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L'éthique pythagoricienne appliquée à l'environnement présente deux tendances contradictoires: d'une part, le respect à l'égard de la nature et de tout ce qui est apparenté à la vie l'oppose à tout ce qui tue et intervient de façon brutale dans le monde naturel; d'autre part, sa doctrine de la séparation de l'âme et du corps fait injure à ce dernier et au monde extérieur dans lequel il s'intègre.

The Environmental Ethics of the Pythagoreans*

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Two conflicting tendencies may be discerned in Pythagorean ethics as applied to the environment: on the one hand, a sense of reverence for nature and kinship with all life that opposed killing and other forms of interference in the natural world, and on the other hand, a doctrine of the separability of soul and body which denigrates the body and the external world of which it is a part. The prescriptive content of Pythagorean ethics includes prohibitions against taking life, even in sacrifices to the gods, and against eating anything that has been killed. Pollution of certain kinds is forbidden. These strictures were based on an organic, cyclical view of the world, emphasizing its harmony and balance. The Pythagoreans investigated some questions that would today be called ecological. Perhaps most importantly, they evinced a genuine respect for living things, deriving in part from the belief that animals and plants contain the reborn souls of human beings. These doctrines may have been derived from the attitudes and practices of ancestral hunters and gatherers in southeast Europe, with traditional Greek religion serving as the means of transmission from tribal cultures to classical philosophy. The followers of Pythagoras split into two schools: a "scientific" school that neglected biology and therefore ecology, and a "religious" school that emphasized purity of soul and rejected any concern with physical nature. The more "environmentalist" teachings were gradually abandoned as the Pythagoreans accommodated themselves to the general attitudes of Greco-Roman culture. For instance, the objections to animal sacrifice, and to most plants as food, were dropped. The divorce of body and soul in later Pythagorean thought, wherever its influence was strong, brought with it indifference not only to the body, but to all the rest of the natural environment.

Of all the philosophies that had their genesis in ancient Greece, the one whose ethics looks most environmental, in the sense of being directed toward preserving the ecological balance of nature, is Pythagoreanism. Indeed, many of the ethical pronouncements of the Pythagoreans resemble those of modern environmentalists, both in content and in some of the apparent underlying

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principles. Developing their views from an Orphic nature mysticism and forbidding the taking of life even for food, these early philosophers were also the religious teachers of what John Rodman perceptively calls "a kind of counter-culture" of the classical world, which "exhibited in both theory and practice a deep sense of the kinship of human with non-human (especially animal) life."¹ This philosophy encouraged its followers to restrict their interference with the natural workings of the environment, that is, in effect, to practice conservation. No other ancient philosophy came so close to an explicit statement of positive environmental ethics. Yet this school contained within itself at the same time an extreme antienvironmental tendency, since it taught the separability of soul and body, and that the soul needs to be purified from the contamination of the body and the natural world to find its true destiny. These opposed and mutually contradictory ideas existed in tension in early Pythagoreanism.

In this essay, through a study of Pythagorean ethics and its roots in Orphic and even older traditions, I show how principles affirming the value of the environment, and living things in particular, entered Pythagoreanism, how they were formulated within that system in tension with the opposing tendency just described, and how the balance of the system was upset with consequent damage to Pythagoreanism's most "environmentalist" teachings. At the outset, one is faced with the fact that no writings of Pythagoras survive, and that the extant ancient sources describing the Pythagoreans are generally late, conflicting, and full of inconsistencies. But a normative description of a relatively "pure" Pythagorean environmental ethics can be attained by examining the way in which Pythagorean ideas moderated from an earlier form, which was harder to reconcile with the body of ideas and practices more generally accepted in ancient society, to a more rationalized and accommodated form. It can be assumed that earlier and more distinctive ideas are more likely to be original and part of the unique Pythagorean genius than the later, more palatable ones. A discussion of the process of change is reserved for later in this essay; at this point the attempt is to present a description of the prescriptive and theoretical aspects of Pythagorean environmental ethics.

The prescriptive content of Pythagorean ethics in relation to the natural world begins with a prohibition against taking life in any form. With this is associated a corollary ban on eating anything that has been killed. These rules applied to plants as well as animals: cutting trees was called a form of slaughter, and such vegetable foods as beans and certain leaves were specifically forbidden. Among permitted foods were milk, cheese, honey, apples, and grapes. Those most emphatically forbidden were meat and beans. This is not

vegetarianism *per se*, since both animal and plant foods are found among both allowed and banned foods. The operative principle, rather, forbids eating anything "that has had life,"² in the sense that its consumption makes killing necessary, but permits products that seem to be produced by nature with the purpose of being eaten, at least by nonpredators. The kind of reasoning that allowed the eating of such fruits as apples and grapes may be seen in this passage from Porphyry, who is here defending the Pythagorean practice. He has just stated that one should not take from animals what they are not willing to give, that is, their lives:

Some one, however, perhaps may say, that we also take away something from plants [when we eat, and sacrifice them to the gods]. But the ablation is not similar; since we do not take this away from those who are unwilling that we should. For, if we omitted to gather them, they would spontaneously drop their fruits. The gathering of fruits, also, is not attended with the destruction of the plants, as it is when animals lose their animating principle.³

Parenthetically, the general principle here offers a new explanation for the taboo against beans in that they may have been forbidden because they so obviously contain the germ of life. Anyone who has watched beans grow in a garden knows that the young plants lift the cotyledons above the ground as if to exhibit the manner in which the embryo has grown from the seed.⁴

Pythagoreans would not engage in occupations that involved killing, and shunned those who practiced them, such as hunters, butchers, cooks, fishermen, and gladiators. They also objected to animal sacrifice. Pythagoras himself worshiped only where blood sacrifice was not used, as for example the fireless altar of Apollo on Delos. Cakes, libations of honey, and incense were acceptable offerings, but not slaughtered animals: the Pythagoreans felt that the gods should not be expected to desire food that was unholy even to human beings.

