



# ON HUMAN NATURE

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cultures can be rationally designed. We can teach and reward and coerce. But in so doing we must also consider the price of each culture, measured in the time and energy required for training and enforcement and in the less tangible currency of human happiness that must be spent to circumvent our innate predispositions.



## Chapter 7. Altruism

"The blood of martyrs is the seed of the church." With that chilling dictum the third-century theologian Tertullian confessed the fundamental flaw of human altruism, an intimation that the purpose of sacrifice is to raise one human group over another. Generosity without hope of reciprocation is the rarest and most cherished of human behaviors, subtle and difficult to define, distributed in a highly selective pattern, surrounded by ritual and circumstance, and honored by medallions and emotional orations. We sanctify true altruism in order to reward it and thus to make it less than true, and by that means to promote its recurrence in others. Human altruism, in short, is riddled to its foundations with the expected mammalian ambivalence.

As mammals would be and ants would not, we are fascinated by the extreme forms of self-sacrifice. In the First and Second World Wars, Korea, and Viet-

nam, a large percentage of Congressional Medals of Honor were awarded to men who threw themselves on top of grenades to shield comrades, aided the rescue of others from battle sites at the cost of certain death to themselves, or made other extraordinary decisions that led to the same fatal end. Such altruistic suicide is the ultimate act of courage and emphatically deserves the country's highest honor. But it is still a great puzzle. What could possibly go on in the minds of these men in the moment of desperation? "Personal vanity and pride are always important factors in situations of this kind," James Jones wrote in *WWII*,

and the sheer excitement of battle can often lead a man to death willingly, where without it he might have balked. But in the absolute, ultimate end, when your final extinction is right there only a few yards farther on staring back at you, there may be a sort of penultimate national, and social, and even racial, masochism—a sort of hotly joyous, almost-sexual enjoyment and acceptance—which keeps you going the last few steps. The ultimate luxury of just *not giving a damn* any more.

The annihilating mixture of reason and passion, which has been described often in first-hand accounts of the battlefield, is only the extreme phenomenon that lies beyond the innumerable smaller impulses of courage and generosity that bind societies together. One is tempted to leave the matter there, to accept the purest elements of altruism as simply the better side of human nature. Perhaps, to put the best possible construction on the matter, conscious altruism is a transcendental quality that distinguishes human beings from animals. But scientists are not accustomed to declaring any phenomenon off limits, and it is precisely through the

deeper analysis of altruism that sociobiology seems best prepared at this time to make a novel contribution.

I doubt if any higher animal, such as an eagle or a lion, has ever deserved a Congressional Medal of Honor by the ennobling criteria used in our society. Yet minor altruism does occur frequently, in forms instantly understandable in human terms, and is bestowed not just on offspring but on other members of the species as well. Certain small birds, robins, thrushes and titmice, for example, warn others of the approach of a hawk. They crouch low and emit a distinctive thin, reedy whistle. Although the warning call has acoustic properties that make its source difficult to locate in space, to whistle at all seems at the very least unselfish; the caller would be wiser not to betray its presence but rather to remain silent.

Other than man, chimpanzees may be the most altruistic of all mammals. In addition to sharing meat after their cooperative hunts, they also practice adoption. Jane Goodall has observed three cases at the Gombe Stream National Park in Tanzania, all involving orphaned infants taken over by adult brothers and sisters. It is of considerable interest, for more theoretical reasons to be discussed shortly, that the altruistic behavior was displayed by the closest possible relatives rather than by experienced females with children of their own, females who might have supplied the orphans with milk and more adequate social protection.

In spite of a fair abundance of such examples among vertebrates, it is only in the lower animals, and in the social insects particularly, that we encourage altruistic suicide comparable to man's. Many members of ant, bee, and wasp colonies are ready to defend their nests with insane charges against intruders. This is the reason that people move with circumspection around honeybee hives and yellow-jacket burrows, but can afford

to relax near the nests of solitary species such as sweat bees and mud daubers.

