CHAPTER 7

Foods for the Gods

Because food is the human's most fundamental resource, offering food or abstaining from it are symbolic ways in all societies of showing devotion to supernatural powers. Although an offering might be considered the same as a gift, the two differ. First, an offering implies unequal status, the recipient being the superior party; and second, whereas gifts are almost always accepted, whether or not they are desirable or appropriate, an offering may not be found worthy by the supernatural. A more restricted kind of offering is the religious sacrifice, which means, as its name implies, the surrendering of something of value, a denial of it to oneself in favor of the supernatural. Most sacrifices consist of food, and meat is favored because it is more difficult to obtain than plant food. Those who sacrifice a cow, a goat, or a chicken appear to be saying that they know they cannot afford it, but that their loss will be overcome by the even greater benefits to be obtained from the supernatural.

Although Greek and Roman writers referred to human sacrifice as the practice of barbarians, in Homeric times the Greeks would occasionally kill a prisoner to placate an angry god, and the Romans from time to time sacrificed Greeks, Gauls, or Christians. In most instances, though, animal rather than human flesh was brought to the altar, ritually killed, cooked, and distributed to the faithful for a ceremonial feast. Animal sacrifice is mentioned in the Old Testament stories of Cain and Abel, of Noah, of the patriarchs— and, of course, the Israelites would not have been immune to the tenth plague in Egypt except through the sacrifice of the Paschal (Passover) lamb, whose blood they smeared on their doorposts so that Yahweh would recognize and "pass over" the Israelite households while the Egyptians were smitten by the deaths of their firstborn. Animal sacrifice among the Israelites
occurred not only on Passover but also at the Feast of Weeks (Shavuot) and the Feast of Tabernacles (Succoth), at the new year, on the first day of the new moon, as an act of repentance, and in fulfillment of vows. According to the first book of Kings (8:63), Solomon sacrificed 22,000 cattle and 120,000 sheep at the dedication of the Temple. Sacrifices continued to be offered until the Temple was destroyed by the Romans in A.D. 70; they were commonplace during the time of Jesus, who made no objection to them.

For the Bantu peoples of southern Africa, a sacrifice might consist of flour or beer, but is most usually a domesticated goat, sheep, or an ox. Wild animals are never offered as sacrifices because they are free gifts of nature and therefore lack the high value that a sacrifice is supposed to have. The Bantu make plain that a sacrifice is not the expression of “religious devotion” or “group emotion,” as some divines have declared this kind of offering to be, but rather the equivalent of a complicated marketplace negotiation. Concrete demands are made of the spirits; the value of the sacrifice is calculated precisely so as not to be more valuable than the favor being asked; and acceptance of a sacrifice pledges the spirits to bestow that favor. The sacrifice of a prized animal on the occasion of a marriage, for example, binds the spirits to approve the newly established ties and obligations between the relatives of the married couple.

Sacrifices of food might seem at first thought to be extremely wasteful, especially for the Bantu peoples who often subsist on a diet deficient in protein. The truth is that in societies that stress animal sacrifice, there is little waste, since the frequency of sacrifice and the quality of the offerings both vary greatly according to what is available. When cattle are plentiful, a sacrifice will mark a rite of passage, or the arrival of either too little or too much rain, or an illness among either humans or animals, or the commemoration of various ancestors. In fact, so many potential occasions for a sacrifice can be found that one might be held on almost any day of the year. Once the animals have been sacrificed and the ancestral spirits have had their fill, the meat then of course becomes a great feast for humans. On the other hand, excuses can always be found for not offering a sacrifice at a time when animals are scarce.

Regardless of the occasion, the animals used for a sacrifice will be chosen with a prudent regard for economic loss. Among the Nuer, a cattle-complex people of southern Sudan, the herds are so small that each person owns an average of no more than two animals. The Nuer say that the sacrifice of a healthy young ox is fitting for an important occasion such as a wedding, a grave illness, or a severe drought. In actual fact, though, an old and virtually useless ox, or even a barren cow, is more likely to be sacrificed; if even such an animal cannot be afforded, the Nuer will substitute sheep and goats, which will nevertheless be referred to during the sacrifice as yang (“cattle”), in what amounts to a flagrant hoodwink of the supernatural. Should a Nuer not want to part with any animal at all, he can resort to the further expedient of finding a small cucumber that grows wild in abandoned fields and offering it as though it were an ox, calling it yang and ritually stabbing it with his spear. The cucumber is thus consecrated as if it were an ox, and for all ritual purposes an ox it is.

