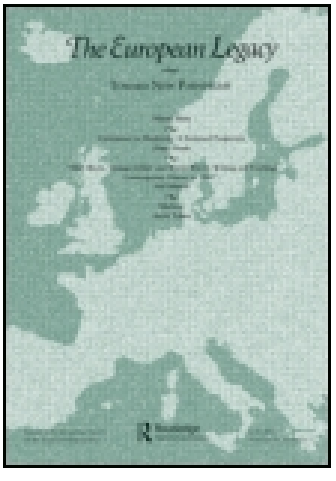

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Science (Fiction) and Posthuman Ethics: Redefining the Human

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Science (Fiction) and Posthuman Ethics: Redefining the Human

Elana Gomel

Abstract *The boundaries of the ethical have traditionally coincided with the boundaries of humanity. This, however, is no longer the case. Scientific developments, such as genetic engineering, stem-cell research, cloning, the Human Genome Project, new paleontological evidence, and the rise of neuropsychology call into question the very notion of human being and thus require a new conceptual map for ethical judgment. The contours of this map may be seen to emerge in works of science fiction (SF), which not only vividly dramatize the implications and consequences of new technologies and discoveries, but also exert a powerful influence on culture, creating a feedback loop of images and ideas. This essay focuses on three SF topoi: the human/animal evolutionary boundary; non-biological subjectivity (AI); and the human/alien interaction. It explores each of these topoi in a selection of SF texts, including novels by H. G. Wells, Olaf Stapledon, Stephen Baxter, William Gibson, Stanislaw Lem and others, showing how the boundaries of humanity are expanded and then exploded through the radical subversion of the tenets of liberal humanism.*

Do Posthuman Subjects Have Human Rights?

It is a commonplace that postmodernity is marked by the crisis of the liberal humanist subject, the death of Man, as it is often dramatically called. And it is equally a commonplace that the discourse of human rights has become central to ethical concerns (or at least to the lip service policy-makers pay to such concerns). There is an irreconcilable contradiction between these two trends. If we are—as so many theoreticians of postmodernism argue—rapidly becoming posthuman, what is the relevance of human rights ethics to the new subjects produced by scientific developments, technological advances, and cultural shifts? Felipe Fernandez-Armesto succinctly summarizes the situation: "Over the last thirty or forty years, we have invested an enormous amount of thought, emotion, treasure, and blood in what we call human values, human rights, the defense of human dignity and of human rights. Over the same period, quietly but devastatingly, science and philosophy have combined to undermine our traditional concept of humankind."[1]

Traditionally, the boundaries of the ethical community have coincided with the boundaries of humanity. This, however, is no longer the case. Scientific developments, such as genetic engineering, stem-cell research, cloning, the Human Genome Project,

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new paleontological evidence, and the rise of neuropsychology, do more than merely pose new ethical challenges within the framework of stable moral precepts. They call into question the very notion of the human being and thus require a radical restructuring of the basis for moral judgment. Biomedical sciences, supported by the postmodern *Weltanschauung*, have fundamentally changed the idea of the human subject: "the fact remains that technology is rapidly making the concept of the 'natural' human obsolete. We have now entered the realm of the posthuman, the debate over the identities and values of what will come after human."[2]

In this essay I argue that the "realm of the posthuman" requires a different conceptual map from the one applicable to the ethical community of human beings. The boundaries of humanity, always subject to conflicting political ideologies and religious world-views, are now being eroded by advances in the bio-sciences and informatics. Despite the well-meaning efforts of human rights activists, there is nothing natural or self-evident about human rights because there is nothing natural or self-evident about humanity. The rights—if any—of posthuman subjects must rest on a revision of the fundamental criteria by which ethical status is ascribed to an entity; and the question of what such criteria might be, is at the core of any debate on human rights in the posthuman age.

While the question of posthuman ethics is debated across many discursive and institutional sites, its most privileged arena is science fiction (SF). Not only does SF vividly dramatize the implications and consequences of new technologies and new discoveries, it is also a powerful influence upon culture, creating a feedback loop of images and ideas. Many central concepts of posthumanism, such as cyborg, clone, android, human-animal hybrid, and alien, originated in SF. As Sheryl Vint argues, "SF is particularly suited to exploring the question of the posthuman because it is a discourse that allows us to concretely imagine bodies and selves otherwise, a discourse defined by its ability to estrange our commonplace perceptions of reality."[3]

While there are many SF topoi relevant to the ethics of posthumanity, I will concentrate on three: the human/animal evolutionary continuum; non-biological subjectivity (AI); and the human/alien hybrid. In exploring each of the three in a selection of relevant texts, I will show how the boundaries of humanity are first expanded and then exploded through the radical subversion of the tenets of liberal humanism. Whatever new ethics may emerge in the process will necessarily be based on the radical restructuring of the notion of moral agency as to be hardly recognizable as such.

POLICING THE BORDER

The posthuman subject is both a vision of the future and an echo of the past. A pivotal moment in its history is marked by Michel Foucault's striking statement in *The Order of Things*: "It is comforting, however, and a source of profound relief to think that man is only a recent invention, a figure not yet two centuries old, a new wrinkle in our knowledge, and that he will disappear again as soon as that knowledge has discovered a new form."[4] This statement bears the mark of Roland Barthes's earlier critique of "universal human nature"[5] in *Mythologies*, which, in turn, was a response to the utopian ideas of the New Man, central to the early-twentieth-century ideologies of Nazism,

Fascism, and Communism. Although the cultural genealogy of posthumanity is as slippery and uncertain as the evolutionary history of humanity, one thing is certain: posthumanity has arisen as a cultural response to the ideological, religious, and philosophical attempts to police the borders of humankind.

