your melanin.

The San and your extended surrounding tribes that share your genetic pool should stop being so sensitive. Yes it is fantastic that you live an old-fashioned way and don't have to fill out tax returns, but then so do the Amish. However your culture is no more precious than mine. Your culture is almost as far removed from the original Beachwalkers as that of the Afrikaners. Your way of life branched from the Beachwalkers 130 000 years ago and ours 60 000 years ago. Not that big a deal. You should not believe that your hunter gatherer lifestyle with your meat-based diet is that much closer to the Beachwalkers' than mine. Similarly you have no more right to racial sensitivity than the rest of us. I am an Internet hunter gatherer and I never eat meat. I live in the Garden of Eden, it just so happens to have buildings and highways now. I have the same mitochondrial mother as you. I am not sure how you are any more ancient or closer to early man than I am.

The Cape Coloreds and Afrikaners are the closest geographical descendants of the Beachwalkers. Does this make them any closer to the Beachwalkers than us? I think not. This is not Einstein's special relativity, where one child goes away in a space ship to another star, travelling at near the speed of light, and comes back younger. Just because one child stays at home in the Cape with mom and the other walks 40 000 kms around the world and comes back by boat, does not make us Settlers any further from the original Beachwalkers. We are still both 8000 generations away from mitochondrial Eve. We have proved with the production of five million Coloreds and Afrikaners that we are still very much the same species, the same family. We seem to have landed in the same ecological boat and water is definitely seeping in at the cracks.

For those of you who are Cape Coloreds and Afrikaners, it is time to seriously reevaluate who you are and where you fit into the human race.

The Guys at Intelligent Design dealt Coloreds the strangest card of all. The rest of us so desperately want to be the source of humankind that we will drop fake skulls into pits in Sussex and clamber over others to claim our long line of ancestors. You who are the guardians of our human origins will do everything to get away from your link to the Garden of Eden. You would rather pretend to be the children of some middle- to lower-class Dutch merchants than admit and live out your genetic heritage. You bay at the moon in religious fundamentalist rituals that deny your true origins and have you believe that your ancestors began somewhere else. The Guys at Intelligent Design sure have a sense of humor.

Cape Coloreds are the guardians of the Beachwalkers, who expanded their empire for 200 000 years and reversed it in the last 1000. Your own children are the barbarians are at the gate. For your culture this is Stalingrad.<sup>229</sup> If it is Stalingrad for Khoisan culture, it is Stalingrad for all of ours, because you are the last and closest genetic and archaeological record that we have. Lose this battle and we lose all contact with our origins. The Bantu pushed the Khoisan all the way from Kenya back to the Cape. The Dutch overran the Khoisan with their religion and their language. The current neo-colonial policies of the black majority in South Africa will have you step down and in the name of promoting “indigenous” culture will have us all become more “African”.

My tribe, the Settlers, also put the boot in. We move into the Cape and build golf courses. We have little reverence for this heritage. Settlers may be small in number but we are the most vicious in our habits. I am the grand dragon of them all. I live in the highest house on Table Mountain, the most precious mountain in the world, and holiday in a house slapped straight on top of one of the last remnants of the Garden of Eden. I drive a 4x4 to go fishing on the beach and

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<sup>229</sup>Stalingrad is accepted as the battle that turned the tide of the Second World War.

when I am finished doing that that I rip a jet ski over the top of the earliest sites of man. Getting and spending, I lay waste to the planet with as much fervor as Al Gore flying to his next meeting. The highlight of my life is not finding a hand axe that Beachwalkers have left in the bunker, my highlight is seeing a man about a dog, with Jack Nicklaus in the same sand.

Instead of making a shrine to our ancestors in the Garden of Eden, I am more interested in breaking 80 by drawing my six iron in over the top of the apple tree.

*The world is too much with us; late and soon  
Getting and spending, we lay waste our powers;  
Little we see in Nature that is ours;  
We have given our hearts away, a sordid boon!*<sup>230</sup>

The time has come for all humans to see that our differences are skin deep. The technologies that we have created have made the world a smaller place and the challenges facing us face us all. With our 1400 cc of second favorite organ we will create solutions – solutions for all of us. One of the few friends I made when I moved to the Cape is a Colored. He laughs when we talk about good-looking women and race issues. He says that one day we will all be a race of Coloreds. Paleoanthropologically we already are, all Coloreds, the children of God's First Fishermen.