Entering into the calculations of the Nuer about any sacrifice is the extent to which a particular offering will place the spirits under an obligation to reciprocate with some desired benefit. Once a sacrifice has been made, justice is on the human side, and the spirit is the one at fault if the person making the sacrifice does not receive a benefit in return. The transaction is much like trade between the Nuer and Arab merchants. The Nuer do not think of the transaction as actually bleying things from the merchants; rather, they are offering the merchant something as a favor, for which he is expected to reciprocate with a gift from his shop. Nor have the spirits been “bought” in the Western sense; they have simply been made aware of an obligation to repay the sacrifice with deeds. A bargain has been struck, a sacrifice has been made — and the spirits must now live up to their part of the bargain. The economic calculation involved in sacrifices was understood by Plato, who in his dialogue Euthyphro has Socrates speak of offerings as “an art which gods and men have of doing business with one another.”

If the Nuer are not to suffer a decrease in the size of their herds and flocks, a homestead consisting of several huts cannot afford to sacrifice more than the one or two animals on an average born each month. This may not seem like much meat per capita, particularly when the sacrifice must be shared with other homesteads — but with other homesteads likewise sharing their meat from
one or two sacrifices per month, a distribution of meat throughout the year is insured. Whatever the Nuer might say about the religious importance of sacrifice, it is a matter of economic survival to be flexible about what is offered on the occasion of a particular sacrifice. The size of the herds at the moment, the question of whether or not meat has been shared recently, the weather, the prospects for obtaining food, and numerous other considerations determine whether a Nuer herder will sacrifice a healthy young ox, some other animal, or a wild cucumber — or find an excuse not to hold a sacrifice at all.

Those who live in a more complex society might regard such attitudes toward sacrifice as immoral and in no way pertinent to their own experience. But who can swear never to have negotiated anything with the supernatural? In time of illness or danger, even the agnostic might silently vow, “Lord, if you do such-and-such for me now, I will do such-and-such later.” And who is there even among the devout who has not once calculated the economic worth of a religious offering? Animal sacrifices might seem to be of little consequence because modern societies have substituted for the scarce resources of the Nuer scarce attitudes as selflessness of the mind and heart. It must be pointed out, though, that the switch by modern religions from concrete food to abstract piety as the object of sacrifice has conveniently done away with an awkward problem: the enormous cost in resources if a ceremonial feast were to be made available to a large and dense human population. People in modern societies have been told that it is no longer important that a sacrifice be food fit for the gods; rather, it is the act of giving that matters.

This modern view of sacrifice — as a moral act that places high value on things of the spirit rather than upon subsistence resources that are in short supply — amounts to a major restatement of the traditional view that sacrifice entails a material loss. The economic calculation of modern religions is, upon analysis, little different from the prudent manipulations of the Nuer. As the founder of modern anthropology, Edward B. Tylor, observed more than a century ago, “Throughout the history of sacrifice, it has occurred to many nations that cost may be economized without impairing efficiency. The result is seen in ingenious devices to lighten the burden on the worshipper by substituting something less valuable than what he ought to offer, or pretends to.”

A quite different way of expressing devotion to the supernatural is to deprive oneself of food by fasting. Fasting has been variously justified as cleansing the body of impurities, as atoning for sin, as a protest of inequities, and as fostering an appreciation of the hunger suffered by others. No matter what the reason, fasting would seem to be an irrational form of behavior in that it deprives the individual of essential nutrients; in fact, zealous fasting sometimes produces the same medical symptoms as are seen during famine caused by drought or war. Yet fasting has managed to persist in all the major religions, as well as in many local cults, regardless of its effect on physical well-being.

The reason for this is that fasting is usually not very harmful, because each religion offers ways to alleviate its deleterious effects. Each kind of fast has a provision that circumvents possibly harmful consequences. The fasting by Jews on Yom Kippur is a total one — but it lasts for only a day. For Roman Catholics, the Lenten fast covers the forty weekdays before Easter — but it involves only certain foods, for which substitutes are available. Moslems fast during the entire ninth month (Ramadan) of the Islamic calendar. Abstinence from nourishment is, though, restricted to the hours between sunrise and sunset; once the sun sets, any food not specifically forbidden in the Koran can be eaten, with the result that gluttony in the evening and before dawn is fostered. And those Moslems who might find fasting difficult are exempted: children, women who are menstruating, pregnant, or nursing an infant, people engaged in manual labor, soldiers, and travelers. Furthermore, fasting is sometimes adaptive for the society — as in Ethiopia, where fast days often correspond with the “hungry season” when food is in short supply anyway, thereby stretching out the scant supplies.