In the twentieth century, this policing took the form of genocide and ethnic cleansing both of which attempted to represent the victim as non-human. As Sam Keen succinctly puts it in his pictorial guide *Faces of the Enemy*, the enemy is "the other. The outsider. The alien. He is not human."[6] Such statements are often treated as empty rhetoric but they are, in fact, a powerful linguistic tool for (re)drawing the boundaries of our biological species and thus facilitating extreme violence. There is some biological evidence that humans, much like other animals, possess genetic "brakes" when it comes to killing members of their own species. Discourse, however, can easily override these brakes by shifting the perceptual map of humanness. Once the enemy is perceived as non-human, killing becomes easy.[7] In analyzing the Nazi biomedical discourse, Robert Jay Lifton and Robert Proctor have shown how it misused anthropology and genetics in order to represent the Jews as literally non-human, members of a parasitic alien species.[8] The same strategy of dehumanization operated, albeit in displaced and disguised ways, in other twentieth-century genocidal regimes such as Stalin's, Mao's and Pol Pot's.

With the rise of postmodernism as both a cultural episteme and a body of theory, the question of posthumanism has become central to elaborating a new paradigm of social relations that would undermine the old genocidal dichotomies, pitting "humanity," in whatever way defined, against its enemies. In Donna Haraway's influential "The Cyborg Manifesto," the posthuman (or "the cyborg" as she calls it) is a new modality of human subjectivity linked to a utopian, socialist-feminist remaking of the world. Haraway conceptualizes the cyborg as "a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction. Social reality is lived social relations, our most important political construction, a world-changing fiction."[9] Cyborg is thus a social metaphor that represents the posthuman subject as polymorphous, fragmented, multiple, transcending the dichotomies of organic and inorganic, human and animal, male and female.

In *The Inhuman* Jean-Francois Lyotard raises a similar issue: "what if human beings, in humanism's sense of the word, were in the process of, constrained into, becoming inhuman?"[10] But both Lyotard and Haraway treat the posthuman as a textual construct, a metaphor that reflects postmodernism's radical questioning of the old verities of humanism. For Lyotard, "the inhuman" has in fact always been with us: "what is proper to humankind" is "inhabited" by the inhumanity of the social system as well as by the secret otherness of the unconscious, "of which the soul is hostage." Whereas Haraway extensively draws upon genetics, evolutionary biology and medical prosthetics and Lyotard addresses the possibility of an artificial manipulation of the human body and mind, both are more interested in the philosophical and political redefinition of humanity than in its actual, material remaking.

N. Katherine Hayles in *How We Became Posthuman*, however, links the philosophical/political questioning of humanism with the sweeping advances in science, particularly in cybernetics, genetic engineering and neuropsychology.[11] These advances not only force us to abandon the bankrupt notion of "a universal human nature" but also to consider the possibility of the actual production of subjectivities housed in bodies

that are no longer recognizably human or even organic, such as genetically engineered organisms or Artificial Intelligences (AIs).

The emergence of such subjects raises profound ethical and political issues. As Thomas Foster points out, posthumanism may function in two politically contradictory ways. There is the argument that "posthumanism has critical potential, that it is or can be part of struggles for freedom and social justice, and the argument that posthumanism dismisses such struggles or even makes them obsolete."[12] It is possible, however, to ask an even more disturbing question: what if the "struggles for freedom and social justice" become politically unfeasible or undesirable in a posthuman world? And even if such struggles are undertaken, the question is for whose freedom and justice will they be fought?

The answers SF provides to such questions are as diverse as the genre itself. However, because of its narrative architecture, SF is uniquely equipped to tackle the problems that mainstream literature, with its focus on individual human interactions, cannot adequately represent. Haraway thus singles out SF as a primary site for the discursive production of posthumanity: "Contemporary science fiction is full of cyborgs—creatures simultaneously animal and machine, who populate worlds ambiguously natural and crafted."[13]

These "crafted" fictional worlds differ from the magical worlds of fantasy in being rational, logical, and consistent with the ethos of science. Darko Suvin's famous definition of SF describes the genre as "distinguished by the narrative dominance or hegemony of a fictional 'novum' (novelty, innovation) validated by cognitive logic."[14] What is important is not that SF texts are based on specific scientifically-verifiable facts (most, in fact, are not) but rather that they follow "the cognitive logic" of science by excluding the magical, the supernatural, and the miraculous. The worlds of SF are not tilted toward human wish-fulfillment; they seldom provide the reassuring sense of our centrality to the universe. Instead, SF "is structured by its novum, a distancing element which forces the reader to look at the basic narrative world from the estranged perspective of a new optic."[15] And among those verities that SF estranges the most important is our concept of humanity.

There are three ways in which SF can undermine the boundaries of humanity: from below, at the evolutionary interface between *Homo sapiens* and our animal ancestors; from above, in the confrontation with a disembodied artificial intelligence; and sideways, in humanity's conflict with an alien subjectivity that is opaque and incomprehensible to us. Each case gives rise to specific ethical dilemmas.

