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ENVIRONMENTAL ETHICS

Unqualified references to "population" typically refer to the human population. This is no doubt true of the vast majority of entries in this encyclopedia, which thus might more accurately be titled *The Encyclopedia of Human Population*. As things stand, however, species-specific references to the particular kind of "population" under discussion typically occur only in the context of specialized discussions in biology and ecology, especially the field of population biology.

These observations indicate a morally relevant point: The implicit understanding that the term *population* typically refers, unless otherwise specified, to the human population both reflects and reinforces the implicit assumption that human populations are the ones that really matter, the ones that, morally speaking, really count. There is of course a legitimate place for the widespread discussion of issues relating to human population, but why are these discussions not explicitly referred to as discussions relating to the human population so as to acknowledge the basic fact that humans live on this planet alongside a great many other, nonhuman kinds of populations to which humans are evolutionarily related?

Anthropocentrism

Acknowledging the ongoing human-centered (anthropocentric) nature of people's thinking, includ-

ing the empirical and moral distortions that this introduces, has been a central motivating factor in the development of the field of inquiry that has become known as environmental ethics or, more generally, environmental philosophy. These empirical and moral distortions have included claims (in the Western tradition at least) along the lines that "we" (meaning the human population) dwell at the center of the universe; that humans and humans alone possess a soul and are created in the image of God, to whom they have a privileged personal relationship; that humans occupy the highest (and therefore most perfect) position in a scale of nature (Aristotle's influential *scala naturae*); that humans occupy the highest earthly position in a great chain of being that stretches all the way up to God (a view that permeated medieval thinking); and that humans are essentially and uniquely rational (a view that runs from the early Greek philosophers through the greatest thinkers up to the present yet is called into question by what has been learned from Sigmund Freud and the developments in clinical psychiatry and psychology since Freud as well as from human cognitive psychology, comparative psychology, and cognitive ethology).

As John Passmore argues, the history of ideas reveals that these kinds of anthropocentric views have been employed in varying forms to underpin the morally charged conclusion that humans are either exclusively or overwhelmingly valuable relative to all other earthly kinds and that these other earthly kinds are therefore people's to do with as they will. Indeed, as Passmore notes, throughout the history of Western philosophical thinking, "It is constantly assumed that whatever else exists does so *only for the sake of the rational*" (p. 15) (emphasis added). This sort of thinking has patently obnoxious upshots.

To take just one kind of example, Passmore states: "In so far as cruelty to animals was wrong, this was only because, so it was argued by [Thomas] Aquinas, by [Immanuel] Kant, and by a multitude of lesser thinkers, it might induce a callousness towards *human* suffering. There was nothing wrong with cruelty to animals *in itself*" (p. 113). It seems almost inconceivable today that highly intelligent thinkers of any period could maintain that nonhuman animals were not capable of suffering (a view to which René Descartes, the father of modern philosophy, was committed) or that they could suffer but that their suffering was of no direct moral consequence. However, up until at least Kant's time the

most influential thinkers in the Western tradition believed precisely this.

The Argument against Anthropocentrism

Correcting anthropocentrically fueled intellectual distortions—or undermining them by showing their irrelevance to defensible moral conclusions—has been one of the central theoretical motivating factors for environmental ethicists. The central practical motivating factor has been the increasing sense, especially since the 1960s and the birth of the modern environmental movement, of a number of gathering ecological crises. It is the conviction of environmental ethicists that these theoretical and practical factors are directly related: that how people think about—or fail to think about—the value of the world around them has a direct connection with the ecological crises that people are experiencing today. Things might have turned out otherwise: People might have had a set of views that resulted in a far more ecologically respectful approach to the world around them yet still suffer from a range of ecological crises resulting from, say, an asteroid impact. However, it seems that the current ecological crises are largely anthropogenic, that is, of human origin. If it is true that there is a direct connection between these anthropogenic crises and the ways in which people think about and value the world, then environmental ethics must be thought of as a discipline that carries profound significance for the future of habitable life on Earth. Thus, Edward O. Wilson concluded a 1989 paper with the reflection that

Environmental ethics, still a small and neglected branch of intellectual activity, deserves to become a major branch of the humanities during the next hundred years. In the end, when all the accounting is done, conservation will boil down to a decision of ethics based on empirical knowledge: how we value the natural world in which we evolved and now, increasingly, how we regard our status as individuals. (p. 7)

Environmental ethics did not arise as a formal field of inquiry until the 1970s. Its official birth—after a period of gestation during the 1970s that saw the publication of a number of influential papers and books—perhaps can be dated to 1979 with the publication of *Environmental Ethics*, the first refereed journal in the field. Echoing the point made at the beginning of this entry about the term *popula-*

tion, environmental ethicists have been unrelenting in pointing out that the discipline of ethics, and of philosophy generally, has been directly responsible for introducing and defending profoundly anthropocentric biases into Western thought.

