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Minding the Animals: Ethology and the Obsolescence of Left Humanism

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"We do not regard the animals as moral beings. But do you suppose the animals regard us as moral beings? — An animal which could speak said: 'Humanity is a prejudice of which we animals at least are free.'"

Friedrich Nietzsche

What does it mean to be "human"? The question, though it has occupied some of the greatest Western minds of philosophy, science, history, and political theory, could not have been answered with any plausibility until recently, for we have only begin to acquire the scientific knowledge necessary to provide an informed response. At the same time, recent scientific and technological developments have produced radical and vertiginous change. The possibilities of artificial intelligence, robotics, cloning, pharmacology, stem cell research, and genetic modification pose entirely new challenges for attempts to define "human" in fixed and essentialist rather than fluid and plastic terms.[1]

Despite our deep-rooted biological and social evolution, "humanity" is a social construct involving the identity and conception humans have of themselves as members of a species. In its arrogant, alienated, and domineering Western form, human identity reflects a host of problematic assumptions, biases, prejudices, and myths derived from religion, philosophy, science, and culture as a whole. The massive, tangled knot of ideologies involved in the social construction of our *species* identity need to be critically unraveled, so that we can develop new identities and societies and forge sane, ethical, ecological, and sustainable life ways. To an important degree, the new identities must emerge from an ethic of respect and connectedness to all sentient life – human and nonhuman – and to the Earth as a whole. Ethically progressive and inclusive, new post-humanist identities and values would also be *scientifically valid*, by accurately representing the true place of *Homo sapiens* in the social, sentient, and ecological communities in which it finds itself enmeshed.

Profound change has been stirring in areas such as philosophy and religion, but in many key ways science is paving the way, with new discoveries forcing a rethinking of human identity and ethics and carrying a number of profound social and political implications as well. In urging systematic conceptual shifts in our views of the natural world and specifically nonhuman animals, this essay also underscores an irony and problem that has received little if any attention. This concerns the gross failures of the Left — the entire spectrum of positions

from Left-liberalism to Marxism to socialism and anarchism — to engage one of the most significant intellectual convulsions of the modern era, namely, *cognitive ethology*: the scientific study of animal intelligence, emotions, behaviors, and social life. Although Darwin was an early pioneer of the field in the mid-nineteenth century, ethology did not gain decisive ground until the 1980s, when advanced by visionaries such as Donald Griffin, and subsequently was popularized by scientists and writers such as Marc Bekoff. In our current time, hardly a day passes without new and exciting breakthroughs, as the number of conferences, articles, and books on the topic continue to proliferate and the findings of ethological research continue to amaze – and humble — the research community and lay audience.

Science has always been important to the Left, as progressives and radicals proudly wore the mantle of the European Enlightenment and championed the beneficial consequences of scientific advance that brought intellectual, moral, and social progress. In radical traditions from the nineteenth century to the present, Leftists prided themselves on their empiricism, naturalism, evolutionary outlook, skepticism, and agnosticism or atheism. Inseparably related to their support of scientific and Enlightenment values of learning, critical thinking, and autonomy, Leftists have also embraced the moral and political values of the modern revolutionary traditions that emphasized rights, democracy, equality, justice, and autonomy.

While an ecological turn did not take hold in Leftist thought until the 1970s, the Left today seems to be decades or another century away from discerning the moral, political, social, and ecological importance of animal liberation and the critique of speciesism[2] (the belief in the inherent superiority of humans over all other species due to their alleged unique cognitive capacities). With few exceptions, Leftists have systematically devalued or ignored the horrific plight of animals as a trivial issue compared to human suffering, and they have therefore mocked or dismissed the animal liberation movement that emerged in the 1970s to become a global movement more dynamic, powerful, and widespread than virtually any human cause or liberation movement. Despite their affirmation of Darwinian theory, which views human beings as natural beings who co-evolved with other animals in an organic continuum, the *humanist* elements of Leftist culture — which emphasize the radical uniqueness and singularity of humans as "superior" animals — prevailed over the *naturalist* elements — which emphasize the continuum of biological evolution, even as it phases into social evolution and cultural development.

This essay raises various questions concerning human identity politics — the social, political, and environmental implications of how humans view and conduct themselves as members of a distinct species in relation to other species and the Earth as a whole — and situates Left humanist views as a variant, rather than rejection, of Western anthropocentrism, speciesism, and the pathology of humanism. As part of the problem rather than the solution, I argue that Leftist humanist theories (including "eco-humanist" variants) fail to advance a truly revolutionary break with the mindsets and institutions underpinning hierarchy, oppression, violence, species extinction, and the current global ecological crisis. I claim that because of the atavistic, unenlightened, pre-scientific, and discriminatory views toward nonhuman animals, such as led them to miss some of the most profound scientific and moral revolutions of the era, Leftists cannot regain their place of pride in progressive culture until they jettison their shopworn hierarchical and exploitative views, a process that can be catalyzed by engaging the

major themes and findings of ethology.

Modernity and its Discontinuities

> "Man, if we look to final causes, may be regarded as the centre of the world."
>
> Francis Bacon

> "The most calamitous and fragile of all creatures is man, and yet the most arrogant. (…) Is it possible to imagine anything so ridiculous as that this pitiful, miserable creature, who is not even master of himself, should call himself master and lord of the universe? It is apparent that it is not by a true judgment, but by foolish pride and stubbornness, that we set ourselves before other animals and sequester ourselves from their condition and society."
>
> Michel Montaigne

As humans continue to explore their evolutionary past and gain a more accurate knowledge of the intelligence of great apes and other animals, as they probe the depths of the cosmos in search of life more advanced than themselves, as they develop increasingly sophisticated computers and forms of artificial intelligence and artificial life (self-reproducing "digital DNA") , as they create transgenic beings and cross species boundaries to exchange their genes with animals, as they clone forms and create others virtually from scratch, and as they merge ever more intimately with technology and computers to construct bionic bodies and become cyborgs, the question inexorably arises: Who/what is *Homo sapiens*?

Since the first cosmologies, ancient Greek philosophy, Christian theology, and modern science to Marxist humanism and naturalism, Western culture has struggled, and failed, to attain an adequate understanding of the human species. From religious attempts to define us as immortal souls made in the image of God to philosophical efforts to classify us as disembodied minds, thinkers have approached the question of human nature apart from their bodies, animal past, and evolutionary history. Whereas such fictions vaporize biological realities and exaggerate human uniqueness in relation to other animal species, sociobiology reduces humans to instinct-driven, DNA-bearing organisms devoid of free will and cognitive complexity. Both extremes fail to grasp the tensions and mediations that shape the *human animal*, a term/being that exists within the tension of culture/nature, of the long biological and social evolutionary journey that shaped *Homo sapiens*. A deep understanding of human nature has been obscured by vanity, arrogance, error, and pomposity, as well as fear and insecurity of being "merely" animal.

Human identity in Western culture has been formed through the potent combination of agricultural domestication of animals and plants, Judeo-Christian anthropocentrism, Greco-Roman rationalism, medieval theology, Renaissance humanism, and modern mechanistic science. Whether religious or secular, philosophical or scientific, these sources concur in the belief that humans are wholly unique beings, existing in culture rather than nature, alone in

having language and reason, and thus humans are ontologically divorced from animals and the Earth. Throughout ancient and medieval societies, during the Greek, Roman, and Christian empires, humans easily imagined themselves to be the most unique and advanced forms of life on Earth, the ends to which all other beings and things were mere means. Whether ancient or modern, religious or secular, there has been an unbroken continuity of human separation, arrogance, and domination over animals and the natural world, such as is inseparable from our domination over one another.[3]

Beginning in the sixteenth century, however, the dominionist, anthropocentric, speciesist, theocratic, and geocentric worldview of Western society suffered a series of powerful intellectual blows that decentered humans from their cosmological throne and self-assigned position of power and privilege. Each conceptual bomb destabilized the medieval cosmological picture in which God is the center of all things, the Earth is the heart of the universe, "Man" is the core of the Earth, and the soul or reason is the essence of the human. Over the last five hundred years, this cosmology — which can be visually depicted as a series of concentric circles — has been overturned through a series of "discontinuities." These involve intellectual, scientific, and technological developments that shatter the illusory privilege, harmony, and coherence that human beings vaingloriously attempt to establish between themselves and the universe. Whenever a rift opens in their narcissistic map of reality, humans are forced to reevaluate the nature of the universe, to rethink their place in it, and to restore philosophical order. Invariably, this process occurs by reestablishing their alleged privilege and uniqueness in a new way. Of course, while many push for change amidst the destabilization of paradigms, others resist it, and opposing viewpoints clash and struggle for the power of truth and the truth of power.

As a strong reaction to theism, the hegemony of theology, and the oppressive and hostile stance the Christian Church took toward scientific and technological advance, humanism sought the unleashing of the powers of science and industry, it sought to replace the domination of nature over humans by the domination of humans over nature, and urged humans to seize command over the natural world and use it improve human life.[4] This Promethean outlook tended to further separate culture and nature, and despite an expanding scientific optic it further polarized the "animal" and "human" worlds, such that animals were unthinking beasts contrasted to the luminescence of human reason. The rationality, technology, culture, and other core attributes of humans were defined not as elaborations of the animal world but as arising *ex nihilo* as singular phenomena utterly and radically new in history.