The social stingless bees of the tropics swarm over the heads of human beings who venture too close and lock their jaws so tightly onto tufts of hair that their bodies are pulled loose from their heads when they are combed out. Some species pour a burning glandular secretion onto the skin during these sacrificial attacks. In Brazil, they are called *cagafogos* ("fire defecators"). The great entomologist William Morton Wheeler described an encounter with the "terrible bees," during which they removed patches of skin from his face, as the worst experience of his life.

Honeybee workers have stings lined with reversed barbs like those on fishhooks. When a bee attacks an intruder at the hive, the sting catches in the skin; as the bee moves away, the sting remains embedded, pulling out the entire venom gland and much of the viscera with it. The bee soon dies, but its attack has been more effective than if it withdrew the sting intact. The reason is that the venom gland continues to leak poison into the wound, while a bananalike odor emanating from the base of the sting incites other members of the hive to launch kamikaze attacks of their own at the same spot. From the point of view of the colony as a whole, the suicide of an individual accomplishes more than it loses. The total worker force consists of twenty thousand to eighty thousand members, all sisters born from eggs laid by the mother queen. Each bee has a natural-life span of only about fifty days, after which it dies of old age. So to give a life is only a little thing, with no genes being spilled.

My favorite example among the social insects is provided by an African termite with the orotund technical name *Globitermes sulfureus*. Members of this species' soldier caste are quite literally walking bombs. Huge paired glands extend from their heads back

through most of their bodies. When they attack ants and other enemies, they eject a yellow glandular secretion through their mouths; it congeals in the air and often fatally entangles both the soldiers and their antagonists. The spray appears to be powered by contractions of the muscles in the abdominal wall. Sometimes the contractions become so violent that the abdomen and gland explode, spraying the defensive fluid in all directions.

Sharing the capacity for extreme sacrifice does not mean that the human mind and the "mind" of an insect (if such exists) work alike. But it does mean that the impulse need not be ruled divine or otherwise transcendental, and we are justified in seeking a more conventional biological explanation. A basic problem immediately arises in connection with such an explanation: fallen heroes do not have children. If self-sacrifice results in fewer descendants, the genes that allow heroes to be created can be expected to disappear gradually from the population. A narrow interpretation of Darwinian natural selection would predict this outcome: because people governed by selfish genes must prevail over those with altruistic genes, there should also be a tendency over many generations for selfish genes to increase in prevalence and for a population to become ever less capable of responding altruistically.

How then does altruism persist? In the case of social insects, there is no doubt at all. Natural selection has been broadened to include kin selection. The self-sacrificing termite soldier protects the rest of its colony, including the queen and king, its parents. As a result, the soldier's more fertile brothers and sisters flourish, and through them the altruistic genes are multiplied by a greater production of nephews and nieces.

It is natural, then, to ask whether through kin selection the capacity for altruism has also evolved in human

beings. In other words, do the emotions we feel, which in exceptional individuals may climax in total self-sacrifice, stem ultimately from hereditary units that were implanted by the favoring of relatives during a period of hundreds or thousands of generations? This explanation gains some strength from the circumstance that during most of mankind's history the predominant social unit was the immediate family and a tight network of other close relatives. Such exceptional cohesion, combined with detailed kin classifications made possible by high intelligence, might explain why kin selection has been more forceful in human beings than in monkeys and other mammals.

To anticipate a common objection raised by many social scientists and others, let me grant at once that the form and intensity of altruistic acts are to a large extent culturally determined. Human social evolution is obviously more cultural than genetic. The point is that the underlying emotion, powerfully manifested in virtually all human societies, is what is considered to evolve through genes. The sociobiological hypothesis does not therefore account for differences among societies, but it can explain why human beings differ from other mammals and why, in one narrow aspect, they more closely resemble social insects.

The evolutionary theory of human altruism is greatly complicated by the ultimately self-serving quality of most forms of that altruism. No sustained form of human altruism is explicitly and totally self-annihilating. Lives of the most towering heroism are paid out in the expectation of great reward, not the least of which is a belief in personal immortality. When poets speak of happy acquiescence in death they do not mean death at all but apotheosis, or nirvana; they revert to what Yeats called the artifice of eternity. Near the end of *Pilgrim's Progress* we learn of the approaching death of Valiant-for-Truth:

Then said he, "I am going to my fathers, and though with great difficulty I am got hither, yet now I do not repent me of all the trouble I have been at to arrive where I am. My sword, I give to him that shall succeed me in my pilgrimage, and my courage and skill, to him that can get it. My marks and my scars I carry with me, to be a witness for me that I have fought his battles who now will be my rewarder."