For the Hindus of India, fasting is an extremely complex matter: the kinds of fasts and their frequency vary according to caste, sex, age, and degree of orthodoxy. Devout Hindus might fast to appease a deity, to obtain a boon, to ward off evil, or to honor a particular god or goddess (each one of which is to be revered by fasting on a specific day) — in addition to such occasions throughout the calendar year as the new and full moons, the eleventh day after the new moon, the equinoxes, and the solstices. It is readily apparent that a year contains many more potential fast than nonfast days. Devout Hindus obviously could not survive
if their many fasts consisted of total abstinence from eating—and indeed most fasts are only partial. Nor do the Hindus engaged in a fast suffer from any marked decrease in the amount of food consumed. Whatever foods they are allowed to eat are prepared in such quantity that on fast days a Hindu might actually eat more than on a nonfast day.

Most religions involve not only offerings, sacrifices, and fasts, but also the consumption of certain foods on specific occasions. As a result, those plants and animals that the religion has sanctified will be moved from place to place in company with the pious; the turmeric plant of India, for example, which is used not only as a seasoning but also in Hindu ritual, has in this way been spread throughout southeastern Asia. Jews and Christians have both placed a high sacramental value on wine made from grapes, thus encouraging the cultivation of the vine far beyond the Mediterranean. Christian monks brought it to many of today's wine-producing centers, all the way eastward to the Crimea. Later, Spanish, Portuguese, and French priests brought the European grape to parts of the New World. Jews returning to Palestine during the nineteenth century found that the ancient vineyards there had been uprooted by the Moslems, who forbid the drinking of alcohol. One of the first tasks they undertook was to establish grape cultivation to meet their ritual needs.

A less familiar example of the spread of a food for ritual use is the planting throughout the Mediterranean in Roman times of citrus trees, which are not native to the Mediterranean. The whole story of their introduction and spread is unknown. Plant geographers do not even agree about the exact place of origin of citrus, but it is believed there to have come from the region between southern Arabia and western India. The first member of the genus to be carried to Mesopotamia and to the Nile Valley was the citron, which may have been singled out because its fruit is large (between four and eight inches across), and because the tree itself is striking in appearance, flowering throughout the year. Its cultivation in the Holy Land possibly dates to the reign of King Solomon. In any event, the Jews certainly must have brought it to Palestine by the time they returned from captivity in Babylon about 2500 years ago. It figured in the celebration of the autumn harvest festival variously known as the Feast of Tabernacles, the Feast of Tents, or Succoth, which traditionally called for "the fruit of a goodly tree," usually taken to mean the citron. By at least 2100 years ago, the citron had come into common use, and it was even proposed as a standard of measure, much as the carob seed had been used as a standard of weight. After the Jews rebelled against Rome in A.D. 66, they were dispersed to various Roman colonies. Because the Jews took the citron with them for use in ritual observances, many of the places where they went at that time have continued to this day to be centers of citrus production—including southern Spain, Italy, Sicily, Tunisia and Algeria, the Nile delta, Turkey, and the coasts of Lebanon and Syria.

The rabbis had laid down rigid specifications about the size, shape, freshness, and unblemished state of the citrons used for ritual purposes. Since to produce a single acceptable fruit probably hundreds had to be grown, a market had to be found for the rejected ones. That was not difficult because many Romans soon recognized the citron's virtues for food and also came to attribute magical and medicinal qualities to it. Pliny the Elder recorded in his Natural History that these "Palestinian trees," as he called them, were becoming naturalized in Italy, although he personally did not find the fruit to his taste. The citron nevertheless remained a luxury item, and in A.D. 301 the Emperor Diocletian set the maximum price for a citron at twelve times that for a melon.

The cultivation of other citrus fruits was apparently a by-product of all this. Jewish gardeners, who were in demand throughout the Roman world for their skill in fruit cultivation, had not overlooked the orange and the lemon, fruits with similar requirements for growth; they had in fact used the citron as grafting stock for other kinds of citrus, particularly the orange. The Talmud, in which the oral law of the Jews was codified during the early centuries of the Christian era, mentions what appears to have been the orange as "the sweet citron." After the fall of Rome, the market for oranges and lemons disappeared. The cultivation of the citron alone continued without interruption simply because it was used ritually by Jews throughout the Mediterranean. Other kinds of citrus were not grown again in quantity until the tenth century, when they were once more introduced into Europe, this time by the Arabs.
All through the Old Testament — from Genesis through the Song of Solomon and in the stories of David, Samson, Job, Judith, Esther, and Ruth, to name only a few — eating scenes are as frequent as battle scenes. Everywhere in the ancient Mediterranean world, certain foods were associated with gods, spirits, and supernatural heroes. In Egypt, Osiris was the god of grain as well as the god of death and rebirth. The Iliad, the Odyssey, and other ancient sagas are filled with references to food, drink, feasting, and sacrifice. The early martyrs of the Christian Church included an extraordinary number who endured tortures and temptations concerned with eating, performed miracles involving food, or were killed by being boiled, broiled, roasted, minced, and served up at a meal.