*IsiQala!*<sup>231</sup>

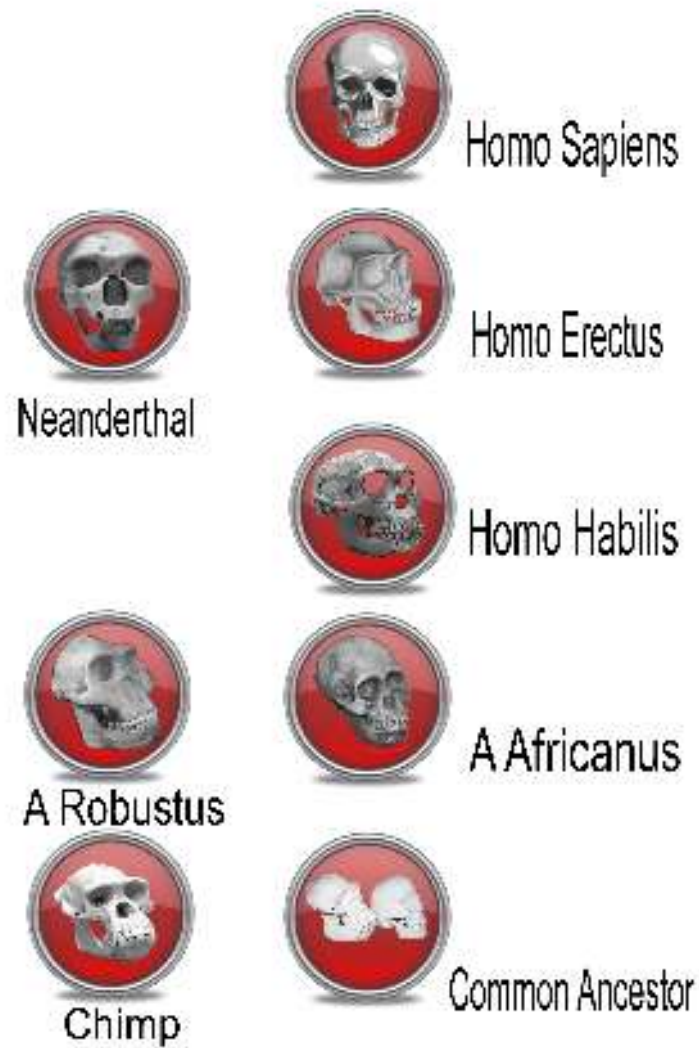
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<sup>230</sup>William Wordsworth

<sup>231</sup>Zulu for "it begins us".







The Lumpers Tree. We are not really interested in Bone Collectors Anatomy, but rather in function like bipedalism, hand use, adaptability, encephalisation. A few side branches have limited success.

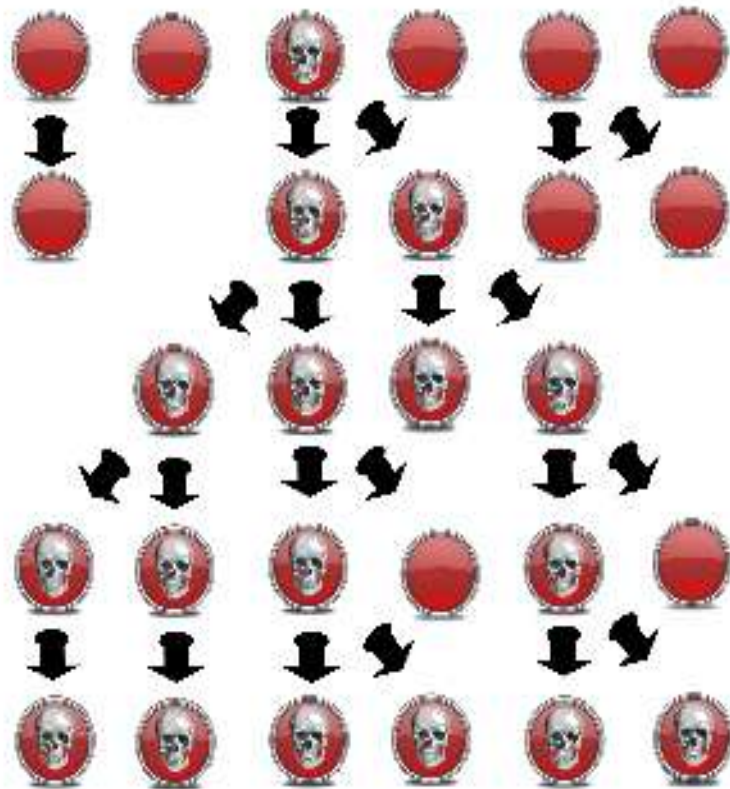


A map drawn up by a supporter of the Antecessor project. Modern man just “seeps” out of the ether, from some unspecified, possibly Asian source. Don't you just love the Ethnocentric thinking. Note how Spain suddenly takes up a central position. You will meet a lot of this kind of logic in Paleoanthropology.

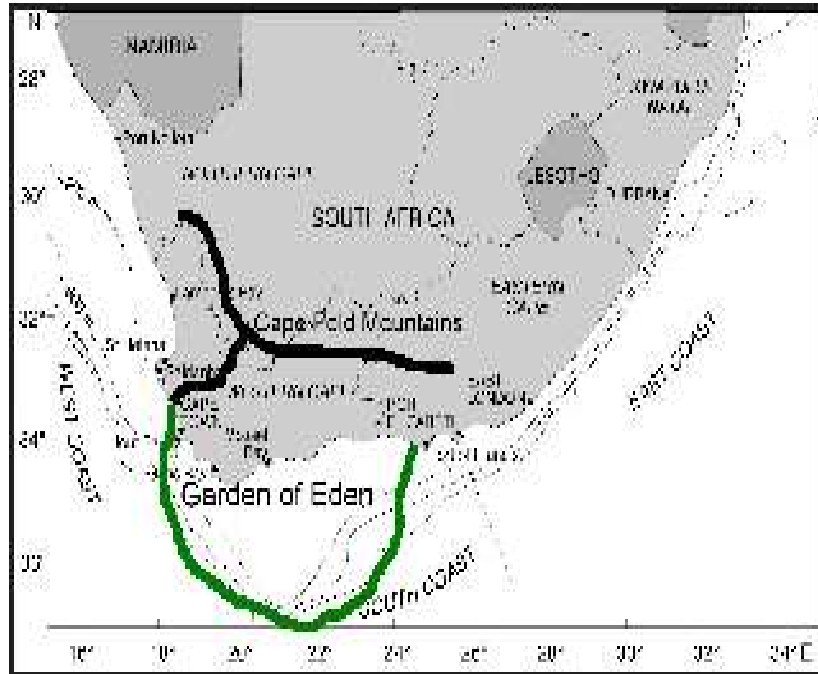


Mitochondrial DNA is measured through markers. These are 50 Plus key markers that indicate Tribe. The total DNA record runs to hundreds of Millions.