Among the numerous and sometimes difficult to rationalize rules of the sect were some that exemplify another area of environmental ethics by forbidding pollution. An oath attributed to Pythagoras began as follows: "I swear by the air I breathe, I swear by the water I drink. . . ."⁵ His followers were admonished not to muddy springs of water, to be circumspect in disposing of bodily wastes, and to avoid leaving the marks of their bodies anywhere. Empedocles, whose affinities were Pythagorean, was said to have stemmed a plague at Selinus by clearing the nearby river of pollution. All the practices mentioned thus far could be justified on environmental grounds. Many of them also

² Strabo 7.3.5; cf. Plato *Laws* 782C.

³ Porphyry *On Abstinence* 2.13.

⁴ However, the Pythagoreans had no objection to bread made from grain, although they could hardly have been unaware that all grains contain the germ of life.

⁵ Diogenes Laertius *Life of Pythagoras* 8.6, attributed to a work by Pythagoras entitled *On Nature*.

¹ John Rodman, "The Other Side of Ecology in Ancient Greece: Comments on Hughes," *Inquiry* 19 (1976): 111.

exhibit a magico-religious dimension. But too clear a distinction between these two bases should not be attempted at this point; later in the essay, I suggest a way in which magico-religious ideas and practices may actually preserve and embody earlier ecological intuitions. At this point it is important to examine the underlying theory, that is, the philosophical motives evinced by the Pythagoreans themselves.

The Pythagorean cosmology, which emphasized the organic unity of the world and at the same time stressed the cyclical interplay and balance of the elements and creatures within it, is a strikingly ecological conception. Empedocles conceived the universe as an endless recycling of elements:

There is no birth in mortal things, and no end in ruinous death. There is only mingling and interchange of parts, and it is this we call 'nature' When these elements are mingled into the shape of a man living under the bright sky, or into the shape of wild beasts or plants or birds, men call it birth; and when these things are separated into their parts men speak of hapless death.⁶

Wheelwright spoke of Empedocles' cosmological thought as combining a "chemical concept of mixture and an essentially biological concept of growth,"⁷ but it is possible to be more specific: the total concept is ecological. All things share the same elements, so that no creature comes *ex nihilo* nor is destroyed, but there is a constant process of interchange which today might be likened to energy and matter in an ecosystem. Like some modern ecological philosophers who consider the total biosphere to be itself an organism or a single ecosystem whose interactions constitute the life processes of the whole, the Pythagoreans held the cosmos to be spherical, animate, ensouled, and intelligent. In this sense, they were pantheists. As such, they often stood in awe-struck admiration of the natural world, and Orphic worship of such aspects of nature as the sun and wind persisted in Pythagoreanism. A reading of the surviving fragments of Pythagorean authors, especially Empedocles, discloses a wealth of descriptive devices which give them a place in the genesis of the literary tradition of nature appreciation. Empedocles wrote of the glory of dawning sunlight reflecting from the summit of Mount Olympus, and could produce a series of epithets like "shrub-plants and water-dwelling fish, and beasts with mountain-lairs, and diver-birds that sail on wings."⁸

One of the ways in which Pythagoreans formed a concept of the balance of nature was through their belief in harmony, which Philolaus called "a unity of mixed elements that are various, and an agreement of elements that disagree."⁹ They believed that harmonies are mathematical proportions. One can

laugh at Empedocles' various "recipes" for flesh, blood, and bones, combining, say, two parts of water with four of fire and two of earth. Yet, if a Pythagorean, suddenly reincarnated today with memory intact, were introduced to a practicing ecologist, he would feel a deep sense of rightness about the latter's practice of establishing numerical relationships between predators and prey or describing a forest through the mathematical language of systems analysis. It would seem to him to be in accord with the Pythagorean idea that nature embodies mathematical proportion and harmony.

As Empedocles and others of the school attempted to describe the workings of nature and the history of life, their concepts of the organic cycle of the world and the harmony of nature led them to investigate some questions that would be called ecological in the scientific sense today. Empedocles speculated as to why various animals and plants prefer different environments, though his answer is unclear: one source says he thought that animals whose nature was fiery "flew up into the air," another that they became aquatic to cool off their inner flames.¹⁰ He puzzled over the roles of climate, moisture, and soil in plant growth, attempting to work out a concept of harmony between organisms and their environment. His theory of natural selection in the evolution of animals and human beings is deservedly famous. Also from a Pythagorean source comes a specific denial of spontaneous generation.¹¹ There was a recognition of the role of natural processes in regulating animal populations. Citing those people who believe that hunting and slaughter are necessary to prevent the reproductive increase of animals from inundating humanity, Porphyry replied that excess numbers of "animals governing themselves, and having no guardian and ruler, would quickly perish [perhaps through starvation?], and be destroyed by others who would attack them and diminish their multitude, as is found to be the case with myriads of animals on which people do not feed."¹² This is what the budding science of ecology amounted to among the Pythagoreans. It was to be opened more fully by two non-Pythagoreans, Aristotle and Theophrastus, but like other ancient sciences, failed to bear further fruit for many centuries.

Cosmology is only one of the roots of Pythagorean environmental conceptions. Even more important is a genuine reverence for life, exhibited at least in the earliest and purest form of the doctrine. Ethical commandments were not merely negative, but urged active friendship and respect for living beings. They counseled kindness for animals such as calves and roosters. They taught that all forms of life are related, have a common origin and natural ties, and

⁶ Empedocles, ff. 8-9.

⁷ Philip Wheelwright, *The Presocratics* (Indianapolis: Bobbs-Merrill, 1960), p. 123.

⁸ Empedocles, f. 20.

⁹ Philolaus, f. 10.

¹⁰ Empedocles, f. 72; Aristotle *De Respiratione* 477a32; cf. Theophrastus *De Causis Plantarum* 1.22.2-3.

¹¹ D. L. 8.28.