In his book, *The Fourth Discontinuity*, Bruce Mazlish identifies four ruptures in the medieval picture of reality brought about by dynamic changes in the modern world.[5] The *first* discontinuity opened with the Copernican revolution in the sixteenth century. In place of the dominant geocentric worldview that situated the Earth at the epicenter of the universe and claimed that the sun revolved around it, Copernicus, and subsequently Galileo in the seventeenth century, argued that the sun occupies the center of the universe and the Earth revolves around the sun. Under the spell of the Ptolemy and medieval cosmology, human beings had to confront the fact that their planet is not the physical center of the universe. Not only did this fact contradict official Church dogma, the spatial decentering entailed a psychological decentering, moving the Earth and possibly humanity itself from the center of

the picture to the margins. Of course, science has since demonstrated that there is no center to the universe, that its limits are endless. There have been rich speculations, moreover, that alien species exist that are far more intelligent and advanced than humans, that there may be other or "parallel" universes, and that humankind inhabits a "small planet attached to an insignificant star in a backwater galaxy."[6]

But rather than a blow to human supremacism, some modern thinkers saw this first decentering or discontinuity as an opportunity for humankind to assert itself even more boldly in the universe. As J.B. Bury writes,

> Finding himself in an insignificant island floating in the immensity of space, ["man"] decides that he is at last master of his own destinies; he can fling away the old equipment of final causes, original sin, and the rest; he can reconstruct his own chart and, bound by no cosmic scheme, he need take the universe into account only in so far as he judges it to be his own profit. Or, if he is a philosopher, he may say that, after all, the universe for him is built out of his own sensations, and that by virtue of this relativity "anthropo-centrism" is restored in a new and more effective form.[7]

Thus, one should never underestimate the narcissistic capacity of human beings to assert and re-assert the belief that their species is the meaning of reality and that all things exist for their purpose, pleasure, and profit. The dialectics of decentering and recentering would recur many times over. Heliocentrism was part and parcel of a new empirical science that was a crucial catalyst for modern humanism, a veritable secular religion in which humanity elevated itself to divine status and sought possession of the Earth for its advancement. The mechanistic theories of Thomas Hobbes and Julien Offray de Le Mettrie in the seventeenth and eighteenth centuries respectively, were potential counters to human supremacy, by rejecting Cartesian dualism, stripping away the soul, leaving nothing but the body as machine, but religion, science, and philosophy were united in asserting human supremacism by any and all avenues.

Despite the heliocentric theories of Copernicus and Galileo and the development of a secular scientific culture, humanity nevertheless could feel comfortable in its alleged separation from and superiority over the "brute beasts" of the Earth. Comfortable, that is, until the *second* discontinuity, which opened up in 1859, when Darwin published his world-shaking treatise, *The Origin of Species*. This seminal work dealt a fatal blow to the Platonic metaphysics informing Western thought, which denied the reality of change and sought truth in a transcendental and timeless realm of ideas or "Forms." During the nineteenth century, numerous thinkers explored the idea that nature changes and evolves toward greater diversity and complexity. But it was not until Darwin's breakthrough insight into natural selection that key mechanisms of biological change and speciation were understood, effecting a conceptual revolution that inalterably changed the human understanding of the natural world, of time and change, and of itself.

Darwin demolished a litany of propositions taught by mainstream interpretations of the Old and New Testaments, such as: God made humans in his image; God put animals on the Earth for human benefit; God created the animals after he created humans; and each act of creation was unique and unrelated to the other. Yet Darwin showed, and science subsequently has

confirmed, a set of counter-propositions: one can explain the universe without positing God, there is no inherent purpose in the universe, animals lived for billions of years before humans, and all life evolves in a continuum from the same primordial conditions. Over a century a half after the publication of *The Origin of Species*, however, much of the world still cannot confront the facts of evolution and the animalic origins of human life.

In scientific quarters, however, the Darwinian theory of evolution grew increasingly influential and became a dogma in its own right. Yet, as scientists had strong psychological investments in speciesist values, along with career and economic investments in vivisection, they either ignored Darwin's emphasis on the continuum of evolution and the intelligence of nonhuman animals, or they interpreted Darwin in regressive ways that promoted speciesist, classist, racist, and elitist agendas. Beginning with Herbert Spencer (nicknamed "Darwin's bulldog" for his aggressive defense of natural selection theory), thinkers in the natural and social sciences, anthropologists, and sundry social elites transformed "Darwinism" — a theory about the mechanisms of biological evolution — into "Social Darwinism." This ideology involved a vulgar application of natural selection theory to society in ways that naturalized hierarchy and conflated differences between the natural and social worlds. Exquisitely suited for a class-divided society, capitalists seized on Social Darwinism to legitimate and naturalize their exploitative rule over labor. Invoking pseudo-ecological concepts such as "competition," "struggle," and the "survival of the fittest," defenders of a bastardized Darwinism used natural selection theory to frame social life as a contest, battle, and war, with the spoils going to the victors (i.e., the capitalist elite). Social Darwinism and the "might is right" ideology filtered into mass consciousness to bolster not only the domination of some humans over others, but also all humans over animals. For with their wits, alleged superior intelligence, and technological powers, humans "clawed their way to the top of the food chain," as the popular phrase goes, and their power was "right" by virtue of its might, irrespective of the circularity of such reasoning.

Thus, rather than interpreting Darwin's theory in a way that relates and reintegrates human beings with other species and natural processes, conceptual corruptions of natural selection have worked to alienate humans from one another, other animal species, and the natural world, while providing crude justification for violence, exploitation, and unrestrained extermination of nonhuman animals. Darwinism was not unambiguously progressive in its impact upon both human and nonhuman animals, but rather, *cut both ways*. Some interpretations emphasize animal intelligence, the evolutionary continuities of nonhuman and human animals, and the deep animalic roots of *Homo sapiens*. Other readings, however, toss out everything Darwin wrote about animal emotions and intelligence to return to the Cartesian view of animals as objects rather than subjects (see below). This regressive, humanist version of Darwinism shredded his conceptual quilt work uniting all sentient life. It demeaned nonhuman animals in order to deify human animals as omnipotent demigods for whom all things exist in relation to humans as a mere means to their ends.

Still grappling with Darwin's blow to the geocentric and anthropocentric worldview, Western culture had to confront the facts and consequences of a *third* discontinuity opened by the theory of the unconscious mind, such as advanced in the nineteenth century by Friedrich Nietzsche and, above all, in the early twentieth century by Sigmund Freud. Against the Christian/Cartesian view of the self as governed by a rational command center and the body

as a temporary housing for the immortal soul, Freud demonstrated that rationality and conscious thought are products of the body — epiphenomena of the subterranean, unconscious realm of existence governed by primordial instincts, desires, drives, and the sexual and violent urges of the Id.

But the same pattern is repeated here: the destabilizing effects of a discontinuity and decentering process forces Western theorists — elaborating ideologies that are anthropocentric, speciesist, rationalist, and humanist — to mend the conceptual tear that threatens to decenter the privileged place of the human in the universe. Damage control begins immediately through a series of *ad hoc*, increasingly threadbare justifications for clinging to one element or another of the premodern world picture. Thus, despite the revolutionary implications of Freudian theory, and the paradigm shift that established the primacy of the unconscious and body over the rational self, scientists and thinkers from various quarters reasserted rationality (along with related traits that included language, tool-making, and culture) as the essential and unique trait that separates humans from animals. These reactionary humanists constructed a double-sided fallacy, one that exaggerates the role of rationality in human animals as it minimizes the intelligence of nonhuman animals. Condemned as reactionary, Marxists and others did not trouble themselves with the Freudian provocation or the question of human animality in general.

Finally, Mazlish notes, a *fourth* discontinuity surface during the mid-twentieth century, with the rapid development of computer technologies and artificial intelligence. After confronting their separation from the cosmos, their animal origins, and the primacy of their subconscious being, humans were forced to reconsider their relation to machines. Just as Christians and other believers in God and immortality are repelled by the thought of their animalic origins, so too — being special creations of God with privileged status — they loathe being likened to machines. Contrary to the mechanistic philosophies of Hobbes and La Mettrie, humans want to be ensouled, immortal, and privileged in some way. From sublime thinkers to laypersons, humans have a need to feel wholly *other* to animals and machines, to be radically unique in their reason and self-consciousness, and to exist as stunningly singular in their possession of free will.

Yet, as the artificial intelligence of computers grows ever-more sophisticated and continues to surpass the capacities of human minds in many ways, people are forced to question yet another alleged ontological divide, the one separating humans from machines. Even “machines” are no longer mechanisms as traditionally described, since they are ever more closely approximating the biological operations of the brain through neural nets, parallel processing, evolutionary hardware, and the like. Moreover, when the self-ascribed "essence" of the human is stripped away, and human beings begin to merge intimately with their machines, fusing flesh with steel and silicon chips, human identity comes into question in disturbing ways.