HUMANS AND OTHER ANIMALS

In *Nicomachean Ethics* Aristotle posits ethical behavior as a corollary of being biologically human:

> For all things that have a function or activity, the good and the 'well' is thought to reside in the function, so would it seem to be for man, if he has a function . . . Life seems to be common even to plants, but we are seeking what is peculiar to man. Let us exclude, therefore, the life of nutrition and growth. Next there would be a life of perception, but it also seems to be common even to the horse, the ox, and every

> animal. There remains, then, an active life of the element that has a rational principle; of this, one part has such a principle in the sense of being obedient to one, the other in the sense of possessing one and exercising thought . . . if this is the case, and we state the function of man to be a certain kind of life, and this to be an activity or actions of the soul implying a rational principle, and the function of a good man to be the good and noble performance of these, and if any action is well performed when it is performed in accordance with the appropriate excellence: if this is the case, human good turns out to be activity of soul in accordance with virtue.[16]

Aristotle, then, specifically excludes other living entities (despite their kinship with humanity) from the ethical sphere. Only human beings can be ethical agents; and whatever quality is thought to demarcate human beings from other animals demarcates the ethical arena as well. And despite the profound changes in ethical concepts wrought by Christianity, the dominant trends in Western moral thought seldom questioned Aristotle's restriction of ethics to biological humans.

This "homo-centric" concept of ethics has been attacked by Peter Singer and other proponents of animal rights. Singer, author of the influential *Animal Liberation*, argues for the extension of the utilitarian concept of interest to non-human species. Since all living beings have vested interest in maximizing pleasure and avoiding pain, animals should be accorded ethical consideration in proportion to their experiential capacity: "the capacity for suffering" is "the vital characteristic that gives a being the right to equal consideration."[17] Singer's argument circumvents the discourse of "rights" by focusing instead on "interests" that humans and other animals share.

However, the problem of the boundaries of the human continues to plague Singer, whose defense of animal rights rests on the fact that we afford ethical consideration to those members of the human species who lack Aristotle's "rational principle": babies, children, and the mentally disabled. On what grounds, then, can we deny the same consideration to the great apes that have a greater intellectual capacity than a newborn? We can do so only on the grounds of "speciesism," an ideological prejudice akin to racism and sexism. In his debate with Richard Posner (*Slate*, 2001), Singer succinctly summarizes this point:

> What ethically significant feature can there be that *all* human beings but *no* nonhuman animals possess? We like to distinguish ourselves from animals by saying that only humans are rational, can use language, are self-aware, or are autonomous. But these abilities, significant as they are, do not enable us to draw the requisite line between *all* humans and nonhuman animals. For there are many humans who are not rational, self-aware, or autonomous, and who have no language . . . Like racists and sexists, speciesists say that the boundary of their own group is also a boundary that marks off the most valuable beings from all the rest.[18]

In his response to Singer, Posner appealed to the gut feeling that a child is more valuable than a chimp—a dangerous argument since many people's guts just as unequivocally tell them, for example, that a man is more valuable than a woman.

But since it is impossible to afford equal ethical rights to *all* living beings, the issue of boundaries cannot be avoided. Singer postulates an alternative community that includes many nonhuman animals but, at least theoretically, excludes some members of our own species. If sentience is the criterion, then, as Singer puts it, "pigs count, but

lettuces don't. Pigs can feel pain and pleasure. Lettuces can't.''[19] But what if first-trimester embryos, lacking a central nervous system, are substituted for the agricultural produce in this statement? One hardly needs to revisit the violent history of the U.S. abortion wars to see that it becomes political dynamite.

The criterion of sentience is inevitably based on the evolutionary closeness of to our own species. Singer's repeated attempts to have the great apes recognized as ethical subjects rest on our close evolutionary kinship with them, which enables us to deduce their feelings from their behavior and to ascribe similar ''interests'' to them. But if instrumental intelligence is taken into account, ants and bees have a greater claim that chimps and bonobos. It follows that if the boundaries of the ethical community are to be redrawn so as to include (some) animals, one has to contend with Aristotle's assertion that man is ''a certain kind of life'' and to ask what kind of life that is.

Since the publication of Darwin's *Origin of Species* (1859) and particularly *The Descent of Man* (1871), scientists and philosophers have recognized the evolutionary continuity between humans and animals and have grappled with its ethical implications. T. H. Huxley's *Evolution and Ethics* (1895) paradoxically argues that humanity's ''State of Art'' (civilization) seamlessly merges with the ''State of Nature'' and yet constitutes a separate ethical domain in which the amoral laws of survival and adaptation do not apply.[20] Huxley's student, H. G. Wells, explored this ethical paradox of continuity in his SF masterpieces. *The Time Machine* (1895) depicts the gradual devolution of humanity into two animal species that are as brutally innocent in their mutual dependency and predation as foxes and hares. But it is *The Island of Dr. Moreau* (1896), the true precursor of posthumanist SF, that Wells represents posthuman subjects as embodying the evolutionary continuum and asks how and why this continuum is ''sliced'' into the moral State of Art and the amoral State of Nature.

Dr. Moreau creates pseudo-humans by brutally vivisecting animals—bears, leopards, monkeys, goats—and then imposes upon them a harsh Law, which prevents their mutual predation. His creatures eventually revolt, kill their deified torturer, and then gradually slide back into their original animality. This novel has been read in many ways: as a parable of ''mad science,'' as a postcolonial fable, and as a condemnation of the protofascist ''biological sublime.'' But while most readings focus on the pain Moreau inflicts on his subjects, an important aspect of the novel deals with their acquisition and subsequent loss of self-awareness.