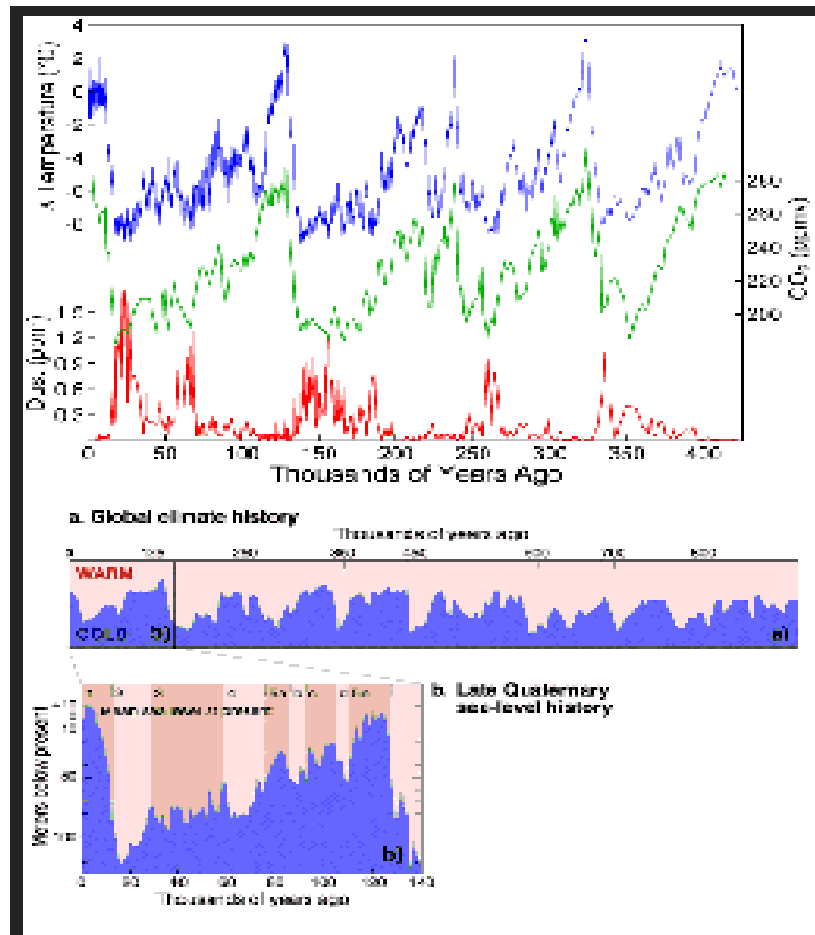
In Africa L0, L1,L2 and L3 haplotypes are key to determining the age of a given group.





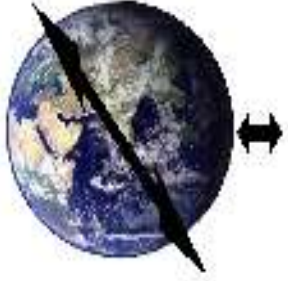
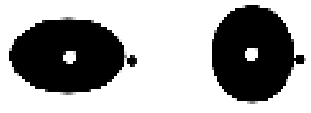
Mitochondrial DNA is inherited only from mothers. Men, women who have no children and women who only have sons, drop off the mitochondrial phylogenetic tree. Eventually every member of the species has a common female ancestor.



The continental shelf of Africa extends normally only a few kilometers off the coast. Off Cape Agulhas and particularly off Mossel Bay this extend as much as 200 kilometers. This is caused by Africa leaving a “trail” behind it as it drifts North, much as a snail leaves slime on the floor. During Ice Ages the sea level drops and this fertile sea bed is revealed. Currently we are in a warm period and the sea levels are high. The main evidence of the Beachwalkers lies under the Ocean. The area between the coast line and the Cape Fold mountains is a sealed off, an isolated Valley.