¹² Porphyry, 1.53.

that human beings therefore have the duty to treat other creatures justly. A sense of kinship with all life is one way in which the philosopher affirmed a relationship between himself and the universe.

Empedocles posited, as part of his cyclical cosmology, a former Age of Love when peace reigned between human beings and all other forms of life: "All creatures, beasts and birds alike, were tame and gentle," while "trees bore leaves and fruit in abundance all the year round, in a climate that was like perpetual spring."¹³ Others, too, tended to look back to a more just and natural past "when friendship and a proper sense of the duties pertaining to kindred natures, was possessed by all," so that "no one slaughtered any living being, in consequence of thinking that other animals were allied."¹⁴ The act that shattered this Pythagorean Garden of Eden and entrapped human souls was, significantly, not the picking of an apple but the killing and eating of animals. Thus was love weakened, hate strengthened, and the present inferior state of things initiated.

But there were some individuals who through a philosophically directed life could recapture and embody something of the former amity with nature. Orpheus is shown in art and literature surrounded by animals and even trees in whom his song has awakened a sympathetic attraction. Pythagoras was said to have called an eagle down from the sky and tamed it, and to have made friends with a bear in a manner reminiscent of St. Francis and the wolf of Gubbio. The biography of the Pythagorean Apollonius of Tyana credits him with the knowledge of the languages of birds and animals. Porphyry proudly reported of himself that he had conversed with a tame partridge. Empathy went a step beyond even this; Empedocles asserted that he had experienced both animal and plant life from within by metempsychosis, and the soul of Pythagoras "was constantly passing into whatever animals and plants it pleased."¹⁵

This introduces the doctrine that all living creatures have souls like human beings: as Empedocles says, "The soul inhabits every kind of form of animals and plants."¹⁶ Pythagoreans maintained this point vigorously; in their view it was an indispensable support for the ethical refusal to harm other living beings. Their opponents might claim that a "compact of justice"¹⁷ could not be made with animals that lacked reason; the response of the Pythagoreans was that other living creatures *are* rational, sharing in all the aspects of sentient beings. That there might be a difference in the degree to which the soul manifests itself in various forms of life, some of them would admit, but they all affirmed the

presence of perception, feeling, and intelligence in all creatures. Thus, they denied the uniqueness of mankind: if human beings are not the only rational animals, if all creatures are ensouled, then the basis for imposing a hierarchy or scale of values among the species is destroyed.

Some writers took it upon themselves to argue for the rationality of animals from examples of their cleverness, wisdom, and morality. Pythagorean literature is full of such stories, and one cannot avoid the impression that they are more than set texts for argument, reflecting in addition the writers' genuine admiration. Elephants, for example, were said to defend one another, guard the rear of their columns against attack, test the depths of rivers, and treat diseases. The actions of dogs were believed to demonstrate the use of syllogistic reasoning. Some animals were said to have voluntarily aided mankind; the dolphin that saved Arion was often mentioned. Philostratus said the elephant "makes it his business to be tractable"¹⁸—it is his good nature that makes him obedient, not the man on his back. Other creatures, it was noted, flee from humans with good reason; Plutarch reported that martins fear man "as a wild beast," and that the most cunning animal in the world was "that which up to this time man has not discovered." Plutarch anticipated those readers who would dismiss his evidence as an example of the "pathetic fallacy." He said they "foolishly affirm that animals only 'as it were' feel pleasure or anger or fear or make preparations."¹⁹ Their argument, he maintained, amounts to this: if beasts are rational, then we are unjust to kill them; but if we did not kill them, life would be harder for us; so, as not to deprive ourselves unduly, we hold beasts not to be rational.

The argument in the case of plants was harder. Plutarch limited his case to animals, but Pythagoreans generally maintained that plants also were ensouled. The word *zōon* is difficult to translate, since it sometimes denotes *animal* specifically, but can also be applied to a plant in the sense of "a living thing." Empedocles said "that plants are moved by desire," declaring that "they have perception and can feel pleasure and pain," and "that plants have intelligence and knowledge."²⁰

The corollary of these ideas for the Pythagoreans was that all living things are kindred. All souls, whether of humans, animals, or plants, were believed to be immortal and of the same kind. On the death of the body to which it was attached, the soul would pass into another body, and subsequently another, possibly in a very long cycle. Souls which have been in men, they thought, may at other times "become lions, such as make their lairs on the hills, sleeping on the bare ground; or they become laurel trees with goodly foliage."²¹ Plato,

¹³ Empedocles, ff. 130, 77–78.

¹⁴ Porphyry, 2.22.

¹⁵ D. L. 8.4.

¹⁶ Diogenes Laertius *Life of Empedocles* 12.

¹⁷ Hesiod *Works and Days* 277–79; often quoted by the Stoics: cf. Porphyry 1.12.

¹⁸ Philostratus, *Life of Apollonius of Tyana*, 2.11, 14–15.

¹⁹ Plutarch *Moralia* 961E–F.

²⁰ Aristotle *De Plantis* 815a15, b17.

²¹ Empedocles, f. 127.

who accepted this part of the Pythagorean system, suggested that human souls pass into animals appropriate to the character they exhibited in their former lives. Orpheus, with his fine voice, became a swan, while mean Thersites received an ape's body.²² Most people were held not to remember their former lives but some did. It was said that the soul that became Pythagoras had received an imperishable memory as a special gift from Hermes. When he was Euphorbus, he "told of the wanderings of his soul, how it migrated hither and thither, into how many plants and animals it had come."²³ Empedocles said, "In the past I have been a boy and a girl, a bush, a bird, and a silent waterdwelling fish."²⁴

The ethical implications of this belief are perhaps already clear. The story of Pythagoras ordering a man to stop beating a dog because he recognized a deceased friend's voice in the animal's howls is a scurrilous tale, invented to cast derision on the founder, but it does hit the mark. If animals contain souls that were human, they may indeed be those of friends and relatives; therefore, to kill an animal is murder and to eat its flesh is cannibalism. Empedocles, in a passage arguing against animal sacrifice, puts it graphically:

