

# Our Hunter-Gatherer Ancestors: In Balance With the Earth?

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—based on *Sapiens: A Brief History of Humankind* by Yuval Noah Harari—(Harper Collins: 2015)



Figure 1: Contemporary artist's rendition of a battle between two Homo Sapiens tribes

Like many others who are disturbed by the rampant destruction and the reckless domination of the earth and its creatures by our species Homo Sapiens, I took inspiration from a time in the past when humans allegedly lived in harmony with the earth and its creatures: the Hunter-Gatherer stage of our history, which lasted for hundreds of thousands, if not millions, of years. We see on Facebook today many quotations by wise Native American chiefs who were appalled by the European conquerors' widespread destruction of the wild creatures by unregulated hunting, and the land by mining and farming.

Today, many of us think the Native Americans, and other indigenous Hunter-Gatherer tribes, lived in harmony with the earth and its creatures. We romanticize our Hunter-Gatherer ancestors and imagine that this period of prehistory may be what the Bible refers to as the Garden of Eden, before the Agricultural Revolution, after which we had to "eat bread by the sweat of your brow until you return to the ground." During that ancient time in the Garden of Eden, we imagine that we humans were responsible stewards of the earth and its inhabitants.

However, according to the paleontological and archeological record, we are wrong in our interpretation. As long ago as 70,000 years, Homo Sapiens was already irrevocably changing and altering the earth's complex ecosystems and causing extinction of species,

tens of thousands of years before the Agricultural Revolution, the Industrial Revolution, and the Scientific Revolution, all which accelerated the process of destruction. We know this by examining the fossil and archeological record.

There was a time, however, 100,000 years ago and earlier, when Homo Sapiens lived in harmony with the earth. We lived only in eastern Africa at that time, and did not affect the environment any more than gorillas, or chimpanzees, or beetles or jellyfish. Our entire population probably numbered less than one million individuals. Although we had bigger brains and more intelligence than other creatures, and we had mastered tool-making, fire-making and cooking, our influence on the earth was negligible. We hunted smaller creatures, and in turn, we were hunted by larger creatures. Most children died before reaching maturity. Sapiens lived (and died) in balance with our environment.



Figure 2: Artist's rendition of Homo Ergaster, an early member of the genus Homo (eastern Africa)

According to the fossil record, Sapiens first ventured out of Africa about 100,000 years ago into the Middle East, where we encountered tribes of long-established Homo Neanderthalensis, our human cousins who had left Africa 150,000 years earlier and settled in Europe and the Middle East. When Sapiens first encountered the very successful Neanderthals who had colonized Europe, we were defeated by our larger and stronger cousins. The Neanderthals (who had larger brains than Sapiens) repulsed the Sapiens invasion and either exterminated the intruders or drove them back into Africa.

Then, between 100,000 and 70,000 years ago, something happened in the brains of Sapiens. We do not know exactly what it was, but apparently a mutation occurred in the

brain of one Sapiens and was passed on to his or her offspring. Perhaps this mutation allowed the two halves of the brain to communicate more efficiently, for this mutation gave Sapiens incredible mental powers. For one, our powers of language increased. Of course, language is not unique to humans. Many other species have language. Some monkeys have separate calls for “Watch out for the lion!” and “Watch out for the eagle!” Bees have sophisticated methods of communication. No, language was not the hallmark of the Cognitive Revolution.

The most important cognitive ability we developed was the ability to imagine things which do not exist. (Yuval Noah Harari, an Instructor of World History at the Hebrew University of Jerusalem and the author of *Sapiens: A Brief History of Humankind*, calls this “Fictive Language.”) Sapiens began convincing their fellow humans to believe in imaginary things: like gods and goddesses, ghosts, spirits, fairy creatures, nations and money. (Nations and money only exist in the minds of people. If people stop trusting in the value of money, which happens from time to time, the currency becomes useless.)



Figure 3: The Cognitive Revolution allowed Sapiens to imagine things that do not exist, and create sculptures such as this 12-inch tall carved ivory Lion-Man/Woman (c. 40,000 BC), discovered in the Hohlenstein-Stadel cave in Germany (1939).



This important event—the mutation in the brains of Sapiens—Harari calls the “Cognitive Revolution.” The Cognitive Revolution gave Sapiens incredible powers, mainly due to our newly-found ability to believe in imaginary things which do not exist, for this allowed us to cooperate together flexibly in large numbers. (In the Bible, we see something similar when Adam and Eve ate from the Tree of Knowledge and their minds were opened. Although I am sure that the authors of the Old Testament knew nothing about the Cognitive Revolution, it is interesting to make this comparison.)