A significant upshot of these biases is that the subject area known as ethics (or moral philosophy) has been focused almost exclusively on humans for the 2,500 years from the time of the Greek founders of this area of inquiry until at least the 1970s. Yet when people today hear the term environmental ethics, they think of it as a minor, specialized offshoot of a “main game” that is known purely and simply as ethics, when in fact environmental ethics represents a vast enlargement of the traditional boundaries of that main game. This is the case because it is the environmental ethicists who have deliberately and systematically criticized the traditional restriction of moral status to human beings on scientific, pragmatic, logical, moral, and even experiential grounds and at the same time have opened up the issue of moral status in order to address the question of what kinds of entities ought to be granted moral status and why. This means that it would be more logical, informative, and intellectually honest to change the name of what traditionally has been referred to as *ethics* to *human ethics* and to change the name of *environmental ethics*, which can mistakenly suggest a more specialized area of inquiry, to *general ethics*.

Ethical arguments that extend moral status beyond the human sphere typically begin by making two critically damaging points against the restriction of moral status to humans. The first is the logical point that it is not possible to identify a single morally relevant characteristic that distinguishes all humans from all nonhumans. For example, even if one accepted the idea that rationality (or the abilities that follow in its wake, such as the capacity to act as a moral agent) should be the criterion for moral status, one would find that there is a now standard objection to this view: the argument from marginal cases. This is the objection that such a view would not even include all humans, since some humans have not yet developed this capacity (infants), some have lost it and will never regain it (e.g., the senile, people in a persistent vegetative state), and some will never develop it (e.g., people who are profoundly retarded or brain damaged). Should it be permissible to do anything to these people, for example, experiment on them, as can be done to other animals, in-

cluding other primates, humankind's closest evolutionary cousins, who can often lay more claim to rationality than can these "marginal cases"? However, if one tries to come up with a morally relevant characteristic that will include all humans, including these marginal cases, one will find that one is employing a criterion of moral status that also includes a great many nonhuman beings.

The second argument against the restriction of moral status to humans is the moral point that the traditional criteria that have been advanced for moral status—such as those of rationality or actual or potential moral agency and those that rest on highly contested religious assumptions—are irrelevant to the basic reason why most people think it is categorically wrong, say, to torture a baby. The basic reason most people think that this is categorically wrong is not because the baby is actually or even potentially rational, capable of moral agency, or endowed with a soul but simply that the baby will suffer if this is done and that there is no justification for inflicting that suffering. However, if this is the basic reason, consistency of reasoning—or what might simply be called intellectual honesty—demands that one should not inflict unnecessary suffering on any being that is capable of suffering (i.e., any sentient being).

This essentially is the argument that was advanced by the philosopher Jeremy Bentham (1748–1832), the founding father of utilitarianism, and later was taken up and elaborated by Peter Singer. For Singer and other animal liberationists, consistency requires that equal consideration be given to equal degrees of pain no matter who the bearer of that pain is; to say that one should be concerned about pain only when it occurs in humans and not when it occurs in other primates, cats, birds, or fish is akin to saying that one should be concerned about pain only when it is experienced by men or whites. It amounts, in other words, to a morally indefensible form of discrimination, which Singer refers to as speciesism.

Nonanthropocentric Arguments

Other thinkers have developed different arguments for attributing moral status to nonhuman animals. These arguments range from Tom Regan's "subject-of-a-life" approach to animal rights, which would attribute the same degree of moral status to many nonhuman animals that is attributed to humans, to

Richard Ryder's "painism" approach, which Ryder argues combines the best of Singer's and Regan's approaches, to R. G. Frey's "unequal value thesis" and Charles Birch and John Cobb's "richness of experience" approach, both of which only go halfway toward accepting Singer's argument in that they accept the moral significance of sentience but attribute different degrees of moral status to nonhuman animals—and people—on the basis of their overall capacity for richness of experience.

If one accepts any of these arguments even partially, one has attributed at least some degree of moral status to the members of a great many kinds of populations other than human populations. The implications of this for human action, including the incursion of human populations on nonhuman populations, are potentially immense.

However, that is just the beginning of the non-anthropocentric argument. Other thinkers go even further and argue that living things per se (such as plants) embody certain kinds of interests (such as the need for light and water) whether these living things are sentient or not. For example, physician Albert Schweitzer advanced a "reverence for life" ethic that has found more contemporary and perhaps more philosophically rigorous statement in the work of both Kenneth Goodpaster and Paul Taylor. Other environmental ethicists have noted that all the approaches discussed so far—anthropocentric, zoocentric, and biocentric—focus on individual entities: humans, nonhuman animals (or at least some nonhuman animals), and living things (including plants), respectively.

For these thinkers, there is something that is even more radically different about environmental ethical thought than its rejection of anthropocentrism: its questioning of any ethic, no matter how nonanthropocentric, that confines itself to an individualistic moral focus. In their view, what is profoundly revolutionary about environmental ethical questions is that they force people to take seriously the idea that certain kinds of complex wholes—paradigmatically, ecosystems and the ecosphere itself—may be proper foci of moral concern in their own right.