A father seizes a dear son, who has changed his outward shape, and slays him in ritual, so great is his folly. He is deaf to the beseeching cries of the victims as they are being driven to the sacrifice; he slays them and prepares the evil feast. In like manner a son disposes of his father, a daughter of her mother; tearing out the life they devour the kindred flesh. . . . Will you not cease from the evil noise of bloodshed? Do you not see that you are devouring one another in heedlessness of mind?²⁵

In the best Pythagorean thought, it is the whole individual, not just the soul, which is a microcosm of the universe. The universe has a body, composed of the elements, just as it has a soul of which the many souls are fragments. Human bodies, composed of the same elements as the universe, enable the soul to learn. Empedocles warned his followers not to reject any "of the body's parts that might be a means to knowledge."²⁶ Mortals, he said, "can know and recognize" the power of Love which sways and organizes the physical universe, "for she is implanted in their bodies."²⁷ Such a view should not have devalued the body, since the health of the individual was a harmony of both soul and body. The regimen of Pythagoras' students included exercise and careful but not ascetic diet. Pythagorean medicine held that music could be used to restore the soul's harmony—indeed, some of them said the soul was

a harmony—and the physicians who took the name of Zalmoxis, reputed student of Pythagoras, had a saying, "neither ought you to attempt to cure the body without the soul."²⁸ Further, the connection of the individual soul to the body and also to the world soul could be experienced by Pythagoreans as a relationship to the natural environment seen as cosmos, total harmony.

But the other side of Pythagorean teaching is the concept of soul/body dualism, introduced at the beginning of this essay, and it is of crucial importance to the understanding of Pythagorean environmental ethics. This was the doctrine of the separability of the immortal soul (*psychē*) and mortal body (*sōma*): the passing of the soul after death into other bodies (*metempsychosis*) and the purification of the soul through this process until it is delivered from rebirth and becomes like a god. This cycle of rebirth is relevant to ethics. Since the initial fault which doomed the soul to a round of lives was "wrong devouring," the killing and eating of living beings, the soul could improve its destiny by avoidance both of the taking of life and of foods that required its taking. But in this view, all bodies, whether of human beings, animals, or plants, are prisons or tombs,²⁹ and the natural environment itself is the most encompassing of prisons. The physical world, including the human body and the entire world of nature, was to them a trap for the soul: a source of delusion and pollution. The resultant attitude was one of indifference or aversion to the environment. By concentration upon this doctrine, Pythagorean attitudes toward life and nature were led from affirmation to rejection, to holding that the soul alone has lasting value, and that the earthly bodies it successively inhabits are mere husks to be discarded as the soul progresses. From this point of view, the avoidance of meat becomes a means of purifying the soul from a dangerous attachment to the physical body, not an act of respect for life. The body itself is, as the Orphics taught, a "low-roofed cavern."³⁰ The Pythagorean Philolaus thought "that the soul, in being yoked to the body and buried in it as in a tomb, is suffering punishment for past misdeeds."³¹ The body is the portion of the natural environment with which the soul is in most intimate association. If Pythagoreanism encouraged a "great divorce" between soul and body, this also easily became a divorce between the soul and all physical nature.

But before going on to the difficulties into which this mode of thought led its exponents, it will be instructive to look in the opposite direction and try to trace some of the ideas which constituted Pythagorean environmental ethics back in the direction of their origin.

²² Plato *Charmides* 156D. Simmias and Cebes, the "Pythagoreans" of the *Phaedo*, who argue against the immortality of the soul, are strange Pythagoreans indeed. They are either foils invented by Plato or Sophistic offshoots of the tradition (more likely the latter).

²⁹ Philolaus, f. 14, is a plain disproof of the oft-heard assertion that the Pythagoreans did not call the body the tomb of the soul.

³⁰ Empedocles, f. 120.

³¹ Philolaus, f. 14.

²² Plato *Republic* 10.620.

²³ D. L. *Pyth.* 8.4.

²⁴ Empedocles, f. 117.

²⁵ *Ibid.*, ff. 136, 137.

²⁶ *Ibid.*, f. 3.

²⁷ *Ibid.*, f. 17.

The source here suggested for Pythagorean environmental ethics is, however paradoxical it may sound at the outset, the world view and ritual practices of tribal hunters, fishers, and gatherers which underlay and persisted as a substratum in Greek traditions. True, the Pythagoreans execrated hunters as soiling their hands with kindred blood, but without realizing it, they themselves quite probably preserved a series of attitudes inherited from the ancestral hunting culture.

The thought world of the primitive hunter revealed by comparative ethnography and confirmed at many important points by archaeology is radically different from the dominant conceptions of civilized people in ancient and modern times. To the latter, the natural environment is an assemblage of objects or resources to be used, and hunting is exploitation of potential assets, or, when no need exists for the resource, a sport. But to the former, the natural world is alive with spiritual forces. Such entities as animals, plants, rivers, and winds are powerful beings whose cooperation is necessary for the survival of the human group. Hunting is an awesome ritual through which a mystical bond is established between hunter and hunted, and the attitude of the hunter is reverence for the life that is being taken but not regarded as destroyed. It should be remembered that fishers felt the same way about fish, and those who gathered plants felt the same way about the species they were using. The rituals involved were analogous.

The set of attitudes described here and the practices that incorporate and express them were universal among hunting peoples. It was the basis of the environmental ethics of American Indians, one of whom described hunting as a "holy occupation,"³² involving care and honor for the prey species. It has been found by ethnologists among tribes in Africa, Australia, Siberia, and even more to the point, in aboriginal Europe, particularly Scythia, Thrace, and the Danube Basin, where early Greek connections existed. Such connections have been advanced for the Pythagoreans and their Orphic forbears, but usually in regard only to special features like Shamanism. In this essay, the reference is not to one or two traits, but to the way "reverence for life" was embodied in the entire culture of the hunting peoples.