Dr. Moreau's Law is oppressive and grotesque and yet the Beast-Folk devoutly memorize and attempt to keep it even after Moreau is killed. The Law is unnatural because it prevents them from fulfilling their natural function of predation, yet it is ethical for the same reason. Prendick, the narrator, is profoundly ambivalent in his attitude to the Law, repulsed by it and yet horrified when the Beast-Folk abandon it and begin to prey upon each other. As they gradually lose the power of speech and their self-awareness, Prendick becomes indifferent and remote. When the still-rational Leopard-Man kills another creature, Prendick sees it as murder; but when the devolved Beast-Folk, who have forgotten the Law, hunt each other down, he regards it as part of nature's meaningless cycle of survival.

Dr. Moreau is a demented demiurge who epitomizes the cruel paradox of natural selection: the gift of self-consciousness is bought with pain and suffering. In the 1933 Introduction to his collected SF novels, Wells describes evolution as ''the aimless torture

in creation."[21] But while Dr. Moreau himself is evil, his gift of language and self-awareness is priceless. Thus the Beast-Folk's liberation is a tragedy because they relapse into the silence and indifference of Nature.

Wells never wavers from his Darwinian belief in the seamless continuity of human and animal. The Beast-Folk are an embodiment of this continuity, animals temporarily endowed with cerebral powers through a brutally physical procedure. And yet these powers effect a startling change in their ethical status: from objects of pity, they—for a time—become subjects responsible for their own destiny. This is powerfully dramatized in the scene in which Prendick overhears the screams of a vivisected panther that gradually become human sobs. Emotionally, the effect of the sounds of pain on him is the same whether the creature is animal or human but, ethically, he feels compelled to intervene, even at the risk of his own life, only when the sounds become articulate. Contra Singer, the capacity to feel pain is not enough to cement an ethical community of humans and animals.

In his SF masterpiece *Sirius* (1944), Olaf Stapledon develops Wells' theme by exploring another taboo frontier: interspecies sex. The dog named Sirius is a fully rational and self-aware subject, the unique product of a scientific experiment, brought up, like a reverse Mowgli, in a human family together with his future lover, the girl Plaxy. The novel is one of the most successful and subtle explorations of the nature of consciousness and of the interaction between genetic attributes and cultural imperatives (Sirius, brought up on the upper-class English cultural diet, strives to reconcile his love of classical music with his canine hearing and the Renaissance ideal of beauty with his predilection for San Bernard bitches). His love for Plaxy, as hers for him, is based not on the biological imperatives of reproduction but on the complex interplay of affection, sympathy, and identification.

Like the Beast-Folk, Sirius shifts the terrain of the ethical debate from the quibbles about human rights to the quandary of what it means to be human. In his canine shape, Sirius is no more—and no less—at home in the natural world as we are in our simian bodies, both being the products of the blind experimentation of natural selection. He goes through a complex moral bildungsroman, alternatively embracing and rejecting human culture; killing a man and suffering pangs of conscience; devoted to Plaxy yet tempted away from her by his instinctive attraction to bitches whom he despises for their lack of intelligence.[22]

Inspired by Darwinism, *The Island of Dr Moreau* and *Sirius* reject the nature/culture dichotomy. But they do so in a way strikingly different from our present-day animal-rights and deep ecology movements, with their valorization of nature. Rather, both novels exhibit similarities with contemporary sociobiology and evolutionary psychology, which strive to understand the biological roots of mental and psychological human attributes. Following Huxley's tradition and foreshadowing E. O. Wilson's and Richard Dawkins' theories, Wells and Stapledon emphasize both the evolutionary continuity between human and animals and the unnaturalness of ethics, which cannot be tied to humanity's biological definition.

However, in their narrative form both novels privilege the human viewpoint. Both are narrated by first-person human witnesses who cannot penetrate the experiential world of the posthuman character, just as we cannot penetrate the experiential world of animals. This narrative "opacity" of posthuman subjects limits the reader's emotional

investment in, and identification with, them. Postmodern SF, however, has developed narrative techniques that enable such identification, moving the figure of the posthuman to the center of the text. A striking example of such techniques is found in Stephen Baxter's novel *Evolution* (2002). While informed by the latest paleontological discoveries and evolutionary scenarios, it is as resolutely Darwinian in its ethical outlook as Wells' and Stapledon's novels.