What is important about cooperating flexibly in large numbers, and why cannot other tribal creatures cooperate in large numbers? Other creatures who lived in tribes, such as gorillas, chimpanzees and Neanderthals, were not able to cooperate in large numbers, for one important reason: their tribes could only number about 150 individuals, maximum. This magic number (more or less) is the upper limit of individuals who can know each other personally, by direct contact. Other tribal creatures cannot cooperate together unless they know each other personally. (Ants, bees and termites are exceptions, for they can cooperate in the thousands, but not flexibly. Their roles are rigid.)

For instance, if a chimpanzee approaches a stranger chimpanzee from another tribe, they will look at each other suspiciously as enemies, and often try to kill each other. They do not know each other; therefore the newcomer is usually considered an enemy. Exceptions occur, however. If, deep in the jungle, away from their tribes, a young and handsome male chimpanzee meets a young and beautiful female from another tribe, sexual attraction may cause them to mate. But after mating, they return to their respective tribes. They need the tribe to survive. (Most Great Apes—humans included—cannot survive without help from their tribe.) Later, if the two chimpanzee tribes go to war, the male who earlier had romanced the female, might kill her.

If a tribe grows larger than 150 individuals, the tribe inevitably splits into two tribes; and the two tribes become competitors, if not enemies. We can see this same principle working in small businesses. A family business can grow to about 150 employees, but once it grows larger than that number, the business encounters insurmountable problems, unless they can develop a hierarchical structure, in which employees learn how to relate to each other not by knowing each other personally, but relating to each other according to rank and rules and regulations. The same is true for a military battalion. 150 men can cooperate effectively without hierarchy because they personally know each other. Battalions larger than 150 must develop hierarchies, ranks and strict rules and regulations in order for large numbers of soldiers to cooperate effectively.

One important result of the Cognitive Revolution was that Sapiens, due to our shared imagined beliefs in gods and goddesses, nations, etc., learned to cooperate together in large numbers without always trying to kill each other. We invented imaginary spirits and gods which, we thought, gave benedictions or punishment to our tribes. We offered sacrifices to these imaginary spirits, and we held annual conferences on the Solstices or Equinoxes and at other times to propitiate the spirits to insure benediction and avoid punishment. Because of shared religious and national beliefs, large numbers of Homo Sapiens learned to



cooperate together. Of course, we still had conflicts and wars and massacres, but if several tribes (and later, nations) were confronted by a common enemy, we were able to cooperate together to defend our home lands, because we had similar beliefs. In addition, hunters and warriors from various tribes learned to cooperate together to hunt very large and dangerous creatures like mastodons and mammoths, and to hunt other dangerous and hated creatures, such as Homo Neanderthalensis.

Perhaps it took 10,000 or 20,000 years for this special gene which increased our brain power to spread throughout the Sapiens population, we don't know. But we do know that about 70,000 years ago, according to the fossil record, Sapiens migrated again into the Middle East from Africa. This time, we succeeded in eliminating the Neanderthals from the Middle East and colonizing the New World. The last Neanderthal fossils in the Middle East date from this time. During the next 40,000 years, Sapiens spread throughout Europe. Whenever we encountered a Neanderthal tribe, the Neanderthals disappeared and Sapiens prospered.

Poor Neanderthals. They were bigger and stronger and better adapted to cold climates than Sapiens, and they had bigger brains, but it seems they could only cooperate with members of their own tribe, whom they knew personally and intimately. Two or more bands of Neanderthals didn't have the ability to cooperate together to fight off the new kid on the block: Sapiens. They probably thought we had some magical powers, and we did: the power of Fictive Language. The last Neanderthals became extinct about 28,000 years ago. Yes, some Sapiens interbred with some Neanderthals, as evidenced from recent genome sequencing and analysis, but I personally think this could have occurred when Sapiens raided Neanderthal villages, captured Neanderthal women as slaves, raped them, and sometimes allowed the offspring to grow into adults.



Figure 4: Artist rendition of a young Neanderthal woman.

Next, Sapiens spread into Asia, where Homo Erectus, another distinct species of the genus Homo, had lived already for about one million years. Homo Erectus were taller than Sapiens, but they, like the Neanderthals, did not have the Sapiens' superior cognitive abilities. Homo Erectus, like Homo Neanderthalensis, made finely-crafted stone and wood tools and mastered fire, but they could not unite to combat the overpowering Sapiens menace. Within 30,000 years or so, Homo Erectus became extinct. The same is true for Homo Denisova, who also lived in Asia (in Russia), and Homo Floresiensis, a species of dwarf humans who lived in Indonesia who became extinct as recently as 12,000 years ago.

However, Sapiens' unstoppable expansion was not confined to Europe and Asia. In time, some Sapiens in Indonesia exhibited great ingenuity by learning to build boats and navigate the seas. About 40,000 years ago (according to the fossil record), we arrived in Australia. This was a remarkable feat. No other species of humans, indeed no other terrestrial animal, had emigrated to Australia since the continent of Australia had split off from the great Supercontinent of Pangaea some 175 millions of years earlier.