The central mystery of Christian ritual centers around eating, and it was long a subject of contention. The occasion of the Last Supper is described in the gospel according to Mark (14:22-24):

And as they did eat, Jesus took bread, and blessed and brake it, and gave it to them, and said, Take, eat: this is my body.
And he took the cup, and when he had given thanks, he gave it to them: and they all drank of it.
And he said unto them, This is my blood of the new testament, which is shed for many.

No record exists of any great concern by the disciples whether Jesus’ statement was to be taken literally or symbolically as meaning that Jesus’ imminent death would be a sacrifice on behalf of all humankind. Paul made it an issue because of his desire that Christianity be acceptable to potential converts among Jews, Romans, Greeks, and pagans. He presented Jesus as the Paschal Lamb offered up for sacrifice at Passover, thus identifying the Last Supper with the animal sacrifice of other Mediterranean rituals. Paul is also responsible for making Jesus’ words into the rite known in Greek as the Eucharist (literally, “thanksgiving”). In the original Eucharist, members of the Christian community gave thanks as they ate bread from the same loaf and drank wine from the same cup, thus commemorating the sacrificial death of Jesus as he had asked them to do. This communion of the faithful was later incorporated into the Mass, during which those who had been baptized consumed the bread wafer or Host (its name taken, significantly, from the Latin hostia, “sacrificial victim”).

The doctrine of the Church concerning the Eucharist was established in A.D. 1215, when Pope Innocent III summoned a council at which it was decreed as an article of faith that the bread and wine in the sacrament are truly the body and blood of Jesus, changed through transubstantiation. Eating the Host would thereafter no longer be a symbolic act. By this decree, Christianity made its most sacred ritual an act equivalent to the god-eating of certain pagan rites.

God-eating is rare in religious systems, but anthropophagy (better known as cannibalism) has been reported by people from Western societies in virtually all parts of the world. Accusing native peoples of such reprehensible acts gave the colonial powers a justification for conquest: It was necessary to end the barbarous practices of the heathens. After the Spanish conquistadors mispronounced the name of the Carib people in the West Indies as “Canibal,” the word found its way into many European languages to designate those who practiced anthropophagy. Most native peoples were not cannibals. Certainly the hunter-gatherers were not; concerning them, the Europeans either concocted the notion that they were or else critically accepted the dubious testimony of their neighbors. The Walmiri of central Australia, for example, referred to their enemies the Lungen as eaters of human flesh; so did the Comanche Indians of the American Southwest in regard to the Tonkawas, and still other tribes declared that the Comanche themselves were not averse to the practice. The colonial powers also passed over the fact that cannibalism had once been rife in Europe. In France and Germany during the ninth and tenth centuries, for example, bands of professional killers roamed the countryside, attacked travelers, butchered the carcasses, and sold the meat in markets as “two-legged mutton.” Cannibalism still persisted after the Middle Ages in central Europe and may account for the werewolf legends there.

No wonder, then, that any attempt to learn more about cannibalism meets with a confusion of rumor, legend, and self-serving reports. It is true that the eating of human flesh has been documented from all over the world — sometimes as a unique event in the face of starvation (such as the cannibalism practiced by the Donner Pass survivors in California in 1847, or, more recently,
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the Uruguayan rugby team whose plane was wrecked in the Andes in 1972). Anthropophagy apparently was a practice of Homo erectus, whose fossilized bones dating from some half a million years ago have been recovered from caves near Peking. The bones had been fractured as though to obtain the marrow, and skulls were also found that seem to have been opened so that the brains could be eaten. Bones fractured in the same way appeared in the archeological record of many early humans, among them some of the ancestors of the American Indians.

The subject of anthropophagy is further complicated by the existence of several different kinds of cannibalism. Two of these are based on a social distinction: that is, whether the eater belongs to the same social group as the eaten (in which case it is known as endocannibalism) or is either unrelated or an enemy (exocannibalism). Endocannibalism is rare; its most notable known occurrence is among some South American Indians and some tribes of interior New Guinea. Other distinctions are made according to purpose: between gastronomic cannibalism, as a source of food, and ritual cannibalism, for supernatural ends. The cannibalism of highland New Guineans is primarily gastronomic; a more common intention, though, is to acquire the spiritual qualities or vitality of other individuals by eating them. This was the intent of the pre-Dynastic Egyptians, of the Scythians living around the Black Sea, and of the Chinese during the Ch’in, Han, and T’ang dynasties. The Iroquois Indians vied with one another for the privilege of eating the heart of a particularly brave enemy so as to acquire his courage. In some instances the purpose is both gastronomic and ritual. The Panoans of western South America regarded eating the flesh of relatives as a duty, in order to banish the spirit of the deceased, preventing it from reoccupying the body. But some Panoans also roasted the dead body like a piece of game, drinking the blood like wine, and even hastening the deaths of the old and the sick so they could be eaten while some nutrition was left.

