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THE INVENTION OF GOOD AND EVIL.
A World History of Morality

Sample Translation by Marshall Yarbrough

I

5,000,000 Years:

Genealogy 2.0

Descent

The trees vanished with the drought, and the land as it fissured formed deep valleys and rugged canyons, giant dark lakes and bogs, tall mountains and rounded hills. Thorny bushes, shrubs, and stiff grasses soon appeared in place of the ample forests that had once offered us protection among the vines, giant, dew-covered ferns, and lush succulents, where fragrant mushrooms with caps like bright flowers grew between the roots peeking out of the ground.

After we had left the trees, and the trees us, the open plains were waiting. In this new, unbounded world, stone and fire rained from the sky, and there was little to eat. There were, however, large animals with fierce jaws, who were faster than we were, and just as hungry.

A shopping cart, half-filled with fossilized bones. No more than this remains of our earliest ancestors, or in any case no more has ever been found: a few teeth; skull fragments, bits of eyebrow ridges, pieces of the lower and upper jaw; splinters of a few thigh bones.

The terminology in this specialized field is confusing. Today researchers distinguish between various so-called *taxa* (from the Ancient Greek *taxis,* "arrangement, order") depending on which branch of the zoological family tree they happen to be looking at and which differences and evolutionary off-branchings they choose to emphasize: The *hominidae* family includes all anthropoid apes, meaning not only the different species of the *homo* genus, but also gorillas, orangutans, and panins, whose recent representatives are chimpanzees and bonobos; the term *homininae*, on the other hand, excludes the *ponginae* of Asia—orangutans—and is reserved for *African* great apes only, which includes, alongside humans, only panins and gorillas. Finally, the term *hominini* encompassses all humans in a more narrow—though not yet the *most* narrow—sense: to this tribe belong the earliest human-like (though admittedly not yet very recognizably human) animals that began to populate parts of southern and eastern Africa about five million years ago, a series of australopithicines grouped

under various more familiar species names like *Homo ergaster*, *Homo erectus*, *Homo heidelbergensis*, and *Homo neanderthalensis*. Of these *hominini* only we remain today: *Homo sapiens*.

What Is Cooperation?

The evolutionary history of the first *hominini* is the history of our earliest proto-human forebears after splitting off from the ancestor that we share with the other anthropoid apes still living today. This critical first phase of our evolution can be roughly situated in the era beginning about five million years ago.

The surviving fossils—with the exception of *Sahelanthropus tschadensis*, the oldest, whose asymmetrically shaped skull was discovered at the Toros-Menalla excavation site in the dry Djurab desert in northern Chad—were found primarily in eastern Africa in present-day Ethiopia, Kenya, and Tanzania: fragments of the upper thigh and thumb bone of *Orrorin tugenensis* in the Lukeino Formation in the verdant Tugen Hills; the back molars of *Ardipithecus ramidus* and the lower jaw of *Australopithecus afarensis* (the species to which "Lucy" also belongs) on the Awash river in the Afar Triangle. The second main concentration of fossil discoveries lies in present-day South Africa, where the remains of various early human ancestors were waiting to be found in the caves of Sterkfontein and Gladysvale, Drimolen and Malapa. It is not improbable that

we owe these discoveries, these evolutionary messages in a bottle, borne across the sea of time, to leopards and other large predators who lived in caves such as these and are known to have carried their prey back to their dens to eat.

Today our fossilized remains are scattered all over the world, housed in paleoanthropological institutes, where they've been assigned bureaucratic labels, marked down in files, archived, registered, and made distinguishable from one another: here *Sahelanthropus* is known, quite prosaically, as TM 266, *Orrorin tugenensis* as BAR 1000'00; other splinters, fragments, and pieces are filed away as Stw 573, KT-12/H1, or LH4. *Ardipithecus ramidus* is called Ardi—not all that original, but it's something at least.

The story of human emergence that these discoveries tells us is provisional. It remains, as philosophers sometimes say, "hostage to the empirical data," and is at risk of being revised, corrected, or superseded at any time by new discoveries. And this is as it should be, since only dogmas remain unchanged—only in exceptional cases does science have room for knowledge that lasts. Our insight into our most remote past remains forever speculative, not in the nebulous sense of being unverifiable and farfetched, but rather in the solid sense of legions of brilliant minds, armed with the most sophisticated methods of comparative morphology, molecular genetics, radiocarbon dating, biochemistry, statistics, and geology, attempting to reconstruct the most plausible version of this story from many heterogenous theories and data sets. This work of reconstruction remains dependent on which of its secrets the

earth's crust has decided to reveal to us through random geologic accident. In this we too often resemble the drunk searching for the keys he'd lost on his way home, who, asked why he was looking under the streetlamp, replied that here the light was better.