To the early hunters and gatherers, animals and plants were beings like humans, with immortal spirits whose powers often surpassed those of human beings. These spirit beings could communicate to humans in dreams and visions, and could hear what was said about them or to them even at a distance. Because of their power, and the total dependence of the hunter on a successful hunt for survival, the hunter both respected and feared them.

³² Frank G. Speck, "Aboriginal Conservators," *Bird Lore (Audubon Magazine)* 40(1939): 260. Cf. J. Donald Hughes, "Forest Indians: The Holy Occupation," *Environmental Review* 1, no. 2(1977): 2-13.

Respect and honor had to be given the spirit because if a hunter treated the prey with all the deference and care to which it was entitled, he believed that it would tell others of its own species, or report the good treatment to the guardian of that species or of all game animals, the Lord or Mother of the Animals. The result was expected to be continued success in the hunt, adequate numbers of animals in the hunting territory, and prosperity. But if a hunter mistreated the game or failed to give it its due, the weapons might be cursed, the hunter fall ill, and the animals hide or leave altogether. One of the cardinal rules of respect for animals was to spare all those for which the hunter had no present necessity. Here a basic fact of subsistence ecology, namely the conservation of game populations for future needs, appears to have been written into the culture in letters of attitude and ritual. If too many were killed, the species might in fact have "left" the local hunting grounds. It is interesting to note that the system of ritual and respectful attitudes was intensified in the case of principal game species like the stag, or powerful predators like bear and wolf, and was sometimes so strong as to forbid the killing and/or eating of designated species entirely for certain tribes, clans, or individuals. Similar principles applied to especially important and powerful plants like mandragora and mushrooms.³³

Rituals giving honor to prey began with the taboos intended to keep both hunter and weapons free from any taint displeasing to animals: often weapons were wrapped and kept in special places. Ceremonies often were carried out before the hunt to ask for the cooperation of the animals and to purify the hunter for the quest. The hunt itself was the central ritual. The animals were believed to consent to it and offer themselves willingly to a good hunter, who therefore had the ability to call them forth from hiding or lull their suspicions. They had to be called with respect, killed swiftly and with as little pain as possible, and propitiated with words of thanks and apology and rites of honor. Ritual conduct did not cease with the return of the carcass to camp or village, but could actually increase. Offerings were made and songs intoned. The Chuckchis held a funeral festival over a dead wolf, chanting the repeated refrain, "Wolf, don't be angry with us!"³⁴ Careful treatment of the animals' remains was enjoined. Skins were worn in ceremonial dances. Skulls were preserved and carefully placed high in trees; bones of certain species were kept away from dogs. The Gilyaks forbade stepping on ground where bear's blood had been spilled. Often the hunters themselves were tabooed and required to undergo purification before they could return to normal life in the tribe.

³³ Mircea Eliade, *Zalmoxis: The Vanishing God* (Chicago: University of Chicago Press, 1972), pp. 204-25.

³⁴ James George Frazer, *The Golden Bough: A Study in Magic and Religion* (New York: Macmillan, 1935), 8: 221.

Further aspects of the tribal culture of hunters, fishers, and gatherers offer interesting parallels and possibly have a place in the actual lineage of Pythagorean principles. Relationship with the clan animal or plant was expressed in kinship terms and in the myth of descent from a nonhuman ancestor, often including the origin of the clan in the sexual coupling of a human progenitor, either male or female, with an animal. Lycanthropy included but was not limited to belief in werewolves. Herodotus reported that every member of one Scythian tribe turned into a wolf for a few days and then returned to human form,³⁵ perhaps the reflection of an annual tribal wolf festival. The idea of the interchangeability of human and animal souls was definitely entertained. A man might assume the body of a wolf or, putting on a bearskin, might be possessed by a bear spirit in its fighting range and become a berserker ("bear-shirter"). This was sometimes institutionalized in membership societies where ritual included the symbolic slaying of initiates and their resurrection as "animals" of the patron species. There is a striking resemblance between these concepts of animal transformation and the Pythagorean idea of metempsychosis into animal bodies. But the parallel can be pursued even further.

Primitive hunters and gatherers conceived of the souls of animals and plants as immortal and capable of rebirth in another body. Many believed that the souls of slain prey survive their bodies' death and may be reincarnated as creatures of the same species, which can be hunted again. Ritual prayers formally invited the souls to do this, and the prescribed treatment of skins and/or bones was intended to make return possible, or at least easier. When this idea is combined with that of the movement of souls into other species, described above, the result is very similar to Pythagorean doctrine, and in fact that combination of ideas is attested in the ethnographic literature. For example, "if a Gilyak falls in combat with a bear, his soul transmigrates into the body of the beast."³⁶ Souls also are often conceived by primitives as having the form of birds or animals.

Shamanism among northern hunting peoples has received much attention as a model of the separable and transferable soul.³⁷ The shaman is a person whose vocation is to deal with the world of spirits on behalf of members of the community. This presupposes a recognition of special psychic talents in a prospective shaman, as well as an experience of being called to the task, vigorous disciplined training, and spiritual initiation. Some aspects of shamanism suggest a Pythagorean connection. The shaman's soul can separate itself from the body and travel into any part of the universe, including earth, heaven,

and the underworld. While it is elsewhere, the soul may exhibit the complete appearance of the living person; this institutes "bilocation," a phenomenon attributed to Pythagoras. Sometimes a shaman may experience ritual death and resurrection. The bodily shape of an animal may be assumed by the shaman's soul, and the shaman may have a close mystical relationship to a special tree. Finally, the shaman may become a guide of souls through the mysterious topography of the world of the dead. All these phenomena appear in the legends of Pythagoras or the Pythagoreans.