This idea was first seriously advanced in an ecological context by the American forester and conservationist Aldo Leopold in the culminating section ("The Land Ethic") of *A Sand County Almanac*, originally published in 1949. Contemporary envi-

ronmental ethicists such as J. Baird Callicott and James Heffernan have drawn different kinds of inspiration from Leopold's pioneering Land Ethic in elaborating more philosophically rigorous versions of ecological holism. Other environmental philosophers, such as the advocates of "deep ecology" and "ecofeminism," are impatient with formal philosophical arguments about moral status per se and want instead to construct a type of ecological virtue ethics in which the point of the ethical enterprise would be to cultivate a wider and deeper sense of identification with the world around humankind in the case of deep ecology or a more caring attitude toward that world in the case of ecofeminism. Again, the implications of these nonanthropocentric views—biocentric, ecocentric, deep ecological, and ecofeminist—for the scale and rate of human impact on the natural world are potentially immense. This realization raises significant ethical questions about the built environment—both how people build and how people live in built environments—that are just beginning to be explored from an environmental ethical perspective.

However, lest these approaches (or at least those which are explicitly concerned with questions of moral status) sound like a simple continuum—a kind of linear bus ride in which different people who consider these issues get off at stops labeled anthropocentrism, zoocentrism, biocentrism, and ecocentrism (or ecological holism), depending on how far they feel the arguments oblige them to go—it must be pointed out that there are some very sharp turns and even disjunctions along this path.

To start with, nonanthropocentric environmental ethicists in general have an argument with the whole Western ethical tradition, which has systematically excluded and even denigrated the moral status of all members and aspects of the nonhuman world. However, even within the nonanthropocentric environmental ethical fold there are major divisions and disagreements. One of the most theoretically difficult and practically urgent is the argument between those who adopt an individualistic focus and those who adopt a holistic focus. Recent research suggests that the second leading cause of loss of biodiversity in the world today is introduced species that have become invasive and outcompeted indigenous species. What to do? In the case of invasive (nonhuman) animals such as feral cats and foxes in Australia, the animal liberationist—and certainly the animal rights advocate—is committed to saying in effect, "Leave

the invasive animals alone; they have as much right to live as any other animals," whereas the ecocentrist is committed to saying, "Do whatever is necessary to get rid of the invasive animals; we have a duty to preserve the characteristic diversity of this region." There are real-world examples of precisely this sort of confrontation. Thus, Callicott once characterized the argument about animal liberation as a "triangular affair," a three-way argument between anthropocentric ethicists, animal welfare advocates, and ecocentrists.

The Future of Environmental Ethics

These kinds of debates are both important and overdue. Environmental ethics or, more logically, general ethics is overturning the Western ethical tradition, is still in its infancy, and both promises and needs to become, as Wilson said, a major branch of intellectual inquiry in the next hundred years.

See also: *Animal Rights; Ecological Perspectives on Population; Future Generations, Obligations to; Sustainable Development.*

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ENVIRONMENTAL HEALTH

The word environment as applied to health is elastic in use. Conventionally it refers to the external factors—physical, chemical, and microbiological—that impinge on human health, usually through shared exposures among members of communities or whole populations, and that therefore are not under the control of individuals. A broader definition embraces the social environment, including the aspects of social capital that influence health within the community at large. Indeed, in the early twenty-first century about half of all people live in urban environments as *Homo sapiens* becomes an urbanized

species. The urban environment is essentially a habitat: a system of interacting physical, demographic, social, and cultural environments. These wider dimensions of the environment necessitate a more ecological, systems-based approach.

External environmental exposures can be either natural or human-made and have a local, regional, or global scale. The modern preoccupation is with human-made environmental hazards. Historically, however, concerns focused on aspects of the natural environment, including weather extremes, infectious agents, physical disasters, and local micronutrient deficiencies. For example, one-fifth of the world population lives on ancient, leached, and often mountainous iodine-deficient soils. This puts many populations at risk of iodine deficiency disorders, including goiter, reproductive impairment, and congenital disorders, including cretinism (Hetzel and Pandav 1994).

The environmental health agenda also must encompass the risks to population health that result from humankind's larger-scale disruption of the planet's ecological and geophysical systems. These are the systems that provide nature's "goods and services": climatic stability, food yields, the supply of clean fresh water, and the healthy functioning of biotically diverse natural ecosystems that recycle nutrients, cleanse the air and water, and produce useful materials. This disruption or depletion of the biosphere's life support systems can affect health through pathways that are less direct and sometimes less immediate than the effects of specific traditional hazards.

In industrialized countries attention has been directed predominantly to the plethora of chemical contaminants entering air, water, soil, and food, along with physical hazards such as ionizing radiation, nonionizing radiation, urban noise, and road trauma. In the popular understanding prototypical environmental health events include the disasters of Chernobyl, Bhopal, Seveso, Minamata Bay, and the Great London Smog of 1952. As technologies evolve and as levels of consumption rise, the list of candidate hazards lengthens: In the late 1990s questions arose about the cancer hazard of electromagnetic radiation from mobile phones, the risk to a fetus from chlorinated organic chemicals in chlorine-treated water supplies, and the possible toxicity and allergenic and other consequences of genetically modified foods. In low-income countries the major