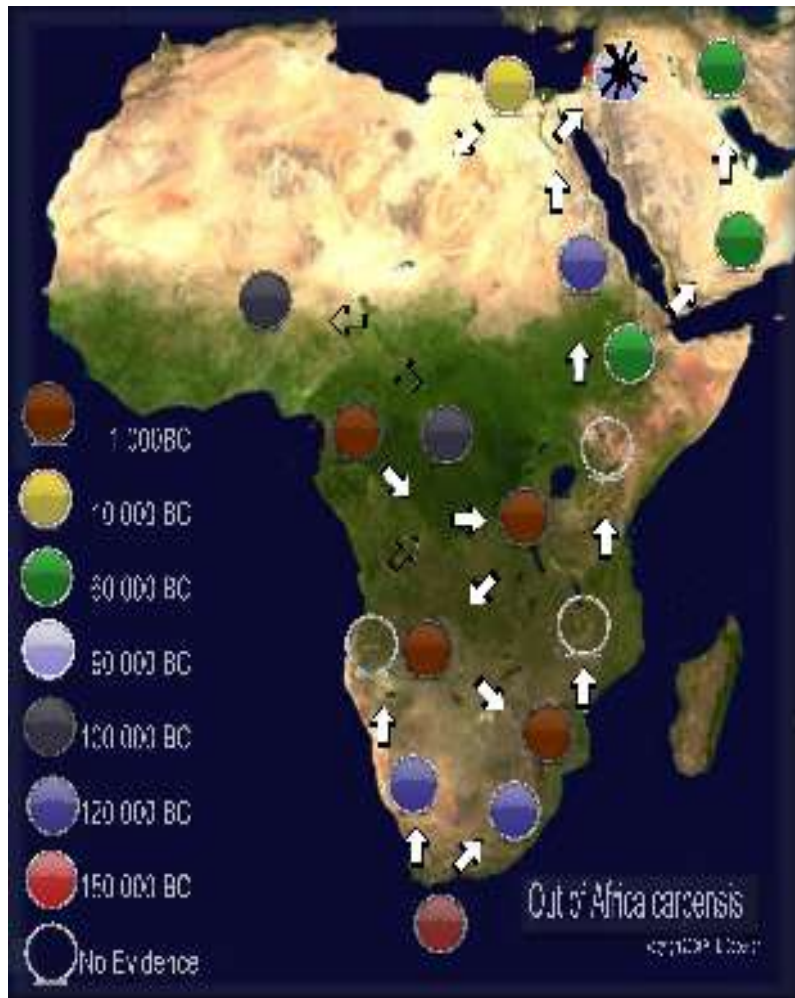


Past mapping of sea level data is accurately correlated from a number of sources. The Vostok Ice Core samples show the fluctuation temperature and change in CO<sub>2</sub> levels. The lower illustration is the level of the sea relative to modern times. The periods of ice age are broken up according to Marine Isotope Samples. MIS 1 is the earliest period and MIS6 was from 130 000 to 190 000 years ago.

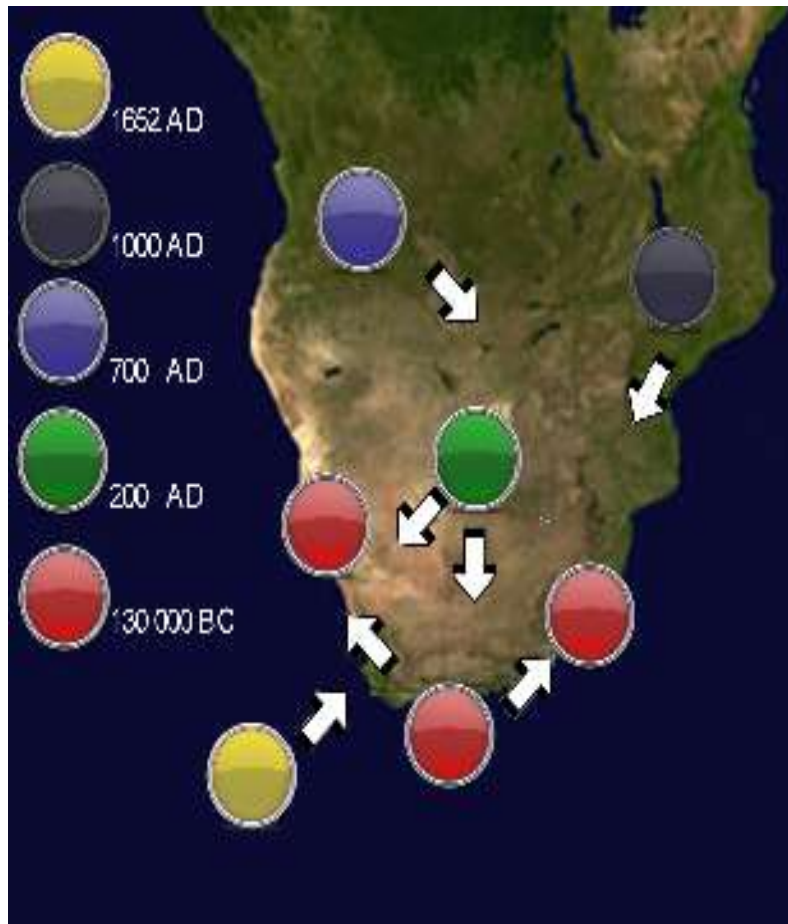
	<p><i>Precession</i> is the change in the direction of the Earth's axis of rotation relative to the fixed stars,</p> <p>Milankovitch cycles are caused by the combined movement of the Earth's Axis in different cycles.</p>
	<p><i>Obliquity</i> of axial tilt varies between 21.5 degrees and 24.5 degrees.</p> <p>Milankovitch cycles are not thought to actually cause Ice Ages, but rather only to modify the depth of them. It is argued that cooler Northern summers bring on ice ages, as the previous winter's ice is not melted.</p>
	 <p><b>Eccentricity</b> is a measure of the</p>



Graphical illustration of the *Out of Africa carpensis* . Shows the DNA markers used to track movement. Once again ethnocentrism raises its head. You have to believe that this map was originally proposed by an American geneticist. Groups A,B,C and D are found in the Eastern United States. The original gene from Africa, L1,L2 and L3 are added later, as an afterthought.



**Out of Africa caracensis** : Homo Sapiens originates in a narrow valley of the Southern Cape 200 000 BC. Beachwalkers leave the Garden of Eden 120 000 BC. Able goes up west coast and adapts into Pygmies and Negroes. Cain goes up east coast. First excursion into Israel goes extinct. 60000 BC, killer ape leaves Africa, murders all before him. 10 000 BC returns bring cattle and agriculture. 1000 BC Bantu use agriculture to push Khoisan back South.