Due to millions of years of isolation, hundreds of species of marsupials appeared in Australia. Hardly anywhere else are marsupials found on the earth (the American opossum is an exception). Great enormous species of marsupials appeared: 10-foot-tall kangaroos, giant wombats weighing 6,000 lbs., giant sloths, giant wallabies, and marsupial lions. However, when Sapiens arrived in Australia, these massive creatures were doomed. In Africa and Asia, animals had evolved with humans for one or two million years. The animals had learned that the genus Homo was dangerous. They avoided the genus Homo.

But the large animals of Australia had never seen a human. I'm sure, to a three-ton giant Australian marsupial wombat, the Sapiens they encountered looked like helpless creatures. We had no big, sharp teeth. Our muscles were tiny. We were puny and weak. Judging from our bodies, it was a wonder that we could survive at all. But Sapiens could kill creatures many times our size with cunning, razor-sharp stone spears and arrows, careful planning, and teamwork. The large marsupial mammals of Australia bred slowly. Maybe they had offspring only every other year, and then only one offspring at a time. They could not reproduce quickly enough to stem the Sapiens onslaught. Within 5,000 years, all the giant creatures of Australia became extinct, although they had lived on that isolated continent for millions of years and had weathered many catastrophic changes in climate.

Around 16,000-18,000 years ago, according to the fossil record, Sapiens crossed the Bering Strait from Siberia and arrived in North America. At that time, many giant mammals lived there. Enormous ground sloths, mammoths, mastodons, giant armadillo-type creatures (glyptodons), camels, horses (not the Asian-European horses which arrived with the Spanish Conquistadors and were subsequently adopted by the Plains Indians, but the original Native American horses which became extinct), and giant saber-tooth tigers. As Sapiens spread throughout North America, these creatures suddenly disappeared. The same happened in South America.



Figure 5: Poster of Extinct Giant North American Megafauna

When Sapiens first came to the great island of Madagascar off the coast of Eastern Africa, huge 10-foot-tall flightless birds (Elephant Birds) which weighed up to 1,000 lbs., lived on the island. All these birds are now extinct. The same is true for Tasmania and the other Pacific islands.

And most of this was prior to the discovery of agriculture: the Agricultural Revolution. Hunter-Gatherer tribes did not live in harmony with the earth; they had radically and irrevocably changed the earth even before the invention of agriculture. We can imagine: if suddenly, for whatever reason, humans became extinct, and alien explorers came to our planet and began digging and examining the fossil record, they would see that Sapiens had changed the entire earth's ecosystem even while we were Hunter-Gatherers, before the Agricultural Revolution, before the Industrial Revolution, before the Scientific Revolution.

Of course, the invention of agriculture and the domestication of animals about 10,000-12,000 years ago, gradually precipitated the mass cutting down of forests and the destruction of meadows into cropland, which caused more extinctions by habitat destruction. Then, the Industrial Revolution created poisons which were dumped into the air, the water and the land, which caused more destruction. The Scientific Revolution harnessed atomic energy and created weapons of mass destruction, which also poisoned the environment with radioactive fallout and waste. Today, rapid climate change (caused to a great extent by Sapiens pumping enormous amounts of carbon dioxide into earth's atmosphere for the last few hundreds of years) is already causing extinctions. Not to



mention the Sapiens' population explosion and the subsequent habitat destruction for thousands of species which has resulting in more extinctions. Where will it end?

What is the alternative to Sapiens' undiminished and uncompromising bent for dominating every creature that it comes in contact with? I do not know the answer to that question; but I fear that without a major change soon, there will be not much left on the earth except perhaps for billions of Sapiens, and many more billions of domesticated chickens, goats, sheep, pigs and cattle which are raised as food for humans. I think it is time for another mutation—a radical mutation—before it is too late.

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Photo credits:

Figure 1: A still shot from an animated video, "Caveman Fight,"  
<https://www.youtube.com/watch?v=ZAAV5j5AyAg> (accessed June 17, 2016)

Figure 2: Diorama of Homo Ergaster at the Anne and Bernard Spitzer Hall of Human Origins, American Museum of Natural History, New York  
<https://www.flickr.com/photos/57222059@N05/6052211694> (accessed June 17, 2016)

Figure 3: Der Löwenmensch - The Lion Man/Lady <http://donsmaps.com/lionlady.html>  
(accessed June 17, 2016)

Figure 4: <http://www.sharenator.com/celebrities-hilariously-transformed-into-cavemen/>  
(accessed June 17, 2016)

Figure 5: Poster of Extinct North American Megafauna, "Animals in the Book of Mormon,"  
<http://themormonbox.com/1456/animals-in-the-book-of-mormon/>  
(accessed June 17, 2016)