Endocannibalism and exocannibalism both flourished in the eastern highlands of New Guinea until about 1960, when efforts by the Australian government to end the practices finally succeeded. The reason these New Guineans ate human flesh was frankly gastronomic: They needed it to stay alive. Cannibalism was for them also a customary way of disposing of the dead; as one an-

thropologist put it, “Their bellies are their cemeteries.” Men, women, and children alike were eaten; whether the flesh came from an enemy or a relative made no difference. A few restrictions were placed on eating the corpses of certain kinds of relatives, but virtually every corpse served as food for someone. A woman did not eat her own children and a man did not eat his parents-in-law, and vice versa; a husband did not eat his deceased wife, although she would have no such qualms regarding him; a man would not eat his grandchildren, but he was entitled to the flesh of a deceased nephew or niece. When a child died, the mother usually sent word to her brother, who could come to her husband’s village and obtain meat from the body.

A person who had died and been given proper mourning by kin might then be butchered in much the same way as a pig, or else buried and left until the flesh decomposed. In either case, the corpse was ordinarily dismembered by kin, who first removed its hands and feet, then cut open the arms and legs to strip out the muscles. The torso would be opened to remove the viscera, and finally the head was cut off and the skull fractured to extract the brain. Little was wasted. The marrow, viscera, and brain were all cooked and consumed together with the flesh; the bones were often pulverized and eaten with green vegetables, or small pieces of flesh might be cooked in a stew with ginger and vegetables. Even though the people of the eastern highlands of New Guinea eat pork and other meat in a fresh state, they appear to have preferred human meat when it was decomposed. A corpse was usually left in a shallow grave until the process was well advanced. After it had been dug up, the maggots that had begun to feed on the flesh were collected and cooked separately as a delicacy.

The corpse of an enemy, on the other hand, presented an opportunity for the venting of anger and hostility. When warriors returned home with such a body, the villagers assaulted it and fought over the best portions of meat. Sexual abuse of these corpses was fairly common. A man not only got pleasure from copulating with the corpse of an enemy female, but he was also vicariously attacking the enemy once again. One man was seen to copulate with a young woman who had just been killed. His kinswoman impatiently began cutting out the corpse’s belly while he was so intent on copulation that he did not notice how close the knife
had come. Slicing into the belly and then hacking downward through the vagina, she cut off the tip of the man’s penis, removed it, nonchalantly popped it into her mouth and ate it, with scarcely a pause in the process of butchering.

Although New Guineans did not practice cannibalism for ritual purposes—that is, to absorb the strength or power of the deceased, or out of fear of the deceased’s spirit—they did nevertheless often believe human flesh to possess magical properties, the most important of which was that it promoted fertility, human as well as horticultural. To encourage the growth of gardens, pieces of human flesh were placed in nearby trees, and bones were buried in the ground. During the mortuary rites, the kin of the deceased took the body to a garden, where it was either buried temporarily or butchered. In either event, the deceased was said to have been “given to the ground,” thereby encouraging it to produce crops. Dying men and women were heard to tell the surviving kin to eat their flesh so that the gardens would grow.

Among the Fore tribes in one small part of the cannibal region in New Guinea, which consisted of about 160 villages with a total population of 35,000 people, a disease occurred that caused perplexity to medical researchers. First observed during the 1950s, when Australian administrators and police entered the area, the ailment was aptly known as kuru, which in the Fore language means “trembling.” A degenerative disease that affects motor coordination, it begins with tremors, jerkiness, and clumsiness. The afflicted person later loses the ability to walk, and eventually cannot maintain balance even while sitting. Death comes as a result of inability to eat, pneumonia, or simply rolling into the fire at night. About 1,400 deaths were recorded between 1957 and 1964.

Two unusual things about the disease eventually led to a hypothesis about its cause. It had been extremely rare in adult males; and after the Australians increased their police patrols in the area and cannibalism was gradually eliminated, the number of cases declined, and the disease even disappeared completely in children. These two things would be accounted for if the cause was a virus transmitted through human meat, which acted slowly over a period of years. The exemption of adult males from the disease would be explained by the fact that in this particular area males did not practice cannibalism, believing that it robbed them of vitality and made them vulnerable to enemy arrows. Children born after cannibalism had been prohibited would then be free of the disease, whereas adolescents and adult women would be expected to show continued symptoms because they had previously eaten the infected meat. After years of patient research, the cause was indeed identified as a virus with a long incubation period, spread through the eating of brain tissue.