The Beachwalkers leave the Garden of Eden 130 000 years ago. The Children of Cain leave up the East Coast. The Children of Abel leave up the West Coast.

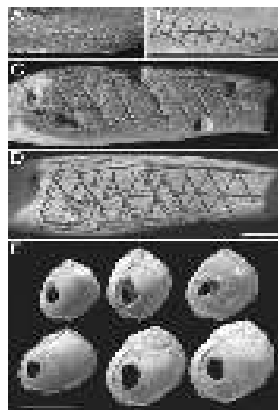
200 AD The Khoi pick up herding from the Bantu pressing southwards. The Khoi move west with goats and South with cattle.

700 AD the Bantu arrive, the Kalundu tradition from the West and the Urewe tradition from the East.

1652 the Dutch arrive at the Cape



Fish traps laid out by Khoi. It is not yet known to what extent these go back in the past history of the Beachwalkers.



Samples collected by Chris Henshilwood in the Blombos Cave. This dates the making of jewelry back to 70 000 years ago. This currently stands as the earliest form of artwork known to man.



French anatomists George Cluver's illustrations of Khoi female genitalia.



If the Garden of Eden was determined by finding the most beautiful place in the world, this would be it. This 14 Km diameter atoll in the Indian Ocean is completely submerged at high tide and reveals a shallow inner lagoon at low tide. The effect at low tide is of a fountain of water pouring back out into the sea. It is hundreds of kilometers away from the main land and the marine life both inside the lagoon and on the steep outer slopes is absolutely mind boggling. It drops away to 3000 meters in the space of a few hundred meters.

It is also relevant to our story, because the early Beachwalkers used a microversion of this formation, visvuige or fishtraps, to trap fish using the tides. Bassas da India is a French protectorate and is the most remote place that I have been to. Subsequently to my trip there the French Government has now banned human visits. I feel privileged to have dived this atoll.



The Garden of Eden as the Europeans offer it to us, an Apple Orchard probably somewhere in modern day Iraq.

Osama Bin Laden is rumored to have his hideout there.

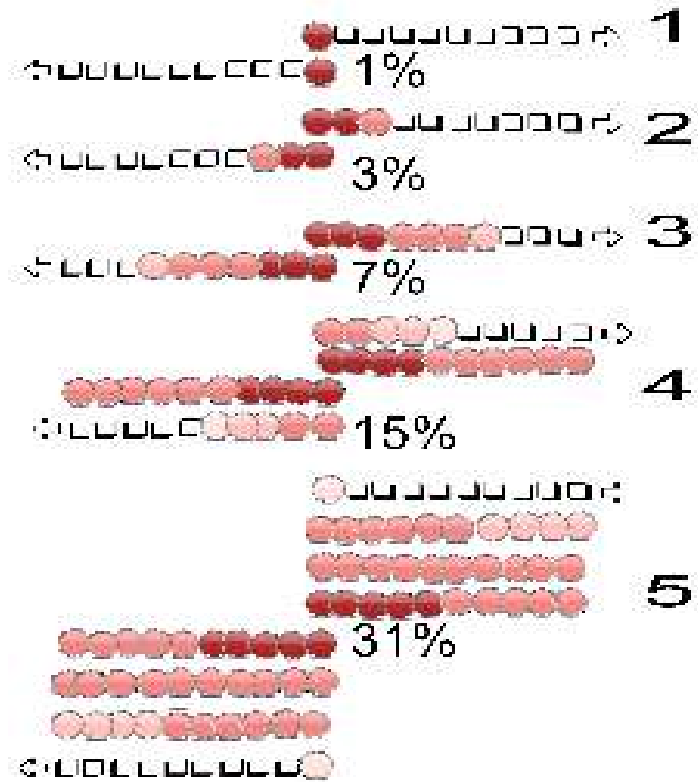


The Garden of Eden as the East Africans would have us believe it. This was more or less how Ethiopia would have looked 200 000 years ago in MIS6. It would have been easier to find a mechanic then.