As we create human-like computers and robots, we ourselves become ever-more like cyborgs by incorporating technology into the human body. While many resist the implosion of biology and technology, a bold cadre of technophiles, visionaries, futurists, and transhumanists embrace it as the next and inevitable stage in human evolution. In one variant of this scenario, our merger with machines would dramatically increase human intelligence,

happiness, and longevity, thus in effect creating a new posthuman species far superior to our current carbon-based model. In another version, humans will soon be able to create "spiritual machines" (Kurzweil) or "mind children" (Moravec) that constitute a new posthuman species far superior to our current carbon-based model.[8] Radical technophiles like Moravec envision humanity moving to a higher state of being and attaining immortality by merging their minds with computers. Far more than theories of evolution, these techno-utopias represent neo-Cartesian assumptions that mind is substance and body is an accidental trait as well as secular manifestations of the Christian quest for immortality.

The Human Chimpanzee

> "Man in his arrogance thinks himself a great work, worthy the interposition of a deity. [Yet it is] more humble and, I believe, true to consider him created from animals."
>
> Charles Darwin

Thus, since the opening of modernity five centuries ago, human beings have had to confront (for starters) four major discontinuities which problematized their alleged radical uniqueness and special status in the universe. In each case, "rational man" had to rethink human identity — his *species* identity common to all other humans, or rather, all those counted as "human" and as part of the valuer's community. In quick succession, the reflexive members of *Homo sapiens* had to overcome scientific and philosophical false dichotomies and illusions of separation from the *infinite cosmos*, the *animal world*, the *unconscious*, and *machines*. Humans had to engage, even if to deflect, the theoretical developments that increasingly decentered their place in a Platonic perfect unchanging universe allegedly constructed for them to lay down culture and "civilization" over nature, which has meaning only when seized for human purposes.

Those possessing the virtue (celebrated by Nietzsche) of "intellectual honesty" had to begin digesting the nauseating knowledge that the glorious celestial empire was not created in their honor. Rather, it gradually became clear, humans inhabited a small speck of infinite space on a miniscule planet floating in the cold darkness without inherent purpose. Irrepressibly, evidence mounted that humans emerged 5-8 million years ago from a diverse primate family. They co-evolved with other species, with their animality grounded in biological dynamics from which consciousness emerges. In the nineteenth and twentieth centuries it began to dawn on growing numbers of humans that *there are other kinds of minds in the universe*, both organic (animals) and inorganic (machines).

And yet, as we have seen, there is a dialectic between decentering and recentering. As happens so often, when humans are forced to face their contingency and limitations, they struggle to reinterpret and domesticate radical theories in a way that preserves their cosmic singularity, divinely-bestowed privileges, and supremacist identities. *But are we now as a species reaching a tipping point where anthropocentric and speciesist outlooks finally give way, or at least lose all intellectual credibility?*

While Mazlish ably describes four major challenges to human identity from the sixteenth century to the contemporary era, there are many additional developments in the decentering process and human identity formation that are important to highlight and thematize[9]. Many of the conceptual breakthroughs and revolutions in the last half century relate to a deepening understanding of animal minds and our own animality. After the four major blows to anthropocentric and speciesist identities inflicted by Copernicus, Darwin, Freud, and cybernetics, Richard Ryder — the English philosopher who coined the term "speciesism" — believes that, "We must now continue this process by discarding speciesism along with our other delusions or grandeur, and accept our natural place in the universe."[10]

The fact is that *only since 1859 has humanity begun to understand the forces of life and their origins and nature at all*. Mythology, religion, philosophy, and science all contributed to constructing myths, distortions, and false consciousness that failed to grasp the organic emergence of *Homo sapiens* in evolutionary processes. Archaeology dates back only to the late 1800s, and it did not become a systematic science until after World War II. Humans had virtually no conception of apes until the late nineteenth century, and accounts from the sixteenth to the nineteenth centuries describe gorillas as dangerous degenerates, beast-men, or monsters. In the eighteenth century writers such as Lord Monboddo believed that the great apes (chimpanzees, bonobos, gorillas, and orangutans) were races of primitive people ignorant of the ways of speech. Growing acquaintance with their physiology and behaviors, however, began to subvert human belief in their own uniqueness as it became increasingly obvious that primates were our closest biological relatives and that humans were part of an animal continuum and evolutionary process. Increasing knowledge of ape anatomy and behavior "subverted a traditional form of human self-confidence (…) the apes undermined convictions of human peculiarity and privilege. Gradually or fitfully, the process has continued ever since."[11]

Philosopher Raymond Corbey describes the threat and challenge posed to human identity with the discovery of the great apes:

> Apart from a progressing modernisation and secularisation and the growing influence of the natural sciences, a crucial factor which led to the profound change in the North Atlantic way of seeing the world was the discovery and the study of the apes and the early apelike hominides. Finally, it was no longer theology with its creation story which gave humanity its position within nature but the development of evolution. These newly discovered creatures, similar to humans but yet animals, turned out to be our closest relatives and therefore threatened traditional and well loved beliefs of human God-likeness and uniqueness. Nevertheless, the sacrosanct boundary between humans and animals which determined who could be owned, who could be killed, who could be eaten was not given up but redrawn. The exclusively human area was vigorously defended and again and again redefined … [it is important to describe] the involuntary withdrawal from former beliefs of human uniqueness which have been challenged over and over again by debates on apes.[12]

"Ecology" did not emerge as an official science until 1866, when German Darwinist Earnest Haeckel coined the term. As the study of organisms in their relation to one another and their

environment, ecology is an inherently holistic outlook that contextualizes the origin and nature of human animals within a larger web of life. Yet, whereas humans arrogantly assume they live in technological castles that hover above the natural world, ecology showed that they in fact are an extension and part of nature and are deeply interdependent on an inconceivably complex system of relationships. Ecology, indeed, is a humbling discipline, for it reveals that humans — who conceive of themselves as the highest form of life — are utterly dependent upon the smallest, "lowest," and most "mundane" forms. The earthworm, dung beetle, butterfly, and bacteria are far more crucial for the dynamics of the Earth than humans who, indeed, at this critical point in their social evolution are a destructive and disruptive force threatening all life systems of the planet.

At the beginning of the twentieth century it was believed that a large brain was the initial step and driving force of human evolution, a falsehood encouraged with the hoax of the Piltdown man. Until 1924, when Raymond Dart discovered the "Taung child" fossil in South Africa and identified it as a new species, *A. africanus*, anthropologists wrongly assumed that humans evolved in Europe or Asia rather than Africa, and they falsely believed that large brains developed before bipedality. Only in the 1950s (and more fully in the 1970s) did anthropologists discover more australopithecine fossils in Africa and thereby begin to understand that our earliest ancestors were more like non-human primates than modern humans. Archaeology bears direct relation on the construction of species identity. The discovery of "Lucy," for example, broadened the criteria of "human," it significantly pushed our ancestral line back in time, and it set up a line-drawing problem established on the dilemma of a slippery slope. As Felipe Fernandez-Armesto notes, "if we can accept Lucy as an ancestress, it helps to stretch the elasticity of the embrace in which we clasp each other, regardless of colour or creed, outward appearance or mental resources or moral worth."[13] But, he asks, why stop there? Why exclude still earlier generations of human ancestors? Why not include *Ardepithecus ramidus*, an apelike hominid capable of upright walking 4.4 million years ago, but nonetheless lived in trees? Or chimpanzees? How and where does one draw the line between human and nonhuman? Are there objective, non-arbitrary grounds for delineation?

Not until 1960, when Jane Goodall made her historic journey to Gombe National Park in Tanzania, Africa did human beings possess even a rudimentary understanding of the higher apes, specifically the chimpanzee. Using her pioneering method of "habituation," of patient observation that invited eventual acceptance or ignoring her presence, Goodall later discovered that infanticide, warfare, and murder were not behaviors unique solely to humans, but existed among chimpanzees as well. Such discoveries, in addition to the genetic confirmation of our evolutionary closeness to chimpanzees, are crucial for any informed discussion of human nature and identity.

In the 1960s and 1970s, researchers began to pioneer the genetic sciences and technologies that would prove crucial for an adequate understanding of human evolution. Linnaeus, Darwin, and others recognized that humans have significant physical and structural similarities with chimpanzees and gorillas, and on morphological grounds belong in the same general grouping. DNA analysis established just how close we are to the great apes, showing that humans and chimpanzees shared a common ape ancestor, and diverged from one another along different evolution paths some five to seven million years ago. Through genetic science,

scientists have established that humans share 95-98 percent of their genes with chimpanzees, such that *chimpanzees are biologically closer to us than they are to orangutans and gorillas*.