Valiant-for-Truth then utters his last words, *Grave where is thy victory?*, and departs as his friends hear trumpets sounded for him on the other side.

Compassion is selective and often ultimately self-serving. Hinduism permits lavish preoccupation with the self and close relatives but does not encourage compassion for unrelated individuals or, least of all, outcastes. A central goal of Nibbanic Buddhism is preserving the individual through altruism. The devotee earns points toward a better personal life by performing generous acts and offsets bad acts with meritorious ones. While embracing the concept of universal compassion, both Buddhist and Christian countries have found it expedient to wage aggressive wars, many of which they justify in the name of religion.

Compassion is flexible and eminently adaptable to political reality; that is to say it conforms to the best interests of self, family, and allies of the moment. The Palestinian refugees have received the sympathy of the world and have been the beneficiaries of rage among the Arab nations. But little is said about the Arabs killed by King Hussein or those who live in Arab countries with fewer civil rights and under far worse material conditions than the displaced people of the West Bank. When Bangladesh began its move toward independence in 1971, the President of Pak-

istan unleashed the Punjabi army in a campaign of terror that ultimately cost the lives of a million Bengalis and drove 9.8 million others into exile. In this war more Moslem people were killed or driven from their homes than make up the entire populations of Syria and Jordan. Yet not a single Arab state, conservative or radical, supported the Bangladesh struggle for independence. Most denounced the Bengalis while proclaiming Islamic solidarity with West Pakistan.

To understand this strange selectivity and resolve the puzzle of human altruism we must distinguish two basic forms of cooperative behavior. The altruistic impulse can be irrational and unilaterally directed at others; the bestower expresses no desire for equal return and performs no unconscious actions leading to the same end. I have called this form of behavior "hard-core" altruism, a set of responses relatively unaffected by social reward or punishment beyond childhood. Where such behavior exists, it is likely to have evolved through kin selection or natural selection operating on entire, competing family or tribal units. We would expect hard-core altruism to serve the altruist's closest relatives and to decline steeply in frequency and intensity as relationship becomes more distant. "Soft-core" altruism, in contrast, is ultimately selfish. The "altruist" expects reciprocation from society for himself or his closest relatives. His good behavior is calculating, often in a wholly conscious way, and his maneuvers are orchestrated by the excruciatingly intricate sanctions and demands of society. The capacity for soft-core altruism can be expected to have evolved primarily by selection of individuals and to be deeply influenced by the vagaries of cultural evolution. Its psychological vehicles are lying, pretense, and deceit, including self-deceit, because the actor is most convincing who believes that his performance is real.

A key question of social theory, then, must be the relative amounts of hard-core as opposed to soft-core

altruism. In honeybees and termites, the issue has already been settled: kin selection is paramount, and altruism is virtually all hard-core. There are no hypocrites among the social insects. This tendency also prevails among the higher animals. It is true that a small amount of reciprocation is practiced by monkeys and apes. When male anubis baboons struggle for dominance, they sometimes solicit one another's aid. A male stands next to an enemy and a friend and swivels his gaze back and forth between the two while continuously threatening the enemy. Baboons allied in this manner are able to exclude solitary males during competition for estrous females. Despite the obvious advantages of such arrangements, however, coalitions are the rare exception in baboons and other intelligent animals.

But in human beings soft-core altruism has been carried to elaborate extremes. Reciprocation among distantly related or unrelated individuals is the key to human society. The perfection of the social contract has broken the ancient vertebrate constraints imposed by rigid kin selection. Through the convention of reciprocation, combined with a flexible, endlessly productive language and a genius for verbal classification, human beings fashion long-remembered agreements upon which cultures and civilization can be built.