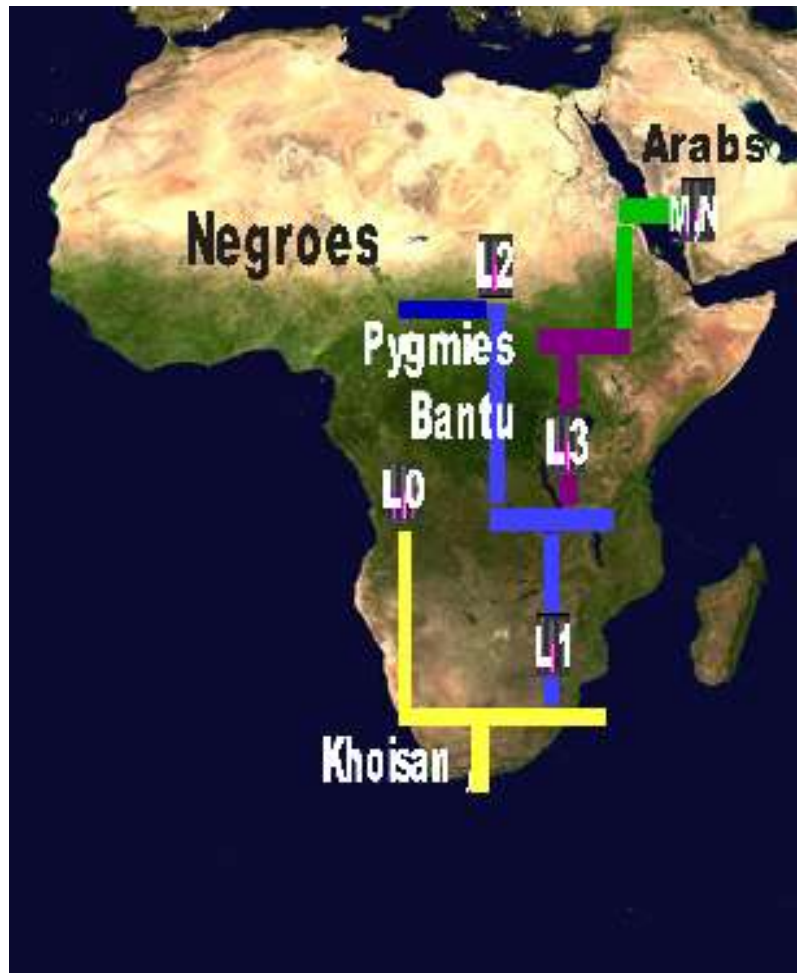


The Garden of Eden as I propose it, in Mossel Bay. 200 000 years ago this would have been one of very few places on the dry, cold continent of Africa where man could have survived.

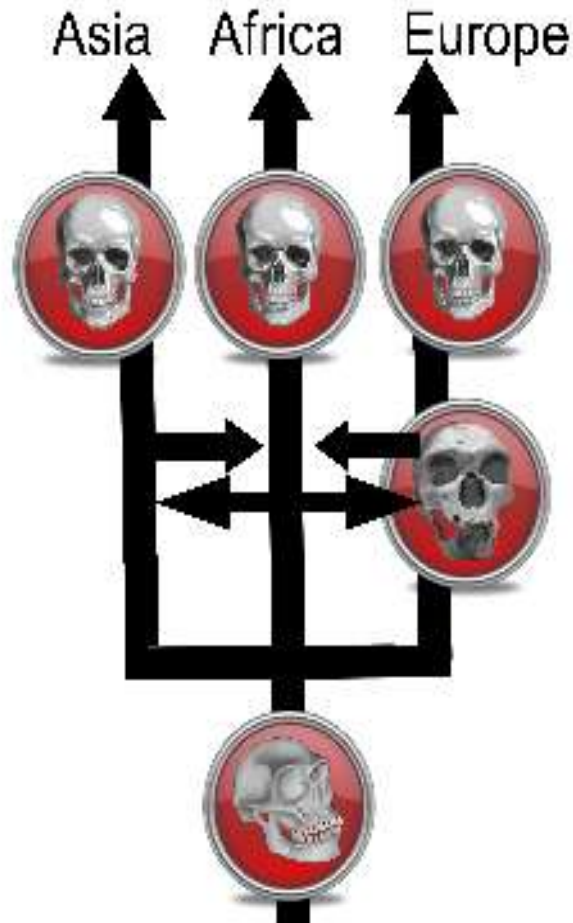
You choose which is most plausible.



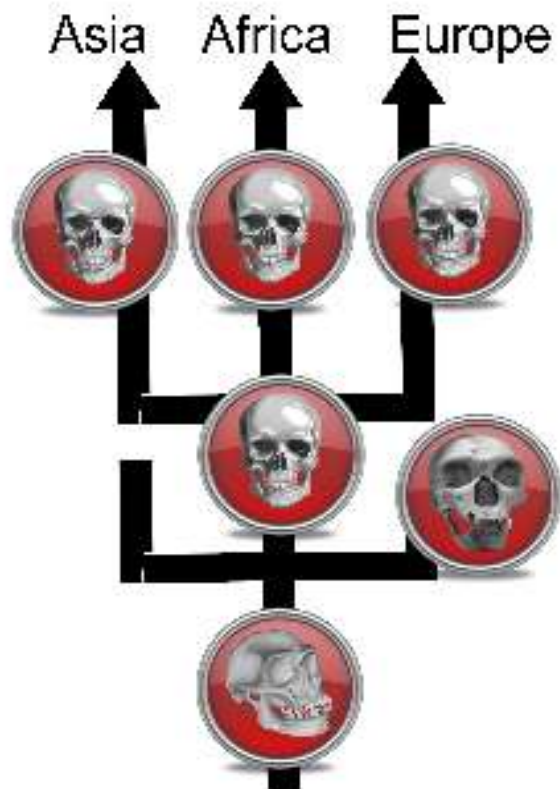
A simplified model if two races meet and 1% mix per generation. After 1 generation 1% is mixed. After 2 generations, another 1% plus the first 1% mix, so 3% is mixed. After 3 generations another 1% plus the 3% mix so 7% is mixed. After 4 generations 15% is mixed and after 5 generations 31% is mixed. Can you see where this is going? South Africans have been mixing with Colonials for 14 generations. They have been mixing with Bantu for over 30 generations. I tell ya, we ain't no Rainbow Nation. We are a mixed Nation of Coloreds. Similarly the Americans have a similar racial history as ours, they will too will be a mixed Afro European race.



Using Lumper mentality, and Settler nomenclature, I have summarized the data from 2000+ African tribes into 5 groups. From Mitochondrial DNA, I have aggregated hundreds of haplogroups into L0, L1, L2 and L3. Then I make some broad and sweeping statements: Khoisan and Pygmy's are oldest, Bantu are recent descendants of Negroes, Arabs are Europeans. Khoisan have the greatest likelihood of being the oldest Tribe in Africa.