Before attempting to explain the motivations of New Guineans for the practice of both exocannibalism and endocannibalism, it is profitable to look into cannibalism by the Aztec Indians of Mexico. Hernán Cortés and the soldiers who overran the Aztec state in 1521 were a ruthless lot, toughened in battle against the Moors and the Indians of the Caribbean islands. Nevertheless, even they had been appalled by the evidence of human sacrifice on a scale that dwarfed their own bloody imaginings. Bernal Díaz del Castillo, the chronicler of the expedition, wrote of one Aztec city: “. . . in the plaza there were piles of human skulls so regularly arranged that one could count them, and I estimated them at more than a hundred thousand. I repeat again that there were more than a hundred thousand of them.” The total number sacrificed annually may have been astronomical—as many as 250,000, according to one estimate—and that impression appears borne out by the 20,000 to 80,000 victims for just one event, the dedication of the pyramid at Tenochtitlán in 1487. No other society in history has approached these numbers. Why so many? The traditional explanation, that sacrifices were demanded by the bloody religion of the Aztec, fails to explain why such a religion should have evolved in the first place.

A more likely explanation can be found by asking what the Aztec did with all these carcasses after the hearts were plucked out and the corpses rolled down the steps of the pyramids. The answer given by Bernal Díaz is that they were eaten: “Moreover every day [in just one place] they sacrificed before our eyes three, four, or five Indians whose hearts were offered to those idols and whose blood was plastered on the walls. The feet, arms, and legs of their victims were cut off and eaten, just as we eat beef from the butcher’s in our country.” Confirmation comes from the Aztec nobles who dictated the ethnography of their people to Spanish priests after the conquest. They reported that the corpses were carried from the base of the pyramid to be butchered, and the skulls displayed on racks after the brains had been eaten. The
body itself was dismembered and divided up, with three of the four limbs becoming the property of the warrior who had brought in the victim. He proceeded to give a feast, serving up the limbs in a stew with tomatoes and peppers.

Why the Aztec should have turned to cannibalism on such a scale has recently been explained in ecological terms, some unique to that people. All the ancient civilizations were similar in that their increasing populations soon outstripped natural resources and upset the equilibrium of the environment. Sooner or later, declining supplies of wild game and plants made domestication essential. In the Old World, wheat, barley, rice, and millet were all domesticated; in the New World, the plants were maize, beans, squash, peppers, and tomatoes, among others. But Middle America was unique in that it lacked the animal species — cattle, sheep, goats, and swine — that had proved so valuable in the Old World. Those species potentially capable of being domesticated had died out in the New World, as a result of environmental changes and probably also of overhunting, many thousands of years before the Aztec rose to power. (In the South American Andes, the guinea pig, the llama, and the alpaca were eventually domesticated, but these did not range as far north as Middle America.) The only animals that the people of the region had been able to domesticate were the dog and the turkey. But the dog, as a carnivore, competed with humans for meat and the turkey competed with humans for grain. Moreover, no animal provided any of the milk products that were so important to the Old World civilizations.

The Aztec population had been increasing rapidly right up to the time of the conquest by Cortés, even as its supply of animal protein from wild sources was diminishing, and almost no protein was available from domesticated species. The Aztec responded by intensifying agricultural production in a variety of ingenious ways, among them the chinampas or “floating gardens.” These were narrow strips of land surrounded by marshy canals; they produced several crops a year, and the plots were kept fertile by scooping up the rich mud from the bottom of the canals before sowing. The Aztec also waged unrelenting warfare against other peoples in Middle America, forcing them to pay tribute every year in food as well as in sacrificial victims. Even so, five famines had occurred in the two decades before the Spaniards arrived.

The hypothesis that cannibalism was the reason behind the Aztec sacrifice has come under attack by some who say the chronicles and the ethnographies dictated by the Aztec nobles are not reliable. In light of their basic reliability about other aspects of Aztec culture, however, the charge hardly stands up. Nor does the further objection that examples of cannibalism known from elsewhere in the world have been for ritual purposes. Anthropologists familiar with New Guinea cannibals point out that the supply of animal protein there is similarly limited, since the forests offer little wild game and pigs are too scarce to provide much of the needed protein; and they conclude that the New Guineans waged unremitting war with one another because of their need to obtain human flesh. In fact, some cannibalistic groups there have been known to refer to weaker neighbors as their personal stockyards for providing meat.

