



Large Predators: Them and Us!

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We pay close attention to large predators. We do so because we evolved as prey. It was our ancient fate to be killed and eaten, and our primary goal was to escape this fate. Our instincts are still shaped that way.

Our Herbivorous Roots

There is a reason why the bloody carnage on our highways is a mere statistic, while the mauling of a person by a grizzly bear is news. It's not only that so many fossilized remains of our ancient ancestors were meals consumed by large predators in secluded caves or rock niches, but also that we speciated like large herbivores. Despite our fondness for meat, despite "man the hunter," and despite the fact that at least one species of humans, Neanderthal man, grew into a super predator, our pattern and timing of forming species and of adapting to landscapes mimicked and coincided with that of deer, antelope or cattle rather than that of large carnivores.

A black wolf with yellow eyes stands in a snowy forest, looking towards the camera. The background is filled with snow-covered evergreen trees.

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WOLF UPDATE
BIOLOGIST'S VIEWPOINT

Herbivores readily form dwarf species under poor ecological conditions such as in rainforests, deserts, or predator-free oceanic islands, and they differentiate rapidly into new subspecies as they disperse geographically into new habitats. Predators form no dwarfs on islands or elsewhere. Nor do they segregate sharply into swarms of regional subspecies. Large herbivores do those things—and so do humans. Our bursts of speciation coincide in time with those of African antelope.

Humans grow small canine teeth, not the large combat-canines typical of apes. Canine reduction is a signature of a common anti-predator adaptation called the “selfish herd,” whereby unrelated individuals cluster together in the open as protection against predation. Herbivores form “selfish herds” but predators do not. Herbivores may “evolve away” huge combat-canines. This pattern is shown not only by us, but by deer, horses, rhinos, and half a dozen extinct families of large mammalian plant eaters. Carnivores reduce no canines!

Our ancient herbivore roots are still reflected in our taste preferences; when we eat meat, we flavor it liberally with plant “poisons” (pepper, chili, sage, thyme, curry, etc). Apparently, meat does not really taste good until it tastes of plant! We also have the herbivore’s craving for salt. Just watch what you reach for next time you get a sizzling steak.

A Primate Shaped by Predation

While we may have evolved as hunters, we did not evolve like predators. We have a very special relationship to large predators: of all the primates, we are the only species able to survive large predators on the ground, away from trees. All other primates have historically used trees to escape predation.

Without being able to survive large predators on the ground, we would never have tapped into the huge protein biomass of large herbivores. There would never have been “man the hunter.”

We are great killers, of course, but note: we do not kill like predators with tooth and claws. We kill with specialized tools, a unique primate trait, as is the mental and emotional psychic structure that flows from that tool-building skill. With tools in hand we are brave, daring and dangerous. Without it, we are usually

not so audacious, and predators sense that difference. United with others in bravery we become frightening, especially since we can do something no other primate can. We can mimic sounds and adjust them. We can roar, growl, and scream, and match our voices to the occasion and to the predator confronted. And since sound mimicry is the biological root of language and music, we can assume it came first, courtesy of predation!

Large predators are hypochondriacs—and need to be! They cannot afford wounding that decreases their efficiency to hunt or that may trigger an attack by a pack member, followed by a cannibalistic feast. Consequently, a realistic vocal threat impresses even more than a blow with a weapon.

Modern research has shown that wolves switch to alternative prey species only very slowly, and that they do not target humans as long as there is prey or livestock between them and us. Moreover, wolves targeting humans and urban coyotes targeting children do so in the same manner. Surprising? Hardly! The only surprising thing is the argument—or myth really—that wolves pose no danger to people.

African predators are very “thornshy” as we now know from some beautiful experiments. Predators’ avoidance of thorns gives rise to prey’s secret to nightly survival: a thorn covered ground-nest, reinforced with a growl, and if worst comes to worst, a sharp jab with a stick. However, the ability to form a covered thorn-nest on the ground, a “boma,” requires a long history of building tree-nests in ever smaller savannah trees. It requires considerable manual and tool-using skills to build a sturdy, densely-thorned shelter. It requires close observation of elders and visual mimicry to succeed, which also came courtesy of predation.