Scientists started understanding the details of our genetic relationships to apes, and in 1975 molecular genetics determined that chimps and humans are at least 96 percent alike in their DNA (and 99 percent alike for genes that encode proteins). In 2002, these findings were verified by the Human Genome Project, which decoded the human genetic structure. In an important 2003 study scientists at Wayne State University provided new genetic evidence that humans and chimpanzees diverged so recently that chimps should be reclassified as *Homo troglodytes*.[14] This change would make them full-fledged members of our Genus, *Homo*, such that they would reside with *Homo erectus*, *Homo habilis*, Neanderthals, and other "proto"-human types. Geographer Jared Diamond rightly categorized humans as the "third chimpanzee," along with common chimpanzees and bonobos.[15] Humans do not constitute a distinct Family, or even a singular Genus, but rather belong in the same Genus as chimpanzees and bonobos. If we think without our speciesist blinders, Diamond suggests, we can recognize that there are today three — not one — existing *Homo* species (with two in imminent danger of extinction because of the actions of the third). It may be disconcerting to Western Christian and Cartesian conceptions of humans as disembodied, eternal, singular substances, but we are not only "like" apes, we *are* apes, and African apes at that. Without an accurate comparative basis to our closest biological relative, we could not have produced an adequate understanding of ourselves, and we have been living in the "shadows of forgotten ancestors" (Carl Sagan and Ann Druyan).

In 1993, Peter Singer and Paola Cavalieri founded the "Great Ape Project."[16] The goal of the international project was to win basic legal rights for apes (life, liberty, and the prohibition of torture) and to free them from the status of property. They advocated a United Nations Declaration of the Rights of Great Apes which would grant them rights to liberty and would free all captive great apes (over 3,000 are currently held in research laboratories in the US alone). In addition to the genetic similarities between great apes and humans, they emphasized their commonality with us as "persons" who possess complex emotions, rationality, self-awareness, and awareness of themselves as distinct beings with a past and future, and argued that chimpanzees, bonobos, gorillas, and orangutans belonged in a "community of equals" with humans. Indeed, as I write, there are cases pending in international courts that could officially recognize great apes as persons.

The Conceptual Revolution of Cognitive Ethology

> "The animal is immediately one with its life activity. It is not distinct from that activity; it is that activity. Man makes his life activity itself an object of his will and consciousness. He has conscious life activity. It is not a determination with which he directly merges. Conscious life activity directly distinguishes man from animal life activity. Only because of that is he a species-being."
>
> Karl Marx

Beginning in the seventeenth century, modern science constructed a mechanistic paradigm which views animals as automata or machines. From Descartes to sociobiology and behaviorism in the present, the modern tradition cast animals in the role of brutes or machines who can neither feel nor think. Students trained in this paradigm quickly learned to avoid reference to the subjective life of animals unless they desire ridicule. Under the spell of behaviorism, scientists re-describe the love a chimpanzee might experience as "attachment formation," the anger of an elephant as "aggression exhibition," and the aptitude of a bird as a "conditioned reflex." Journals typically refuse to publish papers that allude to animal thoughts or emotions.

Having misled us for so long about animals, science is initiating a revolution in our understanding. Through evolutionary theory, genetics, neurophysiology, and experimental procedures, many scientists are providing strong evidence that animals feel and think in ways akin to us. As we saw above, the changes began with Charles Darwin. His theory of natural selection informed us that human beings are in fact animals and, as such, they evolve according to the same evolutionary dynamics as nonhuman animals. In *The Origin of Species* and later works such as *The Descent of Man* (1871) and *The Expression of Emotions in Man and Animals* (1872), Darwin established the animal roots of humanity, and described close psychological and behavioral relations between humans and other animal species. He argued that humans are different from animals "in degree, not kind." Darwin led the way in showing the evolutionary continuum throughout the animal world, such that there is no dividing point separating unintelligent and intelligent life, but rather a development of consciousness, intelligence, subjectivity, choice, and freedom stretching from elementary organisms to complex thinking animals. Scientists embraced his theory of evolution while ignoring his ethological work, for this they found repugnant to their speciesist prejudices and subversive to business-as-usual in the vivisection research and pharmaceutical industries where the pursuit of profit cannot be troubled by moral conscience and ethical truths.

Donald Griffin's work dealt powerful blows to the behaviorist tradition of John Watson and B.F. Skinner.[17] Considered to be the father of cognitive ethology, and famous for discovering bats use echolocation to map their terrain, Griffin took seriously the notion that animals can think and made compelling arguments to that effect. Since Griffin's work, a rich scientific literature has been assembled proving the sophistication and flexibility of animal minds. Through ingenuity and countless instances of observation and experimentation, a solid case for animal intelligence has been established that is changing not only our view of animals, but ourselves.[18] The evidence for animal intelligence is vast, substantial, and overwhelmingly indicative of the presence of complex minds, social life, and behaviors in nonhuman animals.

Clearly, results can be interpreted in different ways, and staunch defenders of behaviorism remain unconvinced. In 1984, C. Lloyd Morgan formulated the "law of parsimony," a variation on Ockham's razor, which states that one should not appeal to a "higher" function (intelligence) of organisms when a "lower" function (instinct) will adequately explain a behavior. Behaviorists used his principle in an aggressively reductionist manner, subsuming all behaviors to crude instincts and learning mechanisms. But Morgan himself admitted animal intelligence exists, and his principle establishes just the opposite. When confronted by the overwhelming evidence of animal intelligence, the lower functions do not explain the behaviors; rather, they make sense only through reference to higher level principles. In other

words, the simplest explanation, the one not saddled with *ad hoc* qualifications, is an appeal to the flexible and thinking qualities of animal minds.

While this account of the emotional and intellectual richness of animals may touch the layperson, it offends the hard-nose scientist. From a mechanistic scientific perspective, it is nonsense to speak of animal emotions and minds, since they can't be observed or measured. It is “anthropomorphic” to ascribe human-like characteristics to animals. It is “unscientific” to name them as if they were people. And such stories at best are merely anecdotal. Today, this situation is changing decisively as science undertakes an exciting paradigm shift that embraces the study of animal emotions and minds. Until the last few decades, human beings have languished in the Paleolithic Era of their knowledge about animals. As evident in a spate of recent books and the new discipline of "cognitive ethology" that studies animal intelligence, science finally is beginning to fathom the depth of animal complexity. It revolutionizes our shallow understanding of nonhuman animals, while altering our vain image of ourselves.

From Donald Griffin’s pioneering work in the 1980s to the recent studies of Roger Fouts, Frans de Wall, Marc Bekoff, Steven Wise, and others, ethology has demonstrated that animals have far more complex thoughts, feelings, and social lives than most humans dared to imagine. [19] Rooted in a dualistic and ahistorical perspective, modern science failed to grasp the developmental continuum of intelligence, social life, and subjectivity within massive spans of evolutionary change and development. Mechanistic science submerges all pre-human evolution into a vast vat of unarticulated consciousness, viewing animals as automatons or machines who merely react to the world instinctually and passively play out their biological programming. The belief that animals are primitive only betrays the archaic limitations of the human mind and its inability to grasp the otherness of animal life and behavior.

This paradigm is now utterly bereft and bankrupt, and many quarters of science and philosophy have abandoned Cartesian mechanism, behaviorism, and speciesist dualism. In the shift to a post-Cartesian science, there are now scores of books, spates of documentaries, and a proliferation of papers that document the breadth and depth of animal complexity and intelligence, chronicling one staggering discovery after another. The pace of discovery is such that, literally, our views of nonhuman animals are changing by the day. We are recognizing distortions and fallacies on each side of the ontological chasm Western society dug between human and nonhuman animals, and ethology has broken down the thick walls of separation. Just as many humans are not rational in many ways, so animals are rational in many ways. Humans overestimate their own rationality as they underestimate the rationality of animals. Similarly, whereas humans have reduced animals to biology and thus denied them culture, so humans, focusing only on the voluntarist facets of their culture, have failed to grasp the biological dimensions of human culture. [20]

Cognitive ethology corroborates the conclusion of common sense and unbiased observation, namely, that animals have rich and complex emotion, intellectual, and social lives — as it far exceeds the data of everyday life to advance truly startling conclusions. Only the most retrograde Cartesian still denies or is skeptical of the fact that animals are sentient, and we know, moreover, that have every feeling we have, including fear, stress, loneliness, sorrow, jealousy, embarrassment, pride, empathy, love, happiness, and joy. In their vivid vignettes,

Jeffrey Masson and Susan McCarthy describe how Michael the gorilla loved opera singer Luciano Pavarotti; how Hoku the dolphin grieved over the death of his marine park companion, Kiko; and how Flint the chimp even died of grief upon the death of his mother, Flo.[21] It is a well-known fact that elephants mourn their dead, enact burial rituals, and seemingly show an awareness of the significance and permanence of death. Animals know joy as well as sorrow, and can be playful as well as serious. They also possess an aesthetic sense, and sense of humor, as evident in the behavior of birds who delight in dancing and chimpanzees who love to bang drums, throw balls, and paint.[22]

Complex forms of intelligence run broad and deep throughout the world of animals. Birds, for instance, have complex memories and abilities to map vast spaces (the speciesist slander "bird brain" could not be more spurious) and some bird species use tools and exhibit problem-solving skills as well. Many animals have abilities to count simple amounts and to recognize patterns and visual relationships and analogies – often better than children and even college undergraduates! There is strong evidence that "higher" mammals such as whales, dolphins, gorillas, and chimpanzees have significant rational and linguistic abilities. Koko the gorilla has a sign vocabulary of 500 words and does internet chats. Alex the African Grey parrot could name over 100 different objects, 7 colors, and 5 shapes; moreover, he can count objects up to 6 and speak in meaningful sentences.[23] Chimpanzees have a repertoire of at least thirty sounds that have distinct meanings and express emotions. Given the tools of American Sign Language and lexigram symbols, great apes are communicating to human beings and one another their needs, desires, and thoughts. Various tests with mirrors and hidden objects suggest that chimpanzees and bonobos might have self-consciousness and awareness of other minds. Dolphins communicate their individuality to each other through signature whistles and whales have a repertoire of over six hundred distinct social sounds. Thousands of experiments in the field and laboratory have demonstrated that animals such as prairie dogs, squirrels, and even chickens convey not only emotion but also information in their complexly differentiated alarm cries for the presence of predators.