Yet the question remains: Is there a foundation of hard-core altruism beneath all of this contractual superstructure? The conception is reminiscent of David Hume's striking conjecture that reason is the slave of the passions. So we ask, to what biological end are the contracts made, and just how stubborn is nepotism?

The distinction is important because pure, hard-core altruism based on kin selection is the enemy of civilization. If human beings are to a large extent guided by programmed learning rules and canalized emotional development to favor their own relatives and tribe,

only a limited amount of global harmony is possible. International cooperation will approach an upper limit, from which it will be knocked down by the perturbations of war and economic struggle, canceling each upward surge based on pure reason. The imperatives of blood and territory will be the passions to which reason is slave. One can imagine genius continuing to serve biological ends even after it has disclosed and fully explained the evolutionary roots of unreason.

My own estimate of the relative proportions of hard-core and soft-core altruism in human behavior is optimistic. Human beings appear to be sufficiently selfish and calculating to be capable of indefinitely greater harmony and social homeostasis. This statement is not self-contradictory. True selfishness, if obedient to the other constraints of mammalian biology, is the key to a more nearly perfect social contract.

My optimism is based on evidence concerning the nature of tribalism and ethnicity. If altruism were rigidly unilateral, kin and ethnic ties would be maintained with commensurate tenacity. The lines of allegiance, being difficult or impossible to break, would become progressively tangled until cultural change was halted in their snarl. Under such circumstances the preservation of social units of intermediate size, the extended family and the tribe, would be paramount. We should see it working at the conspicuous expense of individual welfare on the one side and of national interest on the other.

In order to understand this idea more clearly, return with me for a moment to the basic theory of evolution. Imagine a spectrum of self-serving behavior. At one extreme only the individual is meant to benefit, then the nuclear family, next the extended family (including cousins, grandparents, and others who might play a role in kin selection), then the band, the tribe, chiefdoms, and finally, at the other extreme, the highest

sociopolitical units. Which units along this spectrum are most favored by the innate predispositions of human social behavior? To reach an answer we can look at natural selection from another perspective: those units subjected to the most intense natural selection, those that reproduce and die most frequently and in concert with the demands of the environment, will be the ones protected by the innate behavior of individual organisms belonging to them. In sharks natural selection occurs overwhelmingly at the individual level; all behavior is self-centered and exquisitely appropriate to the welfare of one shark and its immediate offspring. In the Portuguese man-of-war and other siphonophore jellyfish that consist of great masses of highly coordinated individuals, the unit of selection is almost exclusively the colony. The individual organism, a zooid reduced and compacted into the gelatinous mass, counts for very little. Some members of the colony lack stomachs, others lack nervous systems, most never reproduce, and almost all can be shed and regenerated. Honeybees, termites, and other social insects are only slightly less colony-centered.

Human beings obviously occupy a position on the spectrum somewhere between the two extremes, but exactly where? The evidence suggests to me that human beings are well over toward the individual end of the spectrum. We are not in the position of sharks, or selfish monkeys and apes, but we are closer to them than we are to honeybees in this single parameter. Individual behavior, including seemingly altruistic acts bestowed on tribe and nation, are directed, sometimes very circuitously, toward the Darwinian advantage of the solitary human being and his closest relatives. The most elaborate forms of social organization, despite their outward appearance, serve ultimately as the vehicle of individual welfare. Human altruism appears to be substantially hard-core when directed at

closest relatives, although still to a much lesser degree than in the case of the social insects and the colonial invertebrates. The remainder of our altruism is essentially soft. The predicted result is a melange of ambivalence, deceit, and guilt that continuously troubles the individual mind.

The same intuitive conclusion has been drawn independently by the biologist Robert L. Trivers and in less technical terms by the social psychologist Donald T. Campbell, who has been responsible for a renaissance of interest in the scientific study of human altruism and moral behavior. And in reviewing a large body of additional information from sociology, Milton M. Gordon has generalized that "man defending the honor or welfare of his ethnic group is man defending himself."