Predation affected our psyche. During the day, one needs firm discipline when a predator is sighted, as running away is suicidal. We cannot outrun predators! Our ancestors had to fake supreme fearlessness, especially when “man the hunter”

bagged and carried home prey. How does one discourage hungry predators at such times, given that predators readily confiscate prey from one another? There would have been no “man the hunter” without an ability to successfully defend the killed prey and to bring it home without a string of predators following! We had to be good enough at intimidating predators so that women and children could go out foraging. And, we had to be good enough to spook off predators despite meat and bones at the campsite at night.

Enter big brain; enter “planning” based on foresight, shared experiences, and imagination. One must use one’s experience, and that of others, to minimize encounters with predators. One learns to avoid times and spaces where predators congregate and

cannot be readily defeated, and one needs to pass this knowledge on to family. One needs to exploit opportunities to chase away a predator, and teach it to do likewise next time. One needs to develop systematic harassment and punishment of predators so as to instill in them an aversion to anything human. The next step is to know when to systematically kill their helpless young so as to keep down their numbers. All this is still practiced in Africa and elsewhere, and it has been effective enough as over two million years of human history demonstrate. We did not escape being prey; we merely changed priority. We went from being a tasty, defenseless morsel, to a nasty creature of very low priority—in fact, the last in line. And that, given a

rich array of prey species, is not all that bad. We became a prey that was smarter than the predators, which happens to be unique. Normally, it’s the other way around!

Predators in North America: Big Bad Barriers

When our lineage came “out of Africa” it spread westward along the coast of Asia and colonized Australia some 60,000 years ago. That happened quite rapidly and could only have been done by people possessing boat technology. And then it took almost 50,000 years before North America was colonized! What prevented us from entering North America in that enormous time span?

Humans entered South America before North America, judging from the antiquity of archeological dates. The undisputed fact is that human colonization coincided with the collapse of the unique

North American native megafauna beginning about 12,900 years ago. As long as North America's native megafauna remained intact all through the late Pleistocene, there was no human settlement of North America. However, once the megafauna crumbled, there were repeated human entries. Moreover, non-human members of the Siberian fauna also moved into the ecological vacuum here, including the grizzly bear, gray wolf, wolverine, elk, and moose. How could this be?

North America's megafauna differed substantially from that of Eurasia and Africa. It was characterized by a multitude of highly specialized, often gigantic predators and prey. Fossil records show a surprising amount of crushed, broken, but healed bones in the predators, as well as excessive wear and breakage of teeth. Injuries in current African predators are minimal by comparison. Evidence seems to point to the fact that North American native predators were confronted by herbivores that were exceedingly able to defend themselves. The broken bones and the very specializations of predators and herbivores alike point to the demanding life they experienced.

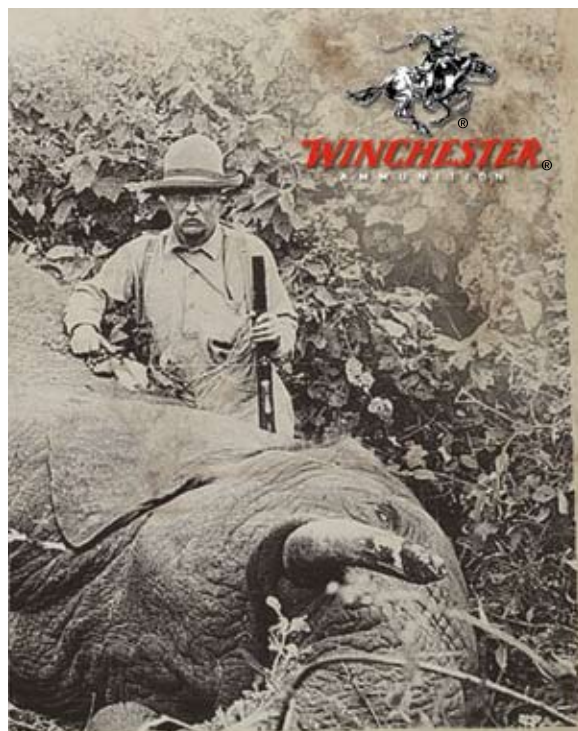
North America during the Pleistocene was a predator hell-hole compared to Eurasia or Africa! There was a predacious