Acknowledging only one model of intelligence and communication — that of *Homo sapiens* — scientists have argued, since animals don't speak or reason like we do, they don't have minds at all. In expecting animals to satisfy human criteria of language and intelligence, scientists have, after all, succumbed to the dreaded sin of anthropomorphism. But anthropomorphism need not be a scientific sin. Clearly, we don't want to project onto animals characteristics they don't have. But if there are core commonalities between nonhuman and human animals, what Griffin calls "critical anthropomorphism", is our best access to understanding animals, and "objective detachment" will block insight every time.

It is not that many animal species cannot think, symbolize, and communicate in sophisticated ways, but that we could not figure out how to open their minds to us and how to interpret their sounds and behaviors. It is crucial to emphasize that intelligence operates in forms other than human induction and deduction, and that meaning can be transmitted through gestures, expressions, sounds, and movements, and is not restricted to the conventions of human syntax, although monkeys understand basic rules of grammar.[24]

Even more devastating to human claims to singularity, many animals have a clear sense of

morality, justice, and fair play.[25] Great apes, elephants, wolves, whales, dolphins, hyenas, rats, and mice are capable of a wide range of moral behavior. Many believed that only humans shared food, but bonobos and chimpanzees also enjoy this ritual. Animals are not merely self-interested, unreflective, non-feeling beings locked into a violent and competitive struggle for survival with one another, they have an empathetic and altruistic side. This is evident not in their capacity for grief, in interspecies care and nurturing, but in acts that risk their own lives to save the life of another. The empathetic capacity of animals was vividly demonstrated in one experiment in which hungry rhesus monkeys refused food if doing so meant another monkey would receive an electric shock.[26] Empathetic and altruistic actions suggest that animals should be viewed as moral agents who act with awareness, deliberation, care, and concern toward one another. The "gladiator view of life" was never one propounded by Darwin, who rather emphasized the evolutionary importance of cooperation as much as competition, as did Kropotkin's important book, *Ethics: Origin and Development*.[27]

Far from being automatons governed by rigid biological imperatives and crude instincts, ethologists have shown that animals such as chimpanzees, monkeys, and dolphins form genuine *cultures*, whereby knowledge and behaviors are transmitted by teaching and learning rather than acquired through genetic inheritance.[28] In *Good Natured: The Origins of Right and Wrong in Humans and Other Animals*, Frans de Waal argues that "the great apes" (chimpanzees, bonobos, orangutans, and gorillas) laid the foundation for many human behavioral and familial dynamics. Both he and Jane Goodall conclude that chimpanzee societies demand complex social skills far beyond that allowed by behaviorism. Their world is governed not only by instincts and chemicals, but also through rules and norms. Like us, they live in a culture of shared communication and learning that is passed down from generation to generation. The intelligence of primates is not innate and fixed, but rather, like ours, an important part is socially constructed in the context of culture and technological innovation.[29]

Chimpanzees, rhesus monkeys, dolphins, elephants, and other nonhuman species are not just animals, they are *political* animals, and quite cunning and Machiavellian ones at that, who fight for foods, space, sex, and power and social status.[30] In their political lives, they make conscious decisions and strategic choices, and through sounds, groupings, alliances, and giving or withdrawing of support even make collective votes. Humans did not invent power politics. Much light can be shed on human behavior once we drop the singularity thesis and relate humans to their primate ancestors. Humans did not invent morality and justice, for instance, these social behaviors evolved in an evolutionary context that long preceded human origins. By looking at nature through the distorting lens of speciesism, and in ignorance of contemporary scientific developments, one cannot possibly understand either human or nonhuman animals in any adequate way.

Closing Walls and Conceptual Claustrophobia

> "Humans —who enslave, castrate, experiment on, and fillet other animals—have had an understandable penchant for pretending animals do not feel pain. A sharp distinction between humans and "animals" is essential if we are to bend them to our will, make them work for us, wear them, eat them—without any disquieting tinges of guilt or

regret (…) They are just too much like us."

Carl Sagan and Ann Druyan

The rigid boundaries between human animal and nonhuman animal keep shrinking as it becomes increasingly obvious that *Homo sapiens* is not a monad, ruggedly independent, or a God above, but rather part of a vast, differentiated evolutionary continuum. The rich science of cognitive ethology supports Darwin's theory that humans differ from animals in degree, not kind, such that human forms of thinking, self-awareness, intentionality, communication, language, and social interaction are *products of evolution that stem from our primate ancestors and are shared by numerous other species to varying degrees*. "Human intelligence," note Dickie and Roth, "may be best likened to an upgrade of the cognitive capacities of nonhuman primates rather than an exceptionally advanced form of cognition."[31] The false dualisms and synthetic walls separating humans and other sentient species are tumbling down, and we cannot put the Cartesian figure of Humpty Dumpty back again.

Only humans, we thought, experience a deep and broad range of emotions, such as love, joy, grief, jealousy, and embarrassment. But science has demonstrated these same feelings among many animal species. Mammals possess a limbic system and neocortex, the functions that enable human beings to experience emotions and have abstract thoughts. All mammals possess oxytocin, a hormone involved in the experience of pleasure during sex and that plays a key role in mother-infant bonding. Female bonobos and chimpanzees have been seen to put dead rats on their heads and "primp" themselves in the mirror, suggesting that even fashion and vanity are not unique to humans. Humans alone, we have been told repeatedly, grieve over and bury their dead in some type of ritualized ceremony, yet grief and mourning emotions exist in many animals and elephants enact burial rites for their dead.

For millennia, it was thought that only humans — *Homo faber* — make and use tools, until recent discoveries that chimpanzees, birds, and other species do also (e.g., chimpanzees use sticks to extract termites from their mounds, apply stones to crack open palm nuts, and craft spears to kill bush babies). In February 2007, a stunning study documented the methodical ways in which chimpanzees use self-fashioned spears to hunt bush babies (as if not interesting enough, the report also showed that it was only females who make and use the wooden spears).

The dogma that only humans — *Homo loquens* — have complex forms of language and communication prevailed until it became clear that chimpanzees, dolphins, whales, prairie dogs, and other animals do as well. To disparage these as not "real" languages because they do speak human languages and allegedly have no sense of syntax or grammatical rules is question-begging and provincial in its definition of language and communication. Washoe, Koko, Kanzi, and other primates fluent in American Sign Language or other symbolic languages demonstrate that symbolic communication is not unique to human animals.[32]

With traits allegedly unique to humans running out, philosophers and scientists claimed that only humans have minds complex enough to allow a sense of *self-consciousness or self-identity*,

but, alas, chimpanzees and other animals demonstrated significant degrees of self-consciousness too. Parallel to Levi-Strauss' defense of the "savage" mind, which is no better or worse than the "civilized" mind, but rather a different incarnation of the same human capacity, so Marc Hauser argues that all animal brains have to cope with similar problems, and therefore each species has its own special "mental toolkits" for processing information about objects, number, and space, and so on.[33] Variations lead to differences among species, with *Homo sapiens* evolving toward an unprecedented complexity in many ways. Still, Hauser concludes, "We share the planet with thinking animals (…) Although the human mind leaves a characteristically different imprint on the planet, we are certainly not alone in this process."[34]

Many claimed that only humans live in *cultures*, in which behaviors and norms are transmitted by learning rather than inheritance. A classic case is Murray Bookchin, a blatant speciesist (or "eco-humanist" as he sometimes called himself) who thought that if humans were gone nothing of interest would exist on this planet.[35] Bookchin relegates animals to "first nature," along with rocks, trees, and other inorganic forms of matter without feelings, awareness, consciousness, and thought, and reserves the category of "second nature" for humans alone. Despite his salient emphasis on gradations of consciousness, subjectivity, and choice throughout biological and social evolution, Bookchin nonetheless constructs a static, dualistic, and overly-simplistic scheme which, in cut-and-dry fashion he sharply divides nonhuman and human animals, with the upshot, of course, of advancing another "enlightened" Leftist "moral philosophy" of animals that fails to rise above the hidebound welfare views voiced by every exploiter that impugn suffering but not killing, and "needless" cruelty but not exploitation, and the reduction of animals to commodities, resources, and things.