The primacy of egocentrism over race has been most clearly revealed by the behavior of ethnic groups placed under varying conditions of stress. For example, Sephardic Jews from Jamaica who emigrate to England or America may, according to personal circumstances, remain fully Jewish by joining the Jews of the host society, or may abandon their ethnic ties promptly, marry gentiles, and blend into the host culture. Puerto Ricans who migrate back and forth between San Juan and New York are even more versatile. A black Puerto Rican behaves as a member of the black minority in Puerto Rico and as a member of the Puerto Rican minority in New York. If given the opportunity to use affirmative action in New York he may emphasize his blackness. But in personal relationships with whites he is likely to minimize the color of his skin by references to his Spanish language and Latin culture. And like Sephardic Jews, many of the better educated Puerto Ricans sever their ethnic ties and quickly penetrate the mainland culture.

Orlando Patterson of Harvard University has shown how such behavior in the melting pot, when properly

analyzed, can lead to general insights concerning human nature itself. The Caribbean Chinese are an example of an ethnic group whose history resembles a controlled experiment. By examining their experience closely we may distinguish some of the key cultural variables affecting ethnic allegiance. When the Chinese immigrants arrived in Jamaica in the late nineteenth century they were presented with the opportunity to occupy and dominate the retail system. An economic vacuum existed: the black peasantry was still tied to a rural existence centered on the old slave plantations, while the white Jews and gentiles constituted an upper class who regarded retailing as beneath them. The hybrid "coloreds" might have filled the niche but did not, because they were anxious to imitate the whites into whose socioeconomic class they hoped to move. The Chinese were a tiny minority of less than one percent, yet they were able to take over retail trade in Jamaica and to improve their lot enormously. They did it by simultaneously specializing in trade and consolidating their ranks through ethnic allegiance and restrictive marriage customs. Racial consciousness and deliberate cultural exclusiveness were put to the service of individual welfare.

In the 1950s the social environment changed drastically, and with it the Chinese ethos. When Jamaica became independent, the new ruling elite were a racial mixture firmly committed to a national, synthetic Creole culture. It now was in the best interests of the Chinese enclave to join the elite socially, and they did so with alacrity. Within fifteen years they ceased to be a distinct cultural group. They altered their mode of business from mostly wholesaling to the construction and management of supermarkets and shopping plazas. They adopted the bourgeois life style and Creole culture and shifted emphasis from the traditional extended family to the nuclear family. Through it all they main-



tained racial consciousness, not as a blind genetic imperative but as an economic strategy. The most successful families had always been the most endogenous ones; women were the means by which wealth was exchanged, consolidated, and kept within small family groups. Because the custom did not interfere with assimilation into the rest of Creole culture, the Jamaican Chinese kept it.

In Guyana, the small country on the northern coast of South America formerly known as British Guiana, the Chinese immigrants faced a very different kind of challenge, although their background was the same as that of their Jamaican counterparts. They had been brought to the colony from the same parts of China as the Jamaican Chinese and to a large extent by the same agent. But in the towns of old British Guiana they found the retail trade already filled by another ethnic group, the Portuguese, who had arrived during the 1840s and 1850s. The white ruling class favored the Portuguese as the group racially and culturally closer to themselves. Some Chinese did enter the retail trade, but they were never overwhelmingly successful. Others were forced to enter other occupations, including governmental positions. None of these alternatives conferred the same advantage on ethnic awareness; it was not possible, as in the retail trade, to maximize earnings through ethnic exclusiveness. And so the Chinese of British Guiana eagerly joined the emerging Creole culture. By 1915 one of their keenest observers, Cecil Clementi, could say, "British Guiana possesses a Chinese society of which China knows nothing, and to which China is almost unknown." But their success was more than compensatory: although the Chinese make up only 0.6 percent of the total population, they are now powerful elements of the middle class, and from their ranks came the first president of the republic, Arthur Chung.

From his own Caribbean research, and from comparable studies by other sociologists, Patterson has drawn three conclusions about allegiance and altruism: (1) When historical circumstances bring the interests of race, class, and ethnic membership into conflict, the individual maneuvers to achieve the least amount of conflict. (2) As a rule the individual maneuvers so as to optimize his own interests over all others. (3) Although racial and ethnic interests may prevail temporarily, socioeconomic classes are paramount in the long run.