Evolution is an attempt to represent the entire evolutionary course of humanity's development, from its remote insectivore ancestors to its equally remote possible descendants. The book begins 145 million years before the present, with the carnivorous dinosaurs of Pangaea, Earth's single giant landmass before the continental drift tore it apart, and ends 500 million years after the present, when the remote descendants of *Homo sapiens* are balls of orange-red fur, living in mindless symbiosis with highly evolved trees on a new Pangaea. This is possibly the greatest temporal span ever covered by a work of fiction. Baxter devises a narrative frame which simultaneously makes this incredible time-span humanly comprehensible and yet creates the effect of estrangement. The novel is a series of vignettes, each focalized through a single character, only very few of whom are human. The use of focalization, rather than first-person narration, enables the omniscient narrator to introduce the relevant biological information about each creature and to circumvent the fact that most of them do not possess any form of language. But since in each vignette the reader is made to see through the eyes of the focalizer and to identify with her/his predicament (for sound biological reasons, most of Baxter's characters are female), we have a much greater insight into their pre- and posthuman sensibilities than a purely human point of view would enable. For example, in "The Crossing," taking place 35 million years ago, the odyssey of a small anthropoid called Roamer, crossing the primordial ocean clinging to an accidental raft to land in the New World, is conveyed through a series of emotional states—pain, pleasure, fear, relief—that draw on our commonality with animals. At the same time, the narrator often withdraws from Roamer's limited sensorium to convey information about her kind and its future. This alternating point of view is perfectly adapted to what Suvin describes as the artistic goal of SF: cognitive estrangement, a combination of the sense of wonder and intellectual engagement. Roamer's intense awareness of her own kind is conveyed through a striking simile: "Roamer was aware of the rest of her troop as if they were a series of Chinese lanterns stuck in the foliage, diminishing the rest of the world to a dull, mute grayness." And yet immediately after this intimate inner image, the narrator describes Roamer from the outside, in neutral, scientific terms: "She looked something like a capuchin, the organ-grinder monkey that would one day roam the forests of South America . . . She weighed a couple of kilograms, and she was covered in dense black fur."[23]

One might object that *Evolution* merely deploys anthropomorphism, much like a traditional animal fable. However, the difference is that the novel gradually closes the gap between the (non-human) focalizer and the (human) narrator. As we enter recorded history, this gap disappears, only to widen again as civilization crumbles under the weight of climate change and humans rediscover that "they were still, after all, just animals embedded in an ecosystem; and as it died back, so did they."[24]

In its very narrative form, the novel inscribes its central Darwinian insight: that humans are animals, differentiated only by "imperceptible gradations" (Darwin's favorite

expression) from their non-rational ancestors and possible descendants. And yet, in that brief interval in which a specifically human history plays itself out, humans are ethical agents. In the vignette set after the collapse of civilization, a couple of modern humans wake up from cold sleep into a world in which their descendants have begun their devolutionary journey into the loss of language and self-consciousness. One of them encounters a semi-human female and like Wells' Time Traveler in *The Time Machine*, realizes he is dealing with a creature straddling the boundary between human and animal. He treats her wounds and releases her from a snare, even though she can no longer apprehend their kinship or respond with anything other than fear. But this last flicker of ethics dies out in a changed world, and in the subsequent vignettes, humanity is once again relegated to the disembodied voice of the narrator, describing the world without human beings. The somber tone of these last chapters echoes the pessimism of "Evolution and Ethics" and *The Time Machine*: " . . . Makes you think . . . how brief it all was. There was a moment when there were minds there to understand: to change things, to build. Now it's gone, evaporated, and we're back to *this*: living as animals, just another beast in the ecology. Just raw, unmediated existence."[25]

Evolutionary posthumanism has been accused of ethical nihilism. Abjuring both the pseudo-religious hierarchies of liberal humanism and deep ecology's worship of nature, sociobiology seems to have nothing to offer as a foundation for ethical thought. In *River Out of Eden* Richard Dawkins describes the world as revealed by evolutionary science: "the universe we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil and no good, nothing but blind, pitiless indifference."[26] Sociobiologist Michael Sherman tries to counter Dawkins' nihilism with the theory that moral universals are grounded in evolutionary adaptation: "moral sentiments and behaviors exist beyond us, as products of an impersonal force called evolution" and are, therefore, binding.[27] However, apart from the fact that many scientists seriously doubt that moral codes are adaptive in Sherman's narrow sense, he commits the classic mistake of confusing "the is" with "the ought." More than a hundred years ago, Huxley critiqued the fallacy that evolution offers a substantive guide to human behavior, arguing that the evolutionary process is non-teleological, amoral, and contingent—or, in another of Dawkins' memorable phrases, it is "the blind watch-maker." Similarly, Michael Ruse argues that "Darwinian evolutionary biology is nonprogressive, pointing away from the possibility of our knowing objective morality . . . I argue strongly that Darwinian evolutionary theory leads one to a moral skepticism, a kind of moral nonrealism."[28]

However, the Darwinian erasure of the biological boundaries of humanity does suggest a more complex and nuanced approach to ethics, which rests not on absolute precepts of any kind but on gradation and choice. In other words, since Darwinism indicates that there is no such thing as "pure" humanness, there can be no "pure" human rights. But while Darwinism denies the difference *in kind* between humans and other animals, it does not deny the difference *in degree*. Singer's animal-rights ethics simply collapses the hierarchy of liberal humanism. But posthuman ethics—as adumbrated in Darwin and Huxley, and as narrativized in the SF of Wells, Stapledon, Baxter and many others—suggests that an alternative hierarchy can be created, in which regardless of their biological classification, self-conscious subjects, by virtue of their status as ethical agents, possess rights that other entities do not. Giovanni Bonioli argues that ethics is much more

flexible and culturally-dependent than Sherman's strict evolutionism would suggest: while moral capacity is the result of evolutionary processes, moral judgments are not. But this moral capacity, while an unintended and perhaps even accidental by-property of our large brains, enables us to be moral agents: "We can both formulate and apply moral judgment and behave accordingly only because we are animals that have reached a suitable cerebral-mental evolutionary stage (we possess the enabling conditions)." And these enabling conditions are not the exclusive property of our biological species: "The moral capacity is an evolutionary outcome that occurred in the phylogenesis of Homo sapiens, but it could occur also in the phylogenesis of other living beings."[29]