A careful analysis of the size and body weight of cannibals in New Guinea shows that a typical group (somewhat less than one hundred people) might receive almost thirty-five percent of its protein requirements by eating the flesh of one man a week. Any such analysis can be only tentative because of the possibility that New Guineans have different nutritional requirements than North Americans and Europeans, as was discussed on page 32. Even if the members of such a group obtained no more than fifteen men per year, they would be receiving about ten percent of their protein needs from cannibalism. Virtually all of the groups in interior New Guinea suffer from a deficiency of animal protein. Some are fortunate enough to obtain as much as a quarter of their protein from pigs; for many other groups, this source provides less than seven percent. The rest of the animal protein was obtained by hunting, fishing, collecting reptiles and insects — and by cannibalism. Anthropophagy was thus, for many groups in New Guinea, the largest single source of animal protein — one that has tipped the balance toward survival in the protein-poor interior. Because anthropophagy had been eradicated in recent decades by the Australian government, meat from animals must now be imported to make up for the deficiency.

Can all this be applied to Aztec cannibalism? Possibly — although whereas the New Guineans ate every part, including the internal organs and bones, of the victim, the Aztec are thought...
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to have eaten only the limbs and brains. Some critics of the hypothesis regarding the Aztec have stated that anthropophagy on a large scale need not have existed because the Aztec had alternative sources of protein: fish and frogs, many kinds of waterfowl, armadillos, gophers, snakes, lizards, and insects — all of which, though, are small, often difficult to catch, and not sufficiently numerous to feed a huge population. The approximately one million people who lived in and around the Aztec capital could not possibly have received an adequate supply of protein from hunting, any more than the present-day populace of New York City could be supplied with meat from the Catskill Forest Preserve or that of London from Sherwood Forest. One recent estimate of the amount of protein contributed to the Aztec diet from wild sources comes to, on the average, about one slice of deer meat, two small fish, three-quarters of a duck, and a sackful of insects and worms in a year. The Aztec might, of course, have obtained their essential amino acids by eating maize and beans together. To obtain sufficient protein in this way, however, the two vegetables would not only have to be eaten at the same time, and in the correct proportions, but also in very large quantities.

The Aztec might possibly have gotten protein from sources that are no longer used. They were, for example, observed by the Spaniards to eat vast amounts of a green mud that was taken from the lakes, and sold in markets all over Mexico. The Spaniards identified this as a mineral. Having noted the strange custom the Aztec had in eating it, they then forgot about it, and it more or less disappeared as a food source after most of the lakes that once surrounded what is now Mexico City had been drained. The mud has recently been identified as consisting of a blue-green alga, Spirulina, which is extraordinarily nutritious. It is nearly seventy percent protein, and contains all the essential amino acids, along with seven major vitamins. This Spirulina offered a potential supply of the protein required by the Aztec.

If that had been insufficient, they might have obtained large supplies of protein from the amaranth, a plant domesticated in Mexico about four thousand years ago. Lists kept by the Aztec show that the quantities of amaranth paid to them as tribute nearly equaled those of maize and beans. Amaranth was clearly a staple of the Aztec diet before the arrival of the Spaniards — and rightly so, because it scores higher than other cereal grains in protein, fat, phosphorus, riboflavin, and ascorbic acid, being somewhat lower only in thiamine and niacin. The reason for the virtual disappearance of this major food crop from Mexico after the Spanish conquest is said to be that it was used in pagan ceremonies, being ground into a paste, mixed with blood from sacrificial victims, and then formed into idols. The Spaniards, regarding the practice as a travesty on the Christian communion, banned both the idols and the growing of amaranth. Cultivation of the plant lingered on, but it was eventually replaced by European grains, particularly wheat.

Were the Aztec, then, so needy of protein that they had to practice large-scale sacrifice as an excuse for cannibalism? Or did the sacrifices occur simply because of “a maniacal obsession with blood and torture,” as Lévi-Strauss has asserted? Or is there still another explanation? The actual quantities of human meat resulting from sacrifice — if equally apportioned to every one of the millions of Aztec citizens — could not have amounted to much for each and could not alone explain the way in which sacrifice and the cult of the dead so completely permeated Aztec society. The customs of a culture, though, do not depend on averages. Human meat was not equally distributed, but was apparently given as a reward to the nobility, and also to the warriors who made up about a fourth of the population. Bravery in combat was the only way an Aztec could obtain high office, which was not hereditary but was based on achievement. A warrior was also accorded other privileges, such as being allowed to wear cotton garments, to have concubines — and to eat human flesh. Warriors and their families thereby received animal protein, fatty acids, vitamins, and minerals, and gained an advantage in better health over those who were not so privileged. As food shortages grew more acute, the incentive presumably became all the stronger.