But Bookchin's crude bifurcation between first and second nature, with humans representing the only form of "intelligence" (and not an impressive one at that!) on the Earth, has been refuted by science itself, which shows gradations, not a gulf, between nonhuman and human animal cultures. Like humans, chimpanzees, bonobos, and other species also live within complex societies, whereby they formulate a technics and a moral outlook, and transmit knowledge through communication, teaching, and learning.[36] As de Wall demonstrates in vivid detail, chimpanzee societies are not instinct-driven, but rather *rule-governed*: chimps know what their place in the hierarchy is, what is expected of them, and when they consciously break the rules (such as when a subordinate male sneaks sex with the female of the alpha male).[37] They think and act in terms of conventions, hierarchy, rules, consequences of breaking rules, and mutualism.

In fact, chimpanzee societies are a likely source of human morality in their creation of a stable family life community, implicit moral rules defining expectations and obligations, looking after one another (e.g., by grooming and removing ticks from one other's fur), and possessing a general community concern. "Human morality," de Waal says, "can be looked at as [primate] community concern made explicit."[38] Humans do not generate novel traits *ex nihilo*, but rather elaborate on preexisting dynamics they acquire from their great ape ancestors and many of which can be found in other animal species.

Thus, for millennia, the traits, qualities, and essences Western cultures attributed to humans alone and used to construct species identities were anchored in the sandy ground of bogus dualisms. In *Shadows of Forgotten Ancestors*, Sagan and Druyan enumerate over thirty characteristics that have been used to demarcate human identity apart from other animals, and show that every criterion of alleged human uniqueness is found also in chimpanzee cultures to some degree. As ethologist Jonathan Balcolmbe quips, "The once-long list of uniquely human traits is dwindling almost as fast as you can say «human supremacy.»"[39] Those trying to ascribe absolute differences between humans and nonhumans hobble on stilts of ignorance and run aground on clumsy dichotomies.

Rethinking Human "Uniqueness"

"He who understands baboons would do more towards metaphysics than Locke."

Charles Darwin

The much vaunted claim that humans are "unique" is uninteresting, uninformative, and tautological. *Every* species is unique, by definition: the hawk, the rattlesnake, the silverback Gorilla, the African elephant, and the ocelot are all unique in relation to one another. So humans are not even unique in being unique, this is a mundane biological property associated with natural selection and speciation.

The rationalist view of human beings as information processors whose choices and actions reflect preferences mediated and moderated by reason and logic is as false as the Cartesian and behaviorist views of animals as creatures of instinct and deep genetic programming devoid of intelligence and complex behaviors and social life. To be sure, in avoiding the fallacy of dualism, which radically separates human from "animal," so we must avoid leaping to the opposite extreme and committing the fallacy of monism, whereby we reduce humans to the broad category of "animal" and lose the uniqueness and specificity of "human" characteristics and traits. But how "unique" are we? And what is the moral upshot of our specificity, such as it pertains to our self-assured right to exploit "inferior" animals for our "higher" purposes and "superior" nature?

Certainly, no other species, to my knowledge, has written sonnets or sonatas, solved algebraic equations, or meditated on the structure of the universe. There is no comparison between the counting skills of a bird and the mathematics of Einstein, between the rock used by a chimpanzee to crush a nut and the atom smashers devised by human engineers. But humans are not unique in their possession of a neocortex; of complex emotions like love, loneliness, empathy, and shame; of sophisticated languages, behaviors, and communities; and even of aesthetic and moral sensibilities. Human beings stand out in the degree to which they have *developed capacities and potential for reason, language, consciousness, aesthetics, ethics, culture, and technology* far beyond chimpanzees and other animals.

Not only do nonhuman animals have culture, art, technology, and morality, *they invented them* (or were active agents of their development) within their social context, environmental

conditions and constraints, and evolutionary dynamics. Humans are animals and any human capacity or potential pre-existed in other animals, and humans could only enjoy these capacities as they do because of the vast sweep of evolutionary development and animal dynamics that existed prior to *Homo sapiens* and our ancient ancestors. Humans are ingrates who withhold due credit to their primate and animal ancestors for "human" traits; in a perverse irony characteristic of a self-serving, violent species always in bad faith, humans deny these traits — even in some rudimentary form — to nonhuman animals in order to legitimate the exploitation and extermination of fellow beings, all perfectly legal in the global speciesist system that views animals as property, resources, and commodities, and little else.

Before going too far down the road of human singularity, let us not forget that nonhuman animals have traits that humans do not have and, indeed, that they sometimes possess these in more advanced form. Just as so often animals are faster, stronger, and more agile and graceful than humans, so in some ways they are smarter and morally superior. The speciesist assumption is that the dumbest human is more intelligent than the smartest animal. Yet African Gray parrots, pigeons, and chimpanzees easily outperform children and adults alike in numerical, memory, spatial, and categorization![40] Further, one might consider animals morally superior in the sense that they often exhibit more kindness and altruism than humans and rarely engage in organized violence, systematic cruelty and torture, warfare, and mass killing. Animals prey on, eat, and kill one another, but, with the rare exception perhaps of chimpanzees — not coincidentally our closest biological relatives — they are not pathologically obsessed with control, power, domination, violence, killing, warfare, status, and wealth.

Human beings are bipedal, big-brained, language-using, toolmaking mammals; they are descendents of apes, who acquired sophisticated reasoning and linguistic skills. Humans belong in the same genera as other apes, for after chimpanzees and bonobos we are the "third chimpanzee" (Diamond). Humans are the sole heir of their Genus: the species *Homo sapiens sapiens* (humans in their most recent form) that distinguished itself 40,000-50,000 years ago with its enlarged brain, advanced technologies, and ruthless penchant for violence, aggression, and war. We current humans, then, are descendents of the "winners" of an evolutionary competition in which Neanderthals and other humans or human-like species were the "losers," and countless nonhuman animal species were bludgeoned into extinction along the path of our fabled "ascent" to the "top of the food chain" and the sovereign kings overseeing the Earth and their animal servants.

The definition of humanity usually produces paeans of cultural brilliance through millennia of myth, religion, philosophy, art, music, literature, dance, architecture, and science. The praise of humanity's multi-faceted achievements is well-deserved, but this stunning radiance also has a macabre and dark side that is an inseparably part of human history and nature; it involves an equally long history of violence, warfare, massacres, genocide, hierarchy, domination, colonization, environmental destruction, and extermination of other species. Astonishingly, the very same species that produced rock paintings in the caves of Lascaux, the Parthenon, Hamlet, the Sistine Chapel, and the Eroica Symphony also operated the ovens of Dachau, dropped atomic weapons on civilian populations in Japan, and fertilized the killing fields of Cambodia with bones and blood. As *Homo ambiguous*, we are a Janus-faced species capable of good and evil, creativity and destruction.

Homo sapiens is a brash, brilliant, arrogant, and violent species that has evolved rapidly and grown exponentially. In the short time of its existence, human beings have colonized the earth; they have depleted its resources, decimated other species, mowed down its rainforests, denuded its land, befouled its air and water, and even altered its global temperature. From precarious origins on the African continent to global domination, humans survived — whether due to superior intelligence, ability to adapt, or just ruthless cunning and conquering — where other *Homo* species perished. Moving from prey to predator, from hunted to hunter, human populations grew, expanded, and swarmed planet Earth, as they now embark on the project of terraforming other planets to carry their evolutionary adventure into the infinite depths of space, just as the ground is crumbling everywhere around them on *terra firma*.

In the era of planetary ecological crisis signaled by phenomena such as species extinction, rainforest destruction, desertification, resource shortages, and global warming, the advanced intelligence that inspired the appellation "wise man" turns this marker into a satire or tragic irony. If intelligence and wisdom entails the ability to survive, exercise foresight, and adapt to one's environment, then dolphins, whales, and countless other species are far more intelligent than human beings. Dinosaurs lived for hundreds of millions of years, and *Homo erectus* endured for over a million years, but *Homo sapiens sapiens*, after only fifty thousand years of existence, may not survive another thousand years, or even another century or two.

For all their sophistication, human beings are still primitive animals. Their neocortex — the seat of language, creativity, and abstract thinking — rests on the ancient limbic and reptilian areas of the brain that evolved millions of years before reason and still condition thought and behavior. Humanity's fancy philosophies and social contract theories are erected upon social relations and behaviors established by their primate ancestors. All too often, humans are guided by "jungle" directives, unable to develop compassion, to cooperate, to share, to create community, to co-exist with otherness, to use reason, and to resolve conflicts with dialogue and negotiation rather than through war and violence. However influential their sophisticated social norms, conventional rituals, and cultural overlay, humans remain primates who carry within them a long evolutionary history shaped by natural selection, tribalism, and survival-oriented xenophobia predicated on the dichotomy between "Us" and "Them."