This close connection, moreover, between the beliefs of tribal hunting-gathering cultures and Pythagorean teachings need not depend simply on the enumeration of resemblances. An actual genetic relationship, and/or means of transmission, can also be proposed. The existence of a hunting-gathering-fishing tradition among the ancestors of the Greeks can certainly be postulated if one goes back far enough, since in Europe and Asia before the invention of agriculture in the Neolithic Age, all human societies were at that level. One must seek the linguistic-cultural ancestors of the Greeks in the northern Balkans, roughly in the Danube basin area in the fourth millennium B.C., possibly further north before that. The evidence of Indo-European linguistics points in that direction, and the first Greek-speaking people to enter the Aegean world seem to have emerged from that direction around 2000 B.C. Although agriculture was practiced in that part of eastern Europe as far back as the sixth millennium, and was well-established by the fifth millennium, the hunting way of life was by no means supplanted. As Ruth Tringham observes, the first farmers occupied "exactly those areas which were avoided by the hunters and gatherers,"³⁸ due to variations in soil and forest cover, so that the hunter-gatherer economy persisted alongside the newer pastoral-agricultural economy for a very long period. One cannot attribute the complete set of spiritual attitudes described above even to such early examples of the pastoral-agricultural society as the lion hunters of the *Iliad*, who were defending their herds of sheep and goats against animals seen as wild marauders. But they did inherit some attitudes and practices from the hunting societies that were inescapably their ancestors. They retained a sense of the spiritual power of animals and plants, and continued to practice rituals originated by hunters. Classical hunting manuals, produced by citizens of agricultural-based urban societies, still retained survivals of earlier traditions, such as the "bag limit" and offerings to Artemis mentioned in Xenophon's *Cynegeticus*. There were survivals of fragmentary hunting cultures in isolated parts of Greece and Magna Graecia well into the classical age. The hunters of Euboea described by Dion Chrysostom³⁹ may serve as an example. Clans like Dion's "noble savages" lived within

³⁵ Herodotus 4.105.

³⁶ Frazer, p. 191.

³⁷ E. R. Dodds, *The Greeks and the Irrational* (Berkeley: University of California Press, 1951), pp. 135-56; cf. Eliade, pp. 34-42.

³⁸ Ruth Tringham, *Hunters, Fishers, and Farmers of Eastern Europe, 6000-3000 B.C.* (London: Hutchinson, 1971), p. 68.

the economic and ecological shadow of Mediterranean cities, and serve to demonstrate the tenacity of the hunting culture.

Orphism and Pythagoreanism have northern connections in association with elements reminiscent of the hunters' traditional culture. Orpheus frequented northern mountains, not only Olympus but also Thracian Pangaeus, where he charmed wild beasts and trees with the music of his lyre and voice. One thinks of the hunter's ability to call animals. We are told that he is lying not dead but living "in light" in a cave under Pangaeus (perhaps in a state analogous to the shaman's trance).³⁹ His visit to the underworld to recover Eurydice is the kind of soul journey that shamans undertook. Thracians, known to the Greeks as a primitive people who despised agriculture, were reputed to be originators of ecstatic cults. Among elements surviving in Thracian religion were, notably, animal cults and belief in survival of the soul after death.

A tradition attributed to Aristotle identified Pythagoras as the incarnation of Apollo of Hyperborea, the "Land Beyond the North Wind."⁴⁰ This country cannot be fixed in real geography, but Herodotus places it on the far side of the Scythians and says that offerings from there, intended for Delos, first arrived among the Greeks at Dodona in Epirus, near the northwestern corner of continental Greece. Abaris, another shaman-like wonder worker who was called a Hyperborean, demonstrated what appears to be the most extreme form of Pythagorean doctrine by refusing to eat any food at all.

Shamanism itself indicates northern connections; ethnography identifies it among all the Finno-Ugric, Turkic, and Siberian peoples. Ruth Tringham describes an archaeological trove of several hundred objects found in a deposit of the Gumelnitza culture in Karbuna, Moldavia, as the ritual equipment of "a shaman-like personage, with ornaments to be attached to a textile garment."⁴² The resemblance to the costume of a shaman of historic times such as that described by Prokofyeva⁴³ is intriguing. Dodds identifies both Pythagoras and his later follower Empedocles as shamans.⁴⁴

But most decisive of all shamanic figures for Pythagoreanism's northern connection is Zalmoxis (Zamolxis), who is reported to have served the Getae, a Danubian tribe, either as human lawgiver and teacher or as god. According to a Greek account, he was a freed slave of Pythagoras who taught the Getae and neighboring tribes to abstain from "eating any living thing."⁴⁵ Instead,

they ate only honey, cheese, and milk, earning the names "Hippemolgi" ("Horse-milkers") and "Galactophagi" ("Milk-eaters"). Zalmoxis, like Pythagoras, was said to have hidden in an underground dwelling for a long period and then to have deceived the people by enacting a "resurrection." But Zalmoxis was a traditional god of the Getae. The Greek story about his taking Pythagoras's teachings northward is transparently etiological, and the true path of influence seems to have been in the opposite direction. His name derives from Thracian words for earth (*zamol*) or bearskin (*zalmos*);⁴⁶ the association of bears with Mother Earth through caves and hibernation, including a kind of rebirth in springtime, would make both names roughly equivalent in mythic function. In addition to his dietary teachings, Zalmoxis was said to confer immortality of the soul upon his followers. The resemblance between Pythagoras's teachings and the actual beliefs and practices of a northern tribe probably represents the persistence of traditions of northern hunting and gathering peoples in Pythagoreanism, rather than the reverse.

Such traditions are extremely tenacious. One would expect that once the hunting-gathering life style was subordinated to new patterns like agriculture, pastoralism, and urban life, earlier views of nature would gradually disappear. Of course, attitudes changed, but this happened over a period not of generations but millennia. Instead of disappearing, the earlier traditions were retained but reinterpreted. The means of transmission was religion: official religion including its literary expression, but also and most persistently popular religion, customs, and folklore. There is abundant evidence that old hunters' myths were retained through these channels, and in Pythagoreanism became the basis for a more sophisticated philosophical attitude of reverence for life. Many very ancient traditions with hunting-gathering affinities survived in these ways.