Once the whole gory system got going — priests calling for victims and ambitious commoners clamoring for war in the hope of being rewarded, obliging the priests to call for still more victims to propitiate the gods of war — it would have been impossible to stop. What might have begun as a simple ceremony to obtain human flesh in ways sanctified by the gods would have become more and more complex, so that by the time of Cortés it had grown into an exceedingly powerful cult that dominated the Aztec state. Though much about it may never be known with
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certainty, two facts at least are clear: To propitiate their gods, the Aztec engaged in human sacrifice on a scale unknown in any other society; and, following the sacrifice, at least some of the flesh was eaten.

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As the only major human behavior in which everyone engages several times a day, every day, eating can become a way by which some people define themselves. Among these are the faddists who use eating to achieve non-nutritional ends, or who follow certain diets with such exaggerated zeal as to take on many of the aspects of a religion. Insofar as certain "natural" and "organic" diets encourage the consumption of fresh vegetables and fruits, whole grains, nuts, and dairy products, excluding or sharply decreasing consumption of refined sugar and salt, they are nutritionally beneficial. They can become maladaptive, though, when such things as yogurt, wheat germ, honey, ginseng root, or massive supplements of certain vitamins become the equivalent of sacred substances, health-food stores become tabernacles, and an organic farm becomes the next thing to Lourdes or Mecca.

Food fads are as old as Hippocrates, who believed that a certain kind of diet would lead to health and happiness, and they became established for the same reason: Food acquires emotional overtones beyond mere nutrition. The incentive for following a fad diet often is more psychological than nutritional. Those troubled by a complex world filled with uncertainties may try to impose some order by going back to "natural" (that is, simpler) foods. A faddist will insist on "natural" vitamins, even though a vitamin has the same chemical formula and acts upon the body in the same way whether it comes from a natural source or has been synthesized in a laboratory. They will pay a high premium for "organic" honey — even though such a thing can hardly exist, for the simple reason that bees foraging on flowers do not distinguish between those that have and have not been treated with chemical fertilizers or sprayed with pesticides.

Possibly the oldest of food fads is vegetarianism. Although the pejorative term "food faddists" does not properly include those vegetarians who are members of Asiatic religious groups, for whom vegetarianism is an ancient tradition with a storehouse of nutritional information, it does apply to many of the modern followers of a movement that began in England early in the nineteenth century. It influenced, among others, George Bernard Shaw and also Percy Bysshe Shelley, who in 1813 published a treatise arguing that the human body was not suited to the consumption of animal foods. The biological aspects of vegetarianism have already been discussed on pages 35-37, but any discussion of eating must not neglect the cultural aspects of the movement.

Vegetarians range from those who eat fish, eggs, and milk products (but not meat from mammals and birds) to those who eat only raw fruits and nuts. Very few vegetarians are motivated primarily by an objection to cruelty to animals or to depriving any creature of life. More often, vegetarians are motivated by the belief that people will lead a more contented and harmonious life if they can somehow eliminate their animal-like behavior — in short, an adherence to the Doctrine of Signatures already discussed on page 89. Gandhi, for example, experimented with many different diets before he eliminated all meat and milk products as a way to calm his spirit and to allay what he looked upon as animal passions. Claims have also been made that vegetarianism discourages crime, develops the intellect, and simplifies human character — none of which has been proved. Modern vegetarianism is only one of several such fad diets. Others developed in recent decades include the Zen macrobiotic, low-carbohydrate, high-protein, and megavitamin diets, and those promulgated by Adelle Davis, Gaylord Hauser, Carlton Fredericks, Robert Atkins, Nathan Pritikin, and Herman Tarnower (the "Scarsdale doctor"). The specific recommendations of each differ so greatly that sometimes they are directly opposed, but they do have in common a claim that the control over food intake is the key to happiness and well-being. For the organic-food movement, this control begins with the selection of seeds and continues through gardening, harvesting, food preparation, mastication, behavior during meals, and finally proper bowel movements for the elimination of wastes.

The faddists eventually establish a religious fellowship whose orthodoxy in matters of eating sets it apart from the population at large. Followers of health-food teachings usually regard as suspect the wide range of nutritional and health information that is available to everyone else from scientists and physicians, government agencies, and established publishers of books and newspa-
pers. As they develop their own network of communications, the faddists gradually extend their beliefs about food to other avenues of life, until in time they arrive at a full-blown ontology or world view, encompassing religion, government, economics, environment, and sex and the family. The nutritional value of food, once the central issue, becomes almost secondary — a ritual obligation dutifully carried on day after day. The faddists believe they have liberated themselves from the metaphorical associations that food has for everyone else, yet they have their own metaphors for eating behavior that differ little in essence from those of other groups and societies around the world.