The strength and scope of an individual's ethnic identity are determined by the general interests of his socioeconomic class, and they serve the interests of, first, himself, then his class, and finally his ethnic group. There is a convergent principle in political science known as Director's Law, which states that income in a society is distributed to the benefit of the class that controls the government. In the United States this is of course the middle class. And it can be further noted that all kinds of institutions, from corporations to churches, evolve in a way that promotes the best interests of those who control them. Human altruism, to come back to the biological frame of reference, is soft. To search for hard elements, one must probe very close to the individual, and no further away than his children and a few other closer kin.

Yet it is a remarkable fact that all human altruism is shaped by powerful emotional controls of the kind intuitively expected to occur in its hardest forms. Moral aggression is most intensely expressed in the enforcement of reciprocity. The cheat, the turncoat, the apostate, and the traitor are objects of universal hatred. Honor and loyalty are reinforced by the stiffest codes. It seems probable that learning rules, based on innate, primary reinforcement, lead human beings to acquire these values and not others with reference to

members of their own group. The rules are the symmetrical counterparts to the canalized development of territoriality and xenophobia, which are the equally emotional attitudes directed toward members of other groups.

I will go further to speculate that the deep structure of altruistic behavior, based on learning rules and emotional safeguards, is rigid and universal. It generates a set of predictable group responses of the kind that have been catalogued in more technical works such as those prepared by Bernard Berelson, Robert A. LeVine, Nathan Glazer, and other social scientists. One such generalization is the following: the poorer the ingroup, the more it uses group narcissism as a form of compensation. Another: the larger the group, the weaker the narcissistic gratification that individuals obtain by identifying with it, the less cohesive the group bonds, and the more likely individuals are to identify with smaller groups inside the group. And still another: if subgroups of some kind already exist, a region that appears homogeneous while still part of a larger country is not likely to remain so if it becomes independent. Most inhabitants of such regions respond to narrowing of political boundaries by narrowing the focus of their group identification.

In summary, soft-core altruism is characterized by strong emotion and protein allegiance. Human beings are consistent in their codes of honor but endlessly fickle with reference to whom the codes apply. The genius of human sociality is in fact the ease with which alliances are formed, broken, and reconstituted, always with strong emotional appeals to rules believed to be absolute. The important distinction is today, as it appears to have been since the Ice Age, between the ingroup and the outgroup, but the precise location of the dividing line is shifted back and forth with ease. Professional sports thrive on the durability of this basic phenomenon. For an hour or so the spectator can re-

solve his world into an elemental physical struggle between tribal surrogates. The athletes come from everywhere and are sold and traded on an almost yearly basis. The teams themselves are sold from city to city. But it does not matter; the fan identifies with an aggressive ingroup, admires teamwork, bravery, and sacrifice, and shares the exultation of victory.

Nations play by the same rules. During the past thirty years geopolitical alignments have changed from a confrontation between the Axis and the Allies to one between the Communists and the Free World, then to oppositions between largely economic blocks. The United Nations is both a forum for the most idealistic rhetoric of humankind and a kaleidoscope of quickly shifting alliances based on selfish interests.

The mind is simultaneously puzzled by the cross-cutting struggles of religion. Some Arab extremists think the struggle against Israel is a jihad for the sacred cause of Islam. Christian evangelists forge an alliance with God and his angels against the hosts of Satan to prepare the world for the Second Coming. It was instructive to see Eldridge Cleaver, the one-time revolutionary, and Charles Colson, the archetypal secret agent, lift themselves out of their old epistemic frameworks and move to the side of Christ on this more ancient battleground of religion. The substance matters little, the form is all.

It is exquisitely human to make spiritual commitments that are absolute to the very moment they are broken. People invest great energies in arranging their alliances while keeping other, equally cathectic options available. So long as the altruistic impulse is so powerful, it is fortunate that it is also mostly soft. If it were hard, history might be one great hymenopterous intrigue of nepotism and racism, and the future bleak beyond endurance. Human beings would be eager, literally and horribly, to sacrifice themselves for their blood kin. Instead, there is in us a flawed capacity for

a social contract, mammalian in its limitations, combined with a perpetually renewing, optimistic cynicism with which rational people can accomplish a great deal.