Most Greek deities had associations with special animals and plants which assumed importance in their cults, and were sometimes spared on their behalf. Artemis protected deer in her sacred groves, where hunters were forbidden to exercise dogs or weapons. In a version of the Iphigenia story, Agamemnon was punished for killing such a deer. Bears were also hers; the cult at Brauron originally involved maidens dressed in bear costume doing a bear dance. She was also patroness of hunters and huntress *par excellence*; the apparent inconsistency can be resolved by recalling the early hunters' attitudes toward the sacredness of game, and the necessity to make offerings and to propitiate the Mistress of Wild Animals for success in the hunt. (*Potnia Theron* is exactly the Homeric title of Artemis.)⁴⁷ Artemis demanded a portion of the bag from

³⁹ Dion Chrysostom *Discourse 7* (*The Euboean Discourse, or, The Hunter*).

⁴⁰ Euripides *Rhesus* 970ff.

⁴¹ Wheelwright, pp. 220-21.

⁴² Tringham, p. 203.

⁴³ Ye. D. Prokofyeva, "The Costume of an Enets Shaman," in *Studies in Siberian Shamanism*.

ed. Henry N. Michael (Toronto: University of Toronto Press, 1963), pp. 124-56.

⁴⁴ Dodds, pp. 143-46.

⁴⁵ Strabo 7.3.5, C297-98.

⁴⁶ Eliade, pp. 44-45.

⁴⁷ Homer *Iliad* 21.470. A devotee of Artemis, Euripides' character Hippolytus has been offered as an Orphic-Pythagorean type, to which Dodds objects, "We really must not turn a bloodstained

the hunter for allowing her creatures to be slain. Apollo Lykaeos, the wolf god, had an interest in his sacred animal. "In ancient Athens any man who killed a wolf had to bury it by subscription."⁴⁸ His title *Smintheus* ("mouse-god") indicates that those who wished to kill mice had to obtain Apollo's permission. Pan was known to protect turtles. And so it went with the gods and their animals: Athena's snake and owls, Zeus's eagle, Dionysus's panther, Apollo again with ravens.

The particular importance of the chthonic goddess who went by many names, among them *Gē* and Great Mother, must be noted. The earliest traditions assert that all life, human, animal, and vegetable, was originally conceived within her, and that she must be treated with care and reverence. These ideas survived in classical times, and their anti-agricultural bias may be reflected in the practice of setting aside sacred areas that could not be cleared or tilled.

The reservation of sacred plots of ground (*temenē*), usually tracts of forested land, though later also planted tree groves, embodies the hunting tradition. Within their precincts, memories of the old relationship with the natural world survived. Certain species were regarded as sacred and forbidden to the hunter there. Again it must be recalled that early hunters regarded prey species as ensouled, entitled to respect, and protected, until the animals themselves gave assent to the kill. A hunter had to be purified for the hunt; inadvertent trespass in the groves by hunters also required purification (*katharmos*) in order to remove the ritual pollution (*miasma*) incurred by the violation. In both cases, that of the early hunter and that of the trespasser in the classical grove, a right relationship with the indwelling spirits of nature had to be achieved through ceremonial cleansing. The school of Pythagoras and those patterned on it were located in sacred groves of trees.⁴⁹

Greek religion, especially on the folk level, was so complex and conservative that many traditions from hunting and gathering days had a chance to survive as relics in the popular mind. Orphism had a particular affinity for these survivals, so that when Pythagoras began to formulate his philosophical system, he found them ready to hand. Interestingly, he found there both of the opposing elements which created the unresolved tension within Pythagorean environmental thought: (1) the honor of the natural world as spiritual, sacred,

hunter into an Orphic figure." But here is the hunters' paradox again. The game is sacred and may not be hunted *except* by those who do so properly, as a "holy occupation." To those, the animals give themselves willingly. Hippolytus's single-minded devotion to Artemis is exactly the kind of discipline we would expect of the primitive hunter, who kept himself precisely from Artemis' rival Aphrodite before and during the hunt through abstinence from sexual relations. Orphism-Pythagoreanism retained the negative prohibitions and the positive teachings about the sacredness of all life, and a touch of "hunting magic" can be detected as part of the set of cryptic rules preserved among the *symbola*. Cf. Dodds, p. 148.

⁴⁸ Frazer, p. 221.

⁴⁹ Both the Academy and the Lyceum were also located in sacred groves.

ensouled, entitled to respect and reverence, and (2) the belief that the immortal soul is on a journey of purification in which it leaves the body behind like an empty shell.

The picture that I have developed here is that of a "pure" or normative Pythagoreanism whose principles are intuitively ecological, developing with the influence of altered but surviving traditions of an earlier hunting-gathering society. Pythagoreanism in the Greco-Roman world, nevertheless, was complex, neither pure nor static. The most outstanding exponents of Pythagoreanism were individuals like Empedocles and Apollonius of Tyana, so colorful as to border on the eccentric, and highly unorthodox in many ways. So it is not surprising to hear of a schism after Pythagoras's death. The master had been a many-sided genius, and two of the strongest roles he developed were as religious teacher and as scientific theorist. Each group of his followers developed one of those tendencies. The *Mathematikoi* prized his scientific ideas, particularly the mathematical ones, and tried to teach them and to make further discoveries. They felt that their learning, though difficult, was not esoteric and should be open to anyone capable of understanding it. Hippasos of Metapontum was punished for revealing mathematical secrets by those who opposed his openness. This school might be assumed to have had a potential affinity for the concepts of scientific ecology, but there is no evidence that this actually occurred. The questions they addressed were in the realm of mathematical theory, including theory of music, astronomy, and geometry, and they neglected almost all forms of biology except medicine.