Whether cooperating with one another, adhering to the Golden Rule, or forming gangs and waging war, our primate past could well be an influencing factor and rather than prohibit consideration of it as politically incorrect and "reactionary," it is far more important we confront it head-on in order to develop new behaviors and learning strategies that can at least dampen some of our primordial Machiavellian machinations and proclivities toward aggression, power, and hierarchical control, as well as temper any utopian fantasies about perfectly harmonious and peaceful societies, and the socialist "human engineering" programs that often have accompanied these Rousseauian visions.[41]

Animals: The Missing Element in the Radical Equation

"The illiterate of the 21st century will not be those who cannot read and write, but

those who cannot learn, unlearn, and relearn."

Alvin Toffler

After successive intellectual revolutions and paradigm shifts over the last few centuries, *Homo sapiens* has been knocked off its pedestal repeatedly, and now flails about in the winds of uncertainty and the tempests of irrevocable change, whipped up all the more powerfully by scientific breakthroughs and technological revolutions.

We cannot overlook an amazing paradox. It is an odd but revealing phenomenon that a species which so arrogantly prides itself in its alleged unique skills in reason and communication has not yet attained an accurate understanding of itself. This advanced "intelligence" of humans, moreover, is in the advanced stages of exterminating our closest biological relatives, along with millions of other animal and plant species, thereby ensuring that *Homo sapiens* will die as it was born — in ignorance of its own nature and the other animal species vital for an accurate self-understanding.

"Throughout recorded history," Armesto rightly notes, "almost every supposedly distinguishing feature by which humans have identified and differentiated themselves from other creatures, classified as non-human, turns out to be mistaken or misleading."[42] Humans have clouded the analysis of their nature with irrational beliefs, religious fictions, primitive mythologies, God-complexes, narcissism, logical fallacies, philosophical illusions, and scientific dogmas. Speciesism, carnivorism, patriarchy, rationalism, Social Darwinism, Eurocentrism and other ideologies emanating from hierarchical thinking and social institutions have created a distorted view of history and of human nature, and of animals and the Earth as well. Although recent advances in science and scholarship have refuted numerous myths about human nature and nonhuman animals as well, falsehoods persist because they promote elitist agendas, stroke the frail human ego, comfort human vanity, reinforce anthropocentrism, and, certainly, promote and legitimate the agendas of animal exploitation industries whose filthy lucre is derived from the blood and suffering of tens of billions of animals every year, a number that tragically continues to rise in numerous sectors, including vivisection and — above all — consumption of animals for food.

Traditionally, the riddle of human existence has been pondered through mythology and religion; today, however, we know that an adequate understanding of human nature depends on science. Although modern science — like religion, philosophy, and literature throughout Western history — has itself perpetuated pernicious errors and myths about human and nonhuman animals alike, this is beginning to change in certain sectors of knowledge. In recent decades, there have been dramatic breakthroughs in science that have advanced understanding of human evolutionary history, the development and nature of nonhuman animal species, and ecological systems. Molecular biology, anthropology, paleontology, genetics, and other scientific disciplines, as well as sophisticated computer technologies are revolutionizing our self-image through more accurate glimpses into the history and structure of life.

Ethology in particular has been progressive and liberating. It has shattered Cartesian and

behaviorist views of animals as machines or simple pre-programmed organisms devoid of thought or intentionality, and is only now liberating us from the *pre-scientific era* of understanding animals. During the European "Age of Discovery," "civilized" society debated whether the island peoples seen by Columbus were fully human and equipped with minds and souls, and whether African pygmies were human or sub-human in nature. From our "enlightened" and "progressive" positions in the twenty-first century, we may laugh at the racism and ignorance of such views, without appreciating the fact that until only a few decades ago, scientists and philosophers looked upon animals with similar crudeness, ignorance, bias, and a discriminatory speciesism as illicit and menacing as colonial racism.

Once we see what flimsy, fallacious, and corrupt constructs anthropocentrism and speciesism are, and how they are deeply embedded into the philosophies, values, and narratives of Western "civilization," including the "radical alternatives" to modern capitalism, we can begin to grasp their destructive effects and implications. The systemic institutional changes needed to avert social and ecological catastrophe must be accompanied by a parallel conceptual revolution that involves the construction of new values and species identities.[43] Ethically progressive and truly inclusive, the new outlook — not only post-capitalist, but also post-anthropocentric, post-speciesist, and post-humanist — would also be scientifically valid, by accurately representing the true place of *Homo sapiens* in the sentient and ecological communities in which it finds itself enmeshed.

Although an intellectual avant-garde is pulling humanity out of the quicksand of ignorance, unenlightened views persist throughout all sectors of society and on the whole *we are still in the Dark Ages* of understanding other species and ourselves as well. While painful enough to contemplate the illiteracy and ignorance of the general population — such that, for example, the majority of citizens in the US believe in angels, the Devil, and creationism — it is particularly disturbing to see virtually all sectors of "progressive" liberal and Left cadres holding atavistic moral and scientific views toward nonhuman animals, as they lay claim to being the most "progressive," "enlightened," and secular sectors of society and who traditionally have championed science over dogma, superstition, and religion.

If humans have for so long failed to understand animal minds it is because their own stupidity, insensitivity, and deep speciesist bias have for so long blinded them. But now the blinders are coming off, and it is time Leftists take their own off and wake up to the fact of the ethological revolution and its profound implications for human identity, our moral relationships to nonhuman animals, and to politics. While it took the Left a good century to catch onto the importance of ecology, and to begin merging concerns such as justice and autonomy to sustainability and ecology, the Left has consistently devalued or ignored the plight of animals, failing to understand this as a profound moral issue in its own right, and as an indispensible lens for understanding the current global social and ecological crisis.

There can be no full and adequate debate of the systemic problems of capitalist society, of the origins and dynamics of hierarchy, and of a future rational, autonomous, ethical and ecological society until we address the ten thousand year legacy of speciesism and the domestication and exploitation of human over animal. We cannot understand instrumentalism, hierarchical domination (whereby separation of human from animal provided the philosophical basis to deny women and people of color rational and human status), or the current ecological crisis

without engaging speciesism and the domination of humans over animals.

Until the Left engages the "animal question," in short, it cannot reclaim the mantle of progressive thinking in the moral and scientific realms; it cannot advance the development of new values and identities; it cannot understand the origins and dynamics of hierarchy. Much of this work can begin once the Left overcomes the last remaining socially acceptable form of prejudice, discrimination, exploitation, violence, and mass slaughter — such as stems from and is legitimated by speciesism — and begins to address the scientific findings, and moral implications of, cognitive ethology.

By ignoring this recent and profoundly important scientific revolution, one that has direct moral implications and carries the potential for a new enlightenment and a comprehensive ethics of life, the Left has forfeited any claim it could possibly have to moral leadership, progressive values, and radical politics; it has become increasingly obvious that the deficiencies of Leftist thought toward the animal question vitiate its ability to address pressing social and environmental crises. And this is a tragic loss, for only radical theorizing and revolutionary politics of social movement can steer us out of the crisis that threatens humans too with extinction, but it is one that must grasp the systemic connections linking the exploitation and devastation of humans, nonhumans, and the Earth.

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[1] On recent scientific and technological revolutions and their implications for human identity, see Steven Best and Douglas Kellner, *The Postmodern Adventure: Science and Technology Studies at the Third Millennium* (New York: Guilford Press, 2001).

[2] On the importance of mediating and combing animal, human, and Earth liberation movements into one "total liberation" struggle, see Steven Best, *Animal Liberation and Moral Progress: The Struggle for Human Evolution* (Lanham, Maryland: Rowman and Littlefield, forthcoming).

[3] For a powerful analysis of the origins of hierarchy in the transition from hunting and gathering tribes to agricultural society, and the crucial role of the "animal question," see Jim Mason, *An Unnatural Order: Roots of Our Destruction of Nature* (New York: Lantern Books, 2005).

[4] David Ehrenfeld provides a classic and still valuable critique of humanism in his book, *The Arrogance of Humanism* (Oxford: Oxford University Press, 1981).

[5] Bruce Mazlish, *The Fourth Discontinuity* (New Haven and London: Yale University Press, 1993).

[6] David Orr, cited at: http://www.ruf.rice.edu/~cses/csessite/restricted/EreadDocs/Orr_chapter_9.pdf.

[7] J. B. Bury, *The Idea of Progress: An Inquiry into its Origin and Growth* (New York: Dover Publications, 1960: 160-161).

[8] See Ray Kurzweil, *The Age of Spiritual Machines. When Computers Exceed Human Intelligence* (Cambridge, Mass: MIT Press, 1999); and Hans Moravec, *Mind Children: The Future of Robot and Human Intelligence* (Cambridge, Mass.: Harvard University Press, 1988).

[9] In *The Postmodern Adventure*, Kellner and I sketch the possibility of a *fifth* discontinuity that could emerge either from the possibility of a superior alien intelligence or from genetic engineering of advanced posthuman types.

[10] Richard Ryder, *Animal Revolution: Changing Attitudes Toward Speciesism* (Oxford and New York: Berg,

2000: 247).