**Multiregionalists Theory:** Homo Erectus moves out of Africa about 1,5 Million years ago and evolves gradually over 3 continents, interbreeding continually. Erectus evolves into Heidelbergensis and Neanderthalensis and breeds into the evolving population of Sapiens. This is supported by Eurocentrics, English Marxists, German Tour Guides, French Eugenicists and Researchers with grants from Spanish Universities.



**Out of Africa 2 Theory:** Homo Erectus leaves Africa 1.5 Million years ago. Erectus evolves into Heidelbergensis and then into Neanderthalensis. In a blinding flash, 200 000 years ago, Homo Sapiens evolves exclusive in Africa, leaves between 60 000 to 80000 years ago, and in a Blitzkrieg of gluttony and sin, eats murders and destroys everything before him. In particular Sapiens kicks Neanderthals off the Tree and into touch. This theory is supported by the Author, Social Darwinists, South African Tour Guides, Creationists and proponents of Intelligent Design.



Cave 13B at Pinnacle Point is one of several caves along the coastline of Pinnacle Point, a sea cliff on the south coast of South Africa. Researchers here uncovered evidence of early human use of shellfish and other marine resources dating to the Middle Pleistocene. The cave is the focus of intense excavation work since 2000.



Whale bones typically are too large for people to carry long distances to archaeological sites. Early humans carried only the skin and blubber. Turns out there are barnacle species that only live on the skin of whales. When people scavenged a beached whale and ate it, all that remained was the barnacle as a sign that says, "a whale was eaten here 164,000 years ago!"



Researchers found 57 pieces of pigment or substances used as coloring agents in a cave along the Pinnacle Point cliff face near Mossel Bay, South Africa. Most of the pigments have a pinkish-brown or reddish-brown surface color and are estimated to be about 164,000 years old.

Pictures from [www.nsf.com](http://www.nsf.com) : *South African Coast Paleoclimate, Paleoenvironment, Paleoecology, Paleoanthropology Project (SACP4), Arizona State University, Director - Curtis W. Marean*

## Web References

**[www.ideacenter.org](http://www.ideacenter.org)**

I love this site. It is the best exposition of intelligent design and a beautiful and logically presented argument for breaking the bond between humans and apes. A great first step for a fundamentalist.

**[www.bradshawfoundation.com](http://www.bradshawfoundation.com)**

Geneticist Stephen Oppenheimer hosts a wonderful multimedia presentation of Out of Africa 2. He glosses over the period prior to 100 000 years ago, but that's why you have *God's First Fishermen* .

**[www.heretical.com](http://www.heretical.com)**

Here is a collection of delightful papers that deal with all the questions you wanted to know about human sexuality but were too afraid to ask.

**[www.wikipedia.org](http://www.wikipedia.org)**

This is a free entry encyclopedia website that has thousands of contributors. There are many contributions on this site. Any term that you do not know or recognize in this test will usually come up in a search on Wikipedia.

**[www.aquaticape.org](http://www.aquaticape.org)**

This is a well-written argument against the evolutionary input of man in the sea. It has many arguments that are relevant to the Out of Africa *carpensis*.

**[www.google.com](http://www.google.com)**

This popular search engine has been very useful to me in crosschecking references. Any term that you find confusing here, type it in and pages spew forth explaining the terminology and who supports it.

**[www.familytreedna.com](http://www.familytreedna.com)**

A market leader on DNA testing. They offer services targeted at the US market to place you in the proximity of your genetic history.

**[www.stormfront.org](http://www.stormfront.org)**

Hilarious, Borat-like arguments. A white nationalist site that trashes the Out of Africa theory. They call us the “PCs”, the politically correct. Seem like the biggest supporters of multiregionalism left.

**[www.penissizedebate.com](http://www.penissizedebate.com)**

Fifty-six pages of frank and practical help for all guys who feel that their member may err on the the small side. That’s the good news; the bad news is that it really does matter.

**[www.anthropology.net](http://www.anthropology.net)**

A well written popularization of anthropology, written for the serious reader. Quick and up to date.

**[www.plosgenetics.org](http://www.plosgenetics.org)**

An open access journal published by the Library of Science. Articles are a bit heavy for the non-specialist, but are all freely available.

**[www.templeton.org](http://www.templeton.org)**

This site has some really good articles; however, they are biased to the creationist viewpoint. Still, an interesting resource.

# Bibliography

## Primary reading

*The Dawn of Man*, 1965, Christopher Copeman. Transcripts of a radio series on Early Man

*Dart, Taung and the Missing Link*, Phillip Tobias. An early booklet giving the Taung tale.

*The Prehistory of Africa*, 2006, Himla Soodyal et al. A collection of recent research featuring some of the world's experts on human prehistory.

*In the Footsteps of Eve*, Lee R. Berger and Brett Hilton-Barber. A modern summary of the South African paleoanthropological record by the captain of the South African paleoanthropology team and our best journalist on the subject.

*The Cradle of Humankind, a Field Guide*, 2004, Brett Hilton-Barber and Lee Berger. A detailed description of the species categorized in the Sterkfontein area

*From Lucy to Language*, Donald Johanson. A beautifully illustrated book of all the significant bone material.

*Life Etched in Stone*, Colin McCrae. A comprehensive guide to the geology and fossil history of South Africa.