bear about seven feet at the shoulder, the short-faced bear, *Arctodus simus*. It was assertive and not very clever, evidenced by its numerous remains in natural trap sites. If a camel or horse fell down a natural hole, all sort of short-faced bears jumped in after them—and perished! Grizzly bears and black bears did not do that. There was the common lion, only it was twice the mass of the African one, as was the American cheetah compared to its Old World counterpart. There were three species of short-faced bears and dire wolves larger than gray wolves. There were massive saber-toothed tigers and large, elegant, speedy dirk-toothed cats; large panthers, as well as black bears, cougars, red wolves and large coyotes. Life was hard for these predators, and they were all too willing to take risks for a meal, as evidenced in natural trap caves and in the West Coast tar pits of Rancho la Brea.

If you were to land on the shores of North America, spear in hand, what would you do when those big, assertive predators approached you for a closer look? And how would you hunt the scarce, highly alert, gigantic prey? The herbivores were highly specialized in evading predation, but their organs of food acquisition and processing remained exceedingly primitive. That

means that the fierce predation kept them way below the potential carrying capacity of the land, so that they were able to feed only on the best, most digestible, low-fiber vegetation. There was simply no selection for more efficient feeding organs. And that means that prey populations were kept at very low densities. If you were able to kill a large herbivore, how would you defend it against these diverse, huge predators?

It's likely that our abilities to deal with African and Eurasian predators were much too limited to deal with the full array of native North American predators. They kept the continent free of humans for nearly 50,000 years until, for reasons still disputed, America's megafauna declined to the point of extinction over a period of about 6,000 years. Even then, the increase in humans, as tracked by the number of hearth sites discovered per 1,000 years, was very slow. Moreover, indicators of human abundance are inversely related to the number of genera of megafauna still alive. It thus took some 6,000 years of hard, very dangerous living by human colonizers in North America to create a landscape reasonably safe for people.



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The few remaining native American species show to this day the predation pressure of the past. Whitetail deer, great experts at hiding and rapid escapes, are incompetent food competitors that do very poorly in the presence of Old World deer. Ditto for mule deer and elk. Pronghorn still run faster than anything on Earth. Native predators such as black bears, cougars, coyotes, and raccoons are thriving in our presence compared to their Siberian counterparts—grizzly bears, gray wolves and wolverines—that migrated into North America in the recent past. The Americans are very adaptable, but the ex-Siberians are not. We happen to worry most about the ex-Siberians.

Co-existing with Predators

We may be the clever, industrious prey that turned the table on carnivores, but our relationship to large predators remains precarious. Our ability to co-exist depends on us exploiting their fears—and woe if they call our bluff! The man-killing lions of Tsavo are but one example of predators learning how easy it is to hunt man as prey. Jim Corbett's tales of man-eating leopards and tigers, and reports of lions preying on modern-day refugees in Krueger National Park or Somalia, are further examples. Native peoples had quite sophisticated means of keeping safe from predators, but ultimately took to killing offending predators that transgressed against humans. Still, high-density populations of grizzly bears in California kept native people out of productive lowland sites until Spaniards killed off

the grizzlies. Pacific coast natives designated certain salmon streams for use by bears and harassed bears away from other streams. In Greenland, early last century, areas occupied by wolves were free of native people, and attempts to provision weather stations by dogsled failed because of wolf attacks. I was told that, traditionally, wolves were kept down in numbers by destroying dens, a method praised as most effective in Russia.

The shared history of wolves and people is deeply troubling, even though to all appearances grizzly bears, black bears, and cougars have killed far more people in recent North America. In order to understand what wolves can do when conditions

scholarship are again and again invoked to push flawed conclusions about wolves as well as flawed legislation.