In the Epilogue to *Evolution*, a human mother and daughter discuss the dim prospects of *Homo sapiens* after the climate catastrophe. The mother knows that our posthuman descendants will adapt, even though it might cost them their intelligence (as eventually happens in the book). And yet, she is still entranced by the sublimity of evolution, its perpetually unfolding story: "in my glimpses of the great encompassing mechanism that has shaped us all, I've seen a little of the numinous." Her hope is that "however cruel the process of evolution might seem to us, something new and in some sense *better than us* might some day come out of it."[30]

This is not what happens in either Wells' or Baxter's future scenarios: their posthumans are pitiful animals barely surviving in the changed environment. But in other SF texts, this "something new" is indeed a posthuman subject who retains and even enhances the human moral capacity albeit in a way that would appear to most of us frightening or revolting. This is particularly true of the texts that abandon the "blind watchmaker" of natural selection in favor of the sighted watchmaker of human technology that creates new, disembodied subjects: the AIs.

THE TURING SUBJECTS

The Turing test is the procedure devised by the computer genius Alan Turing to see whether a machine can think. Basically it amounts to the claim that if a software program can fool a human interlocutor into believing that it is self-conscious, then it *is* self-conscious. Such a radical reduction of consciousness and agency to performance evokes the fears of the loss of the Real, articulated in Jean Baudrillard's concept of the simulacrum.[31] But if Baudrillard's writing is informed by a Luddite nostalgia for the pre-technological age, postmodernity has to come to grips with the fact that some future AIs may in fact be ethical subjects and thus possess the rights that have hitherto belonged only to biological humans. The question is: which rights?

The ethical boundary explored through the figure of the AI is to be drawn not across the temporal axis of descent but rather across the spatial continuum of imitation. In his collection of philosophical fables *Cyberiad*, Stanislaw Lem articulates the ethical dilemma inherent in the concept of simulacra. Two robotic constructors Trurl and Klapaucius discuss the miniature model of a populous kingdom Trurl created for the amusement of a deposed tyrant. The model is so perfect that its nano-inhabitants do all the things that the tyrant's long-suffering subjects used to do: cry for mercy, mutter in discontent, resign themselves and obey. Trurl believes that he has found an ethically

harmless way to keep the tyrant happy with his toy by deflecting his attention from "real" people. Klapaucius, however, is horrified: "You gave that brutal despot, that born slave master . . . a whole civilization to rule and have dominion forever?"[32] When Trurl objects that this is only a model, Klapaucius questions the difference between original and copy:

> If an imperfect imitator, wishing to inflict pain, were to build himself a crude idol of wood or wax . . . his torture of the thing would be a paltry mockery indeed! But consider a succession of improvements in this practice! Consider the next sculptor, who builds a doll with a recording in its belly . . . consider a doll which, when beaten, begs for mercy . . . consider a doll that sheds tears, a doll that bleeds, a doll that fears death . . . Don't you see, when the imitator is perfect, so must be the imitation, and the semblance becomes the truth, the pretense a reality . . . [A] sufferer is one who hands you his suffering, that you may touch it . . . ; a sufferer is one who behaves like a sufferer![33]

The ethical dilemma of the perfect copy is explored in Philip K. Dick's novel *Do Androids Dream of Electric Sheep?* (1968) and in the film *Blade Runner* (1982), based on it. The film's replicants are simulacra of human beings, whose rebellion against the corporation that has made and enslaved them is represented with sympathy and understanding. The revelation in the director's cut that the film's protagonist and narrator—whose profession is to assassinate rogue replicants—is a replicant himself, renders the ethical boundary between original and copy meaningless. Since replicants behave like human beings, they *are* human beings.[34]

However, there is an additional complication in the relationship of copy and original. The replicants are not merely equal to humans, they are better than humans. Their short life-span is a precaution against these artificial beings taking over. We see this precaution as tyranny only because *Blade Runner* manipulates the audience's point of view by nudging us to identify with the replicants. But the genocidal history of various self-declared *Ubermenschen* and New Men should make us wary of super-humans.

In the SF written in the 1950s and 1960s, super-humans were almost always represented as evil, largely because of the lingering shock of Nazism. And if a superior intelligence was housed in an artificial body, free of the organic taint of deterioration and mortality, it was even more frightening. In Harlan Ellison's "I Have No Mouth and I Must Scream" (1967), the omnipotent computer that calls itself AM destroys humanity and eternally tortures the few survivors. Rather than a persecuted victim, the AI becomes an evil god. The copy violently supplants the original.[35]

But both victimhood and paranoia are insufficient responses to the ethical problems posed by AI. The issue of the rights of simulacra ultimately rests on the question of embodiment. The replicants are organic, though artificial, entities; they can be killed and they die. Lem's nano-slaves also possess bodies of sorts. But contemporary AIs are basically software and, like any software, they can be downloaded, copied, and moved from one receptacle to another. If so, what is the locus of their ethical subjecthood?