*African Exodus*, Chris Stringer and Robin McKie. An anthropologist's full explanation of Out of Africa 2.

*Out of Eden*, Stephen Oppenheimer, A geneticist's full explanation of Out of Africa 2.

*The Seven Daughters of Eve*, Bryan Sykes. Covers the European genetics of the Holocene period.

*The Warfare of Theology and Science in Christendom*, Andrew White. A 19<sup>th</sup> century work detailing the perversion of truth by the Catholic and Protestant Churches and how science won a hard bloody battle to be heard.

*The God Delusion*, 2007, Richard Dawkins. A clear description of how religious dogma has clouded our recent intellectual thinking.

*Why I am not a Muslim*, Isbaq Abal. A lurid account of the downside of my third least favorite religion, after Christianity and Judaism.

*Trilobite, Eye Witness to Evolution*, Richard Fortey. An account of one of the most successful species ever, and how their 300-million-year fossil history plots the movement of continental drift.

*Guns, Germs and Steel*, Jared Diamond. An account of early history and how races clashed when confronting each other.

*Origins Revisited*, Richard Leakey. The exciting story of East African paleoanthropology told by its greatest son.

*My Traitor's Heart*, Riaan Malan. A fair account of the apartheid period in South Africa by a fellow classmate from Blairgowrie Primary School.

*The Sixth Extinction*, Richard Leakey. A history of extinction and thoughts on how we can control and manage the current one.

*The Origin of Life*, Paul Davies. A thought-provoking book on what we are and how we got here, sure to alter your self-perception.

*Slave Species of God*, Michael Tellinger. If *God's First Fishermen* is simply too much for you, consider a more relaxed alternative to human origins written by a personal friend.

*God's First Love*, Frederich Heer, An account of 2000 years of prejudice against the Jewish people. A must read for those who don't like other races.

*How can Man die Better, The Life of Robert Sobukwe*, Benjamin Pogrand. A Settler's view on African Nationalism and one of our greatest sons.

*I am an African*, Ngila Muendane, A modern summary of what it means to be an African and a positive message for our future.

*The First Human*, Ann Gibbons, A modern account of the state of play of East African paleoanthropology.

*The Child's Guide to Evolution*, The Jehovah Witness Watch Tower. A spirited forerunner to the concept of Intelligent Design. Easy to read and made for simple minds.

*A Brief History of Almost Everything*, Bill Bryson. A beginner's guide to Earth Sciences.

*The Scramble for Africa*, Thomas Peckham. A comprehensive guide to the colonial history of Africa. An insight into how this shaped our vision of the dark continent.

*The Descent of Y*, Steven Jones. An introduction to human genetics and why the female line is of primary importance.

*Super Crunchers, How anything can be predicted*. Ian Ayres, An easy reading guide to applied statistics and computing.

*After the Ice*, Steven Mithen. A comprehensive guide to global prehistory

### **Other reading**

In Search of the Double Helix, The Blind Watchmaker, The Ancestor's Tale, The King James Bible, The Glorious Koran, The Washing of the Spears, Frontier – The Tragedy of the Xhosa Nation, Freakanomics, Snowball Earth, Genes, Peoples and Languages, T. Rex and the Search for the Crater of Doom, Early Christian Origins, The Complete Works of William Shakespeare, Christ and the End of Meaning, Java Man, Mammoth Giants of the Ice Age, On The Wealth of Nations, The Language of God, Reality- a beginner guide, The Black Swan, Deep Ancestry.

**God's First Fishermen**

This is the remarkable tale of how a humble tribe of Beachwalkers conquers the World. Philip Copeman follows the history of early man from his humble beginnings in Southern Africa, to the six billion strong colossus that we are today. Written in an approachable and satirical style, Copeman holds no reverence for tribal and religious sensitivities and brings a fresh cutting edge approach to paleoanthropology. He holds no punches and storms into racial politics where others fear to tread.

Unlike other writers on this subject, Philip Copeman invites Jews, Christians and Muslims into the scientific debate and uses the Intelligent Design model of evolution to elaborate on the void that exists between atheists and Abrahamists.

God's First Fishermen focuses on the South African contribution to human origins. It follows the young science of paleoanthropology over the last 150 years and shows why the true story of Out of Africa *carpensis* has been suppressed by ethnocentric thinking that has tried in vain to place the first man in a Middle Eastern Garden of Eden or a European Ice Cave.

God's First Fishermen traces the history of an empire that has stood for 200 000 years and is still dominant in the world today. However, at Evolution's Fairytale Ball, the clock has struck 12 and the pumpkin skin is already covering the carriage door. We are left with the reality of a single future for humanity and some unexpected conclusions about the origins of our species.

**Philip Copeman**

Philip Copeman has had a lifelong interest in science. He followed this story in Johannesburg for 40 years. For the last ten years he has lived in Cape Town. Copeman is a trained mathematical economist and began an academic career at the University of the Witwatersrand and the University of Johannesburg. He was involved in the earliest models of the South African and world economies.

Copeman has since run a successful career in software development and is the original creator of the TurboCAD program. He is currently project leader of the TurboCASH accounting project, the world's leading open source accounting program. He is a Gridiron Football coach and plays the Double Bass.

**Philip Copeman CV**

BSc (Econ), MBA, University of the Witwatersrand.

BCom Hons (Econometrics) University of Johannesburg.

Philip Copeman has had a life-long passion for the search for human origins.