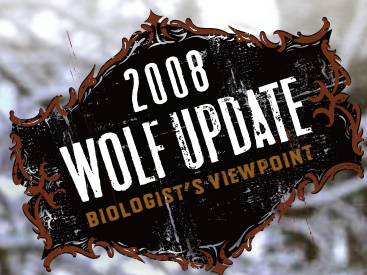
In North America, specialists in wolf biology did not recognize how to use historical Eurasian information about wolves, and dismissed such as irrelevant. They attributed such information to people's ignorance and malice towards wolves. It escaped them that as scientists they were ill-equipped to research such matters, as this field of study resides squarely in the academic domain of history.

We can know historically of people's plight through the centuries only indirectly. For most of history the populace in Europe and Asia was illiterate. Illiterate people cannot leave first-hand accounts of their troubles. At best they can convey their concerns to their masters. Thus we have to look for summaries of their problems in such places as church records or administrative accounts. Unfortunately, tracing church records or administrative accounts can be less than fruitful as many have been burned by the unending warfare of centuries past. This leaves summaries of such matters, as well as the evidence for actions taken by the rulers to deal with large predators, usually wolves.

An example is the detailed encyclopedic work on hunting and wildlife management by Friedrich von Flemming, published in Leipzig, Saxony, in 1719 and addressed to his Mighty Sovereign and Master, Friedrich Augusto, King of Poland. He followed with a second volume in 1724. It's sobering! The depredation by wolves led in some regions to great efforts

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are right, we have to go to Eurasia. Knowing this history is important, as already we have enacted legislation here and in the European Union based on false biological premises. These missteps arose from errors in scholarship. We must acknowledge these errors, as the prestige of science and



on the part of feudal rulers to rid their land of this menace. The rulers may have been less concerned about the plight of their subjects than about taxation issues and the welfare of their wildlife. Miles upon miles of netting were strung to corral wolves. Special horse carriages and sheds were required to transport and house the netting. Several villages at a time were forced to drive wolves and other wildlife into nets. Professional hunters and trappers were employed to trap wolves. However, when people are helpless, large predators are quick to recognize and to exploit that vulnerability; therefore, the recurring wars brought back wolves.

It's not only the central European experience that is sobering; research into this matter in Russia, Finland, France, Turkey, Iran, Afghanistan, India, and Korea shows similar results. Tragedy followed again and again from political systems that disarmed and disenfranchised their citizens. Wolves exploited that helplessness. Compared to bears, wolves were hated—with excellent reason. Not only did they destroy livestock in the fields, but they found means and ways to break into stables in villages and kill the precious family cow or sheep thought to be safely stabled indoors. Children were a primary target of wolves. Rabies was not uncommon, and a rabid wolf running amuck biting horses, cattle, and people in rapid succession was a death angel if there ever was one! The bite of a rabid wolf was lethal; a cure did not exist until the rise of modern medicine. Such an animal could bite dozens of people before it was killed or ran off and died.

No Easy Pact

Wolf packs came out of the "wilderness," which in history was detested as a source of

evil. The frequent wars brought wolf troubles. After the Thirty Years War in central Europe, it took decades before some landscapes were resettled—courtesy of wolves. The fairy tale by the Brothers Grimm of *Little Red Riding Hood* is based not on ignorance and malice towards wolves but rather on very real and desperate experiences. This experience drove the costly and wearying attempts to exterminate wolves throughout the ages right into the last century in Europe.

Today we may decry the extermination of wolves in the American west, but there were reasons for it and modern studies confirm how efficient wolves can become in killing livestock. And that confirms the European historical experience. Even in modern times wolves have been a threat to disarmed populations—most recently in areas of re-colonization such as Finland, Sweden, and even modern Germany. Ditto in New Mexico where wolves are legally protected! Historically, wolves and people have never coexisted except where wolves were kept under strict control through hunting; and prey was, consequently, abundant. That's one lesson from the North American experience we need to take very seriously.

Modern research has shown that wolves switch to alternative prey species only very slowly, and that they do not target humans as long as there is prey or livestock between them and us. Moreover, wolves targeting humans and urban coyotes targeting children do so in the same manner. Surprising? Hardly! The only surprising thing is the argument—or myth really—that wolves pose no danger to people.

It is timely to reassess conservation of large predators so as to make co-existence safe for them and for us. And that will be the subject of a future essay. ■

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