What made it possible to situate the cradle of humanity in East Africa was that the geological conditions there revealed layers of rock which elsewhere remained buried beneath scree, sand, and clay. Added to this, as in all scientific disciplines, is an incentive structure which leads even the most serious of researchers to tend to identify their latest finds as belonging to our ancestors and not to presumably more banal species: astonishingly, there are as good as no fossils of chimpanzees or bonobos, though of course "nobody wants to give up their chance at becoming the scientist who discovered one of the earliest hominins in favor of becoming the scientist who discovered the earliest panin."

When we talk about the earliest human ancestors, those who followed immediately after the evolutionary branching-off from the rest of the anthropoid apes, we are talking about animals whose physiognomy and appearance are only very remotely reminiscent of modern humans. Hardly more than a meter (or three feet) tall, with the extra-long arms, protruding mouth, and wide, dilated nostrils characteristic of primates, their entire bodies covered in thick, brown-black hair, these proto-humans resembled todays apes more than they did us. The first signs of culture and intelligent problem solving are

not to be found until significantly later: the primitive stone tools that have made the Olduvai Gorge in Tanzania famous are at most 2.5 million years old.

It was warm then, but not too warm, as our habitat was often situated at elevations of over one thousand meters (three thousand feet). In these open, sparsely wooded, grassy landscapes we spent our days in small groups searching the ground for roots and tubers, bitter shoots and gnarled rhizomes, nuts and termites, and found, with a little luck, the remains of animals that had been left behind by hyenas or lions—at the time still far more talented hunters than us. Dried bits of meat from these carcasses provided us with protein, as did the marrow of their bones and their brains, which we scooped from their burst skulls with nimble fingers.

Two million years ago the Pleistocene began, and with it a crucial era for human evolution. The earth was populated by bizarre megafauna: mammoths, woolly rhinoceroses, saber-toothed tigers, and giant armadillos prowled the land. They have all since become extinct, in part because of us.

We lived in a rugged, dangerous world. The open, savannah-like expanses that had formed along the East African Rift and reshaped the eastern part of the continent had made us vulnerable to predators; in this exposed landscape we could no longer protect ourselves by quickly fleeing into the tree tops. The mountain ranges that had begun to rise in the west cut the plains off

from the wind and rain that would otherwise have come in from the Atlantic Ocean and provided water for the soil.

The Laetoli footprints, preserved and left to us by the ashes of the Sadiman volcano, call to mind a family—two adults and a child—their traces dating back almost four million years. They are the oldest tangible evidence of ancestral humans walking upright. The new living conditions outside of the dense forests supported this bipedal way of life. True, for a long time to come we remained competent climbers, but we were increasingly reliant on the ability to travel greater distances on foot. In these wide plains covered in low vegetation, it was worthwhile to develop a faster gait and the ability to better take in our surroundings.

Time-budgeting models put together only very recently make it possible to delve into the social life of this group of early hominins. In order to be able to survive in our environment, we primates (and other living things) ultimately had to do three things: obtain sustenance, pause to rest, and maintain social cohesion. As soon as we have a rough idea of what the archaic environment was like at a given time, and can estimate roughly how many hours of daylight a given species had to work with each day, we can gauge the maximum size of the groups whose cohesion could be maintained by means of what is known as *grooming*—that is, the reciprocal hair care that is the central mechanism for establishing social solidarity among primates. Those who had to spend this many hours looking for food and that many hours resting had a maximum of x

hours leftover to concern themselves with the cohesion of the group. This window of time wasn't sufficient to sustain groups with more than twenty members.

But why was social life so important for our ancestors? Why did our ability to cooperate take on such an important role? These questions bring us back to the changes in climate and geology that came about with the formation of the East African Rift.

The first, fundamental moral transformation of humankind consisted of merely discovering morality in the first place. Most animal species have behavioral norms that enable and enforce the cohesion of a group. Schools of fish, whose movements seem to follow some ghostly, unheard rhythm, cooperate through conformity; social insects like bees or ants have perfected a division of labor that often demands total self-sacrifice from the individual for the good of the hive or colony. The special form of cooperation that has shaped human morality consists of making the interest of the individual secondary to a greater common good from which everyone benefits.

In this first chapter of my history of morality I will begin to describe the logic behind this transformation. Why cooperation? The evolution of our unique ability to cooperate can be traced back to the changes in climate and geology that resulted in tropical forests giving way to more open, savannah-like expanses. This also explains why our way of life is so drastically distinct from

that of chimpanzees and bonobos. Our closest relatives, who were spared comparable shifts in climate, continued to live in the densely forested areas around the Congo river in Central Africa and were thus subjected to completely different selection pressures. We humans are what becomes of the most intelligent apes when they are forced to live on large swaths of grassy terrain for five million years.

The destabilization of our environment, and the fact that we were subjected in far greater measure to being preyed upon by dangerous predators, increased the pressure to compensate for this new vulnerability with better means of mutual defense. We found support and strength in larger groups with closer cooperation.