The problem posed by AI is the opposite of that posed by the evolutionary continuity of human and animal. In the latter, the organic body, with its capacity for pain

and mortality, may be used to ground ethical discourse, at the same time as it undermines the connection between this discourse and humanness. Paraphrasing Jeremy Bentham's famous statement, the question is not whether they (posthuman subjects) can *think* but whether they can *suffer*. But an informational simulacrum of consciousness may not be able to suffer or to experience any bodily sensation whatsoever.

In William Gibson's classic *Neuromancer* (1984), whose "cyberpunk" aesthetics has largely shaped the contemporary environment of the Internet, the AIs Neuromancer and Wintermute are remote, god-like intelligences that manipulate the actions of the human characters in pursuit of their own goals. At the end of the novel, the two AIs merge, creating an electronic equivalent of the omnipotent deity. This new entity pursues its own incomprehensible goals in cyberspace, leaving Case, the cyber-cowboy who was instrumental in its creation, to suffer the indignities of the "meat," the imprisoning and degrading physical body. Gibson's AI is neither benevolent nor evil; its superhuman abilities, however, set off the human corporeality as limiting and even degrading. The ultimate success of the simulacrum lies not in supplanting the original but in making the original look inferior. *Neuromancer* turns around Lem's contention that a good enough copy is as good as the original: for Gibson, a better copy makes the original unnecessary.[36]

Hayles critiques cyberpunk's disdain for the body, as expressed in the notion of downloading a human consciousness into a computer, which possibility has been seriously proposed by the scientist Hans Moravec, author of *Mind Children* (1988). Once downloaded, of course, this consciousness would be as malleable as any piece of software, capable of being modified, rewritten, copied, and so on. Hayles perceives this notion as a fantasy of false transcendence, re-inscribing Cartesian dualism as a technological pipe dream. But Foster argues that "it is also possible to read Moravec's fantasy as an imperfect . . . response to the perception that it is necessary to relocate subjectivity in some more complex spatial relation than it is possible when we imagine the body as container for mind or self."[37] Thus the notion of a disembodied AI challenges both the mind/body duality *and* the impulse to collapse the two.

It is in this very challenge that a new ethics for humanism becomes possible—not on the biological level of suffering, as in Singer's discourse of animal liberation—but on the cybernetic level of cognition. There is no AI, as of now, capable of passing the Turing test, nor is it technologically feasible even to approach the possibility of copying a human mind into a computer or network. Theoretically, however, neither is impossible. Many AI scientists confidently predict that Turing subjects will be a commonplace twenty years from now. As with human-animal hybrids or human clones, the obstacles are often ideological rather than practical: the persistence of the ethics of liberal humanism, which is often reinforced by religious taboos.

In Greg Egan's story "Chaff" the technology of rewiring humans' mental software renders human nature as "less than chaff in a breeze," quoting Conrad's *Heart of Darkness*.[38] This intertextual reference brings back the historical memory of the horrors unleashed by twentieth-century attempts to police the boundaries of humanity. AIs, replicants, virtual inhabitants of a computer, may be "mere" simulacra. But in affording ethical primacy to the original over the copy, we risk the same blindness as Marlow, who, in perceiving the Africans merely as inferior simulacra of the white man, cannot recognize their personhood.

The Other's Other

Perhaps the most challenging topos in SF is the representation of a truly alien subjectivity. Both animals and AIs share mental and physical features with humans, whether as a result of common descent or conscious design. But it is hard to even begin to imagine an intelligence that is qualitatively different from ours. SF's primary artistic goal is to create fictional worlds "that are . . . radically distanced or estranged from any collaborative effort of world construction outside their own modal intertext."[39] However, these fictional worlds are always, in some way, rooted in a shared reality, so the genre has to perform a balancing act between the strange and the familiar.

Some critics argue that aliens in SF are only more or less sophisticated disguises of disenfranchised and marginalized human groups, such as women, minorities, or gays, and see the genre's critical function as writing "the narrative of the *same*, as other."[40] But not all SF aliens are transparently allegorical as the blue-skinned Native Americans in *Avatar*. Stanislaw Lem, arguably the greatest SF writer of the last century, criticized Steven Soderbergh's 2002 soppy adaptation of his novel *Solaris* (1961) precisely on the grounds of trying to find "human interest" in a text that is not about human beings at all:

> Indeed, in "Solaris" I attempted to present the problem of an encounter in Space with a form of being that is neither human nor humanoid. Science fiction almost always assumed the aliens we meet play some kind of game with us the rules of which we sooner or later may understand (in most cases the "game" was the strategy of warfare). However I wanted to cut all threads leading to the personification of the Creature, i.e. the Solarian Ocean, so that the contact could not follow the human, interpersonal pattern—although it did take place in some strange manner.[41]

In *Solaris*, as in Lem's other novels of alien contact, *Eden* (1959) and *Fiasco* (1989), the alien is totally Other, opaque and impenetrable. Lem eschews not only easy humanizations of the alien through familiar physical forms but also subtler narrative humanizations, which inevitably occur when an alien subjectivity is presented through first-person narration or internal focalization. Lem's aliens are often situated outside language or on the very boundary between language and silence.[42]

Parallel to the artistic and cognitive difficulty of envisioning and/or understanding the totally Other is the ethical difficulty of judging the actions of non-human agents. The planet-wide ocean in *Solaris* that tortures the human characters by materializing their traumatic memories and fantasies, the "doublers" in *Eden* who fill their planet with mass graves, the enigmatic Quintians in *Fiasco* who rebuff all attempts at communication while engaging in suicidal violence—all are "evil" according to human ethics. Lem's great achievement is that he inverts the formula of xenophobia—different equals evil—suggesting instead that what we consider evil may be just a particular case of different.