The other group, the *Akousmatikoi*, accepted Pythagoras's religious teachings as an authoritative body of mystical knowledge to be confided only to initiates. Since the commandments, or *symbola*, included many which required ethical behavior in the environmental sphere,⁵⁰ it might be thought that the practice of this group would have preserved some of the positive elements noted above. Such was the case in a limited sense. But the theory of the *Akousmatikoi* increasingly emphasized purity of soul and rejected any concern with the natural environment as tying the soul to this world and the body, while their practice in the area of environmental ethics reflected a gradual relaxation of the rules and a tendency to adapt themselves to the general attitudes of ancient culture. This relaxation can be seen quite clearly in dietary rules. A "pure" Pythagorean diet of milk, honey, and fruits which fall naturally was not impossible, but it would have been inconvenient and monotonous. An important late modification replaced the objection to killing any living thing for food with what came close to mere vegetarianism. This was accomplished by a specific denial of the Empedoclean doctrine that plants are ensouled, a denial made by such writers as Porphyry, who said, "Plants are

⁵⁰ E.g. "Do not throw stones into fountains."

destitute of sensation: nothing foreign, evil, hurtful, or injurious can befall them."⁵¹ Thus, late Pythagoreans thought that eating bread, freshly picked greens, and nuts, was virtuous, although beans were never allowed since they had been proscribed in adamant terms by the early rules.

Exceptions appeared in the rules against killing animals, too. In spite of bitter condemnations of animal sacrifice in Pythagorean literature, later exponents allowed it as a form of worship. A further accommodation of principle can be seen in the doctrine that while killing and eating animals was to be generally avoided, there was "no injustice in slaying anti-social, injurious animals," although "it does not follow that if it is requisite to kill some, it is necessary to slay all animals."⁵² Plutarch allowed hunting if done with as much gentleness and pity as possible, for food necessary to life, not pleasure. But even there the force of his moral suasion is diluted, since he also maintained that humans should not "squander upon animals that capacity for love and affection which in the natural order of things should be reserved for our fellow men."⁵³ Plutarch generally is quite sympathetic to the rights of animals, and the comment just quoted should be set against a much more extensive section of his writings in which he argues for the rationality, intelligence, and natural morality of beasts.

Again, the reason for the pattern of dilution and acculturation in Pythagorean environmental ethics in the religious wing of the movement is that the primary concern of this group lay elsewhere—in purification of soul and avoidance of contamination of spirit with the nonspiritual. This became the dominant obsession of late Pythagoreanism. Ritual purification achieved ascendancy over the sense of the sacredness of nature in the tradition. As Porphyry puts it, "It is necessary, if we intend to return to things which are truly our aim, that we should divest ourselves of everything of a mortal nature which we have assumed [the body], together with an adhering affection toward it, which is the cause of our descent [from the purely intellectual, spiritual state]."⁵⁴ The Orphic-Pythagorean tradition thus promoted "a horror of the body and a revulsion against the life of the senses." It set "soul and body at odds,"⁵⁵ thus eroding environmental ethics.

In the *Life of Apollonius*, the Pythagorean protagonist is portrayed traveling through the Central Asian mountains with his disciple, Damis. Here occurs one of the rare unequivocal statements of admiration of wilderness country in ancient literature. Damis calls the mountainous scenery "divine," and asserts that it is better to be there than among men. But Apollonius replies in deprec-

⁵¹ Porphyry, 3.19.

⁵² Plutarch *Moralia* 964F; Porphyry 2.2.

⁵³ Plutarch *Life of Pericles* 1.

⁵⁴ Porphyry, 1.30.

⁵⁵ Dodds, pp. 139, 152.

tion of the physical world, countering that the pure soul "will soar much higher than this summit of Caucasus."⁵⁶ In subsequent centuries, every time the Orphic-Pythagorean religious tradition surfaced, it brought with it an anesthetic indifference to the natural environment.

Pythagoreanism was, except for brief periods of ascendancy in parts of Magna Graecia, a minority view among Greek philosophers. Still, it was widely noticed and its influence was deep, not least upon Plato. Those who attempted to practice its precepts were isolated individuals and small groups, albeit remarkable and sometimes powerful ones. Its effect upon general environmental attitudes and practices in the ancient world was minor, and the most markedly environmental of its ethical teachings tended through compromise to reduce to those of the general culture of Greco-Roman antiquity, while its purely religious teachings soared off into the realm of the pure spirit as a balloon sheared of its moorings soars into the atmosphere. The severing of the connection with earth was fatal to environmental ethics, at least insofar as the later Pythagoreans and their medieval heirs are concerned.

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Two conflicting tendencies may be discerned in Pythagorean ethics as applied to the environment: on the one hand, a sense of reverence for nature and kinship with all life that opposed killing and other forms of interference in the natural world, and on the other hand, a doctrine of the separability of soul and body which denigrates the body and the external world of which it is a part. The prescriptive content of Pythagorean ethics includes prohibitions against taking life, even in sacrifices to the gods, and against eating anything that has been killed. Pollution of certain kinds is forbidden. These strictures were based on an organic, cyclical view of the world, emphasizing its harmony and balance. The Pythagoreans investigated some questions that would today be called ecological. Perhaps most importantly, they evinced a genuine respect for living things, deriving in part from the belief that animals and plants contain the reborn souls of human beings. These doctrines may have been derived from the attitudes and practices of ancestral hunters and gatherers in southeast Europe, with traditional Greek religion serving as the means of transmission from tribal cultures to classical philosophy. The followers of Pythagoras split into two schools: a "scientific" school that neglected biology and therefore ecology, and a "religious" school that emphasized purity of soul and rejected any concern with physical nature. The more "environmentalist" teachings were gradually abandoned as the Pythagoreans accommodated themselves to the general attitudes of Greco-Roman culture. For instance, the objections to animal sacrifice, and to most plants as food, were dropped. The divorce of body and soul in later Pythagorean thought, wherever its influence was strong, brought with it indifference not only to the body, but to all the rest of the natural environment.