[11] Felipe Fernandez-Armesto, *Humankind: A Brief History* (Oxford: Oxford University Press, 2004: 62).

[12] Richard Corbey, *The Metaphysics of Apes: Negotiating the Animal-Human Boundary* (Cambridge: Cambridge University Press, 2005). The citation is from his summary of this book at: http://www.vorlesungen-tierrechte.de/test/ilar2.php?area=1&lang=en.

[13] Armesto, *Humankind*, p. 130.

[14] See "Chimps genetically close to humans," *BBC News* (Tuesday, 20 May, 2003), http://news.bbc.co.uk/2/hi/science/nature/3042781.stm.

[15] Jared Diamond, *The Third Chimpanzee: The Evolution and Future of the Human Animal* (New York: HarperCollins Publishers, 1992).

[16] Peter Singer and Paola Cavalieri, *The Great Ape Project: Equality Beyond Humanity* (New York: St. Martin's Press, 1994).

[17] See Donald Griffin, *Animal Thinking* (Cambridge, Massachusetts: Harvard University Press, 1984); and *Animal Minds: Beyond Cognition to Consciousness* (Chicago: University of Chicago Press, 2001).

[18] In a review of Griffin's *Animal Thinking*, E. A. Wasserman concluded, "No statement concerning consciousness in animals is open to verification and experimentation" (cited in Griffin, *Animal Minds*, p. 147). This is simply false, for the ethological literature abounds with examples of ingenious experiments which have been designed to test the emotional sensitivities and intelligence of animals. Marc Hauser's book, *Wild Minds: What Animals Really Think*, discusses experimental designs where hypotheses about animal emotions and minds are confirmed, refuted, or left uncertain.

[19] See Roger Fouts, *Next of Kin: What Chimpanzees Have Taught Me About Who We Are* (New York: William Morro and Company, 1997); Frans de Wall, *Chimpanzee Politics: Power and Sex Among Apes* (Baltimore: Johns Hopkins University Press, 1989); and *Good Natured: The Origins of Right and Wrong in Humans and Other Animals* (Cambridge, Massachusetts: Harvard University Press, 1996); Marc Bekoff, *The Emotional Lives of Animals: A Leading Scientist Explores Animal Joy, Sorry, and Empathy – and Why They Matter* (Novato, California: New World Library, 2007); and *Animals Matter: A Biologist Explains Why We Should Treat Animals with Compassion and Respect* (Boston, Massachusetts: Shambhala Publications, 2007); Steve Wise, *Rattling the Cage: Toward Legal Rights for Animals* (Perseus Books: Cambridge, Mass., 2000); and *Drawing the Line: Science and the Case for Animal Rights* (Perseus Books: Cambridge, Mass. 2002).

[20] See John T. Bonner, *The Evolution of Culture in Animals* (Princeton, New Jersey: Princeton University Press, 1980).

[21] Jeffrey Masson and Susan McCarthy, *When Elephants Weep: The Emotional Lives of Animals* (New York: Delacorte Press, 1995).

[22] See, for instance, Rebecca Morelle, "Birds show off their dance moves," *BBC News* (April 30, 2009), http://news.bbc.co.uk/2/hi/science/nature/8026592.stm.

[23] See Irene Maxine Pepperberg, *The Alex Studies: Cognitive and Communicative Abilities of Grey Parrots* (Cambridge, Massachusetts: Harvard University Press, 1999).

[24] See "Monkeys 'grasp basic grammar,'" *BBC News* (January 22, 2004), http://news.bbc.co.uk/2/hi/science/nature/3413865.stm. Among the most remarkable forms of communication is how elephants transmit meanings through vibrations in the Earth which they "hear" with their feet. On how bonobos and chimps communicate through gestures, see Rowan Hooper, "Bonobos and chimps `speak' with gestures," *NewScientist.com* (April 30, 2007), http://www.newscientist.com/article/dn11756-bonobos-and-chimps-apes-speak-with-gestures-.html.

[25] See David Whitehouse, "Monkeys show sense of justice," *BBC News* (September 17, 2003), http://news.bbc.co.uk/2/hi/science/nature/3116678.stm; and Marc Bekoff and Jessica Pierce, *Wild Justice:*

The Moral Lives of Animals (Chicago: University of Chicago Press, 2009).

[26] See Carl Sagan and Ann Druyan, *Shadows of Forgotten Ancestors* (New York: Ballantine Books, 1993). There is a vast literature on the empathetic and caring aspects of animal life, such that "anecdotal evidence" eventually adds up to a verified truth. Thanks to You Tube, we also have a bank of video evidence of such instance, including videos of a crow caring for a kitten, a dog running into freeway traffic to save another dog already hit, and a massive tiger running to greet a human companion from which he was separated for many years.

[27] Peter Kropotkin, *Ethics: Origin and Development* (Montreal and New York: Black Rose Books, 1992).

[28] See "Chimps are cultured creatures," *BBC News* (June 16, 1999), http://news.bbc.co.uk/1/hi/sci/tech/370807.stm.

[29] See Barbara Smuts, "Orangutan Technology: How did the great apes get to be so smart?" *Scientific American* (November 22, 2004), http://www.sciam.com/article.cfm?id=orangutan-technology.

[30] See Frans de Wall, *Chimpanzee Politics: Power and Sex Among Apes*; Dario Maestripieri, *Machiavellian Intelligence: How Rhesus Macaques and Humans Have Conquered the World* (Chicago: University of Chicago Press, 2007); and Natalie Angier, "Political Animals (Yes, Animals)," *The New York Times* (January 28, 2008), http://www.nytimes.com/2008/01/22/science/22angi.html.

[31] See Ursula Dickie and Gerard Roth, "Animal Intelligence and the Evolution of the Human Mind," *Scientific American* (August 2008), http://www.sciam.com/article.cfm?id=intelligence-evolved.

[32] See Sue Savage-Rumbaugh and Roger Lewin, *Kanzi: The Ape at the Brink of the Human Mind* (New York: John Wiley & Sons, 1994).

[33] See Claude Levi-Strauss, *The Savage Mind* (Chicago: University of Chicago Press, 1968); and Marc D. Hauser, *Wild Minds: What Animals Really Think* (New York: Henry Holt and Company, 2000).

[34] Hauser, p. 257.

[35] Murray Bookchin, *The Ecology of Freedom: The Emergence and Dissolution of Hierarchy* (Berkeley, California: AK Press, 2005).

[36] See Eytan Avital and Eva Jablonka, Eva, *Animal Traditions: Behavioural Inheritance in Evolution* (Cambridge, UK: Cambridge University Press, 2000). A famous example of animal culture is the case of the macaque monkeys on the island of Koshima. In 1950, Japanese sociologists witnessed how one monkey discovered the benefits of washing sweet potatoes in a stream, a practice which other monkeys adopted and continues to this day. As documented by video cameras, chimpanzees teach the signs to their young and even use them expressively apart from the company of their human "teachers." In another example of cultural transmission of knowledge, blue tit birds learned that milk bottles a new source of food from observing one another and the behavior spread all across England. Finally, studies have shown that dolphins in Australia use sea sponges to protect their snouts when foraging, and teach this practice to their young [see Rowan Hooper, "Dolphins teach their children to use sponges." *NewScientist.com* (June 2005), http://www.newscientist.com/article/dn7475].

[37] See de Wall, *Chimpanzee Politics: Power and Sex Among Apes*, and *Good Natured: The Origins of Right and Wrong in Humans and Other Animals*.

[38] Frans de Wall, *Good Natured: The Origins of Right and Wrong in Humans and Other Animals*, p. 207.

[39] Jonathan Balcolmbe, cited in, "They think, feel pain," http://www.animalliberationfront.com/Philosophy/Morality/Speciesism/TheyThinkFeelPain.htm.

[40] See George Page, *Inside the Animal Mind: A Groundbreaking Exploration of Animal Intelligence* (New York: Doubleday, 1999); Michael Hanlon, "The disturbing question posed by IQ tests - are chimps cleverer than us?" *Daily Mail* (December 5, 2007), http://www.dailymail.co.uk/news/article-499989/The-disturbing-question-posed-IQ-tests--chimps-cleverer-us.html#; Christine Kenneally, "Animals and Us, Not So

Far Apart," *The Washington Post* (April 13, 2008). http://www.washingtonpost.com/wp-dyn/content/article/2008/04/11/AR2008041103329_pf.html; and "Still dumber than a chimpanzee," *New Scientist.com* (February 13, 2009), http://www.newscientist.com/blogs/shortsharpscience/2009/02/still-dumber-than-a-chimpanzee-1.html#more.

[41] See Peter Singer, *A Darwinian Left: Politics, Evolution, and Cooperation* (New Haven and London: Yale University Press, 1999).

[42] Felipe Fernandez-Armesto, *Humankind: A Brief History*, p. 12.

[43] On revolutionary social and institutional change, see Takis Fotopoulos, *Towards an Inclusive Democracy: The Crisis of the Growth Economy and the Need for a New Liberatory Project* (London: Continuum Publishing, 1997).