In each novel, the sheer frustration of dealing with a totally opaque subjectivity causes one of the human characters to suggest some radical method of purification: destroying the ocean, bombing Eden or Quintia. In each novel, this suggestion is represented as an irrational counsel of despair and is ultimately rejected. However, there is no attempt to bring together the human and alien points of view or to indicate that the apparent evil of the aliens is the result of human misunderstanding. At most, as in *Solaris*, the actions of the godlike ocean may be seen as beyond good and evil. The inhabitants

of Eden and Quintia, while biologically closer to us, are engaged in actions that from a human ethical standpoint appear to be absolutely destructive. But since we cannot know the meaning of these actions for the aliens themselves, ethical judgment appears stalemated by cognitive failure.

Nevertheless, a way out of this stalemate is suggested by the character of Hari in *Solaris*. She is an artificial being created by the ocean according to the protagonist Kris Kelvin's memory blueprint of his dead lover, whom he drove to suicide. Suffering from remorse, Kelvin initially regards Hari purely as the ocean's means of torturing him, that is, as possessing an instrumental rather than intrinsic value. The first time she appears, he therefore kills her without any compunction, only to find out that she (or at least *a* Hari) always comes back. Interestingly, this is also how she initially describes herself—as a sort of pseudo-human veneer over the unfathomable will of the ocean, into which her own self-awareness, such as it is, has no access. Although she gradually develops, seeming to acquire a true subjectivity, she remains opaque to us because Kris narrates the story in the first person. But Hari's final suicide at least indicates some moral agency, since she refuses to be an instrument of the ocean's will. Ironically, she demonstrates her freedom of choice by replicating the action of her original.

Hari is a mediator, straddling the boundary between human and alien. She herself is the Other for Kris, but beyond her stands the absolute Otherness of the ocean. It is through her mediation that "some kind of contact" is established at the end, though it occurs neither on the cognitive nor on the ethical plane, but as a quasi-religious epiphany. Lacking such mediation, both *Eden* and *Fiasco* end with the total failure of understanding and engagement.

The human-alien hybrid is found throughout SF: for example, in Octavia Butler's *Lilith's Brood* trilogy (2000), the alien Oankali merge with the remnant of a devastated humanity, and in Matthew Farrell's *Thunder Rift* (2001), a human woman is taken in by a conglomerate of alien species, to become part of another world's ecosystem. That such hybrids are often female, non-Western, or both, is not accidental: the social and political Other often becomes a figure for the ontological Other with whom no meaningful contact is possible.

The human-alien hybrid adumbrates a form of posthumanity which is beyond a simple reversal and/or subversion of liberal humanism. Both the human-animal and the human-machine boundary can be assimilated to the Cartesian duality. The Beast-Folk are an image of the corporeality of the human subject, and the AI, of its rational mind. But however imperfectly, the human-alien hybrid or mediator gestures toward a form of Otherness that is altogether beyond humanism. In the necessary failure of representing such an Other, SF demarcates the outer limit of an ethical discourse that is predicated on the notion of "human" rights.

AFTER MAN

SF does not predict the future; it investigates the present. In elaborating posthuman ethical scenarios, the genre confronts its readers with the fact that the Universal Man is already dead. Human nature, Foucault's "recent invention," has been superseded by cyborgs, gene-modified organisms, and distributed networks. The ethics appropriate to

the age of posthumanity, however, has not yet emerged. Levinas's ethics, with its respect for, and humility in the face of, the Other, has been proposed as a candidate, but his system is still anthropocentric: "Levinas's ethics," according to Silvia Benso, "retains anthropologocentric features in its reading life still in terms of an opposition between human and nonhuman, where the human logos of ethics is the defining factor."[43] Benso's own suggestion of an "ethics of things," however, risks the same vacuity as the ethics of deep ecology or animal liberation: since it is impossible to afford equal ethical consideration to *everything*, boundaries will have to be drawn somewhere.

The question of such boundaries is ultimately political. The battle between humanism and posthumanism is as much a battle of political will as it is of philosophical thought. However, in exploring the emerging modalities of the posthuman, SF indicates that they all have something in common; and this common feature might, arguably, be the basis for an ethical thinking that avoids both anthropocentrism and universalism.

This feature is moral agency. The Beast-Folk, in striving to fulfill the Law are ethical subjects, but in degenerating into mere animals, are no longer so. Replicants and AIs pursue their own goals, often inimical to humanity, and yet, in this pursuit, they commit themselves to a set of binding rules. Ontological aliens, no matter how incomprehensible, are not passive objects, but active subjects. Agency seems to be a corollary of self-awareness, and, indeed, it is impossible to conceive of any ethical behavior that does not involve consciousness of a self.

In "Toward a Posthuman Ethics" Dongshin Yi suggests a dialog between humans and other self-conscious agents, "with their own ontology and ethics," who can insist on a "non-metaphorical relationship" of reciprocity and respect.[44] Such agents do not (yet) exist. Or perhaps they do: as a potentiality of *Homo sapiens* whose biological and cultural self-fashioning ceaselessly generates new modalities of subjectivity and consciousness. In this sense, it would appear that the ethics and politics of posthumanity are already here, with us, today.

Notes

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