We return then to the property of hypertrophy, the cultural inflation of innate human properties. Malcolm Muggeridge once asked me, What about Mother Theresa? How can biology account for the living saints among us? Mother Theresa, a member of the Missionaries of Charity, cares for the desperately poor of Calcutta; she gathers the dying from the sidewalks, rescues abandoned babies from garbage dumps, attends the wounds and diseases of people no one else will touch. Despite international recognition and rich awards, Mother Theresa lives a life of total poverty and grinding hard work. In *Something Beautiful for God*, Muggeridge wrote of his feelings after observing her closely in Calcutta: "Each day Mother Theresa meets Jesus; first at the Mass, whence she derives sustenance and strength; then in each needling, suffering soul she sees and tends. They are one and the same Jesus; at the altar and in the streets. Neither exists without the other."

Can culture alter human behavior to approach altruistic perfection? Might it be possible to touch some magical talisman or design a Skinnerian technology that creates a race of saints? The answer is no. In sobering reflection, let us recall the words of Mark's Jesus: "Go forth to every part of the world, and proclaim the Good News to the whole creation. Those who believe it and receive baptism will find salvation; those who do not believe will be condemned." There lies the fountainhead of religious altruism. Virtually identical formulations, equally pure in tone and perfect with respect to ingroup altruism, have been urged by the seers of every major religion, not omitting Marxism-Leninism. All have contended for supremacy over others. Mother Theresa is an extraordinary person

but it should not be forgotten that she is secure in the service of Christ and the knowledge of her Church's immortality. Lenin, who preached a no less utopian, if rival, covenant, called Christianity unutterably vile and a contagion of the most abominable kind; that compliment has been returned many times by Christian theologians.

"If only it were all so simple!" Aleksandr Solzhenitsyn wrote in *The Gulag Archipelago*. "If only there were evil people somewhere insidiously committing evil deeds, and it were necessary only to separate them from the rest of us and destroy them. But the line dividing good and evil cuts through the heart of every human being. And who is willing to destroy a piece of his own heart?"

Sainthood is not so much the hypertrophy of human altruism as its ossification. It is cheerfully subordinate to the biological imperatives above which it is supposed to rise. The true humanization of altruism, in the sense of adding wisdom and insight to the social contract, can come only through a deeper scientific examination of morality. Lawrence Kohlberg, an educational psychologist, has traced what he believes to be six sequential stages of ethical reasoning through which each person progresses as part of his normal mental development. The child moves from an unquestioning dependence on external rules and controls to an increasingly sophisticated set of internalized standards, as follows: (1) simple obedience to rules and authority to avoid punishment, (2) conformity to group behavior to obtain rewards and exchange favors, (3) good-boy orientation, conformity to avoid dislike and rejection by others, (4) duty orientation, conformity to avoid censure by authority, disruption of order, and resulting guilt, (5) legalistic orientation, recognition of the value of contracts, some arbitrariness in rule formation to maintain the common good, (6) con-

science or principle orientation, primary allegiance to principles of choice, which can overrule law in cases where the law is judged to do more harm than good.

The stages were based on children's verbal responses, as elicited by questions about moral problems. Depending on intelligence and training, individuals can stop at any rung on the ladder. Most attain stages four or five. By stage four they are at approximately the level of morality reached by baboon and chimpanzee troops. At stage five, when the ethical reference becomes partly contractual and legalistic, they incorporate the morality on which I believe most of human social evolution has been based. To the extent that this interpretation is correct, the ontogeny of moral development is likely to have been genetically assimilated and is now part of the automatically guided process of mental development. Individuals are steered by learning rules and relatively inflexible emotional responses to progress through stage five. Some are diverted by extraordinary events at critical junctures. Sociopaths do exist. But the great majority of people reach stages four or five and are thus prepared to exist harmoniously—in Pleistocene hunter-gatherer camps.

Since we no longer live as small bands of hunter-gatherers, stage six is the most nearly nonbiological and hence susceptible to the greatest amount of hypertrophy. The individual selects principles against which the group and the law are judged. Precepts chosen by intuition based on emotion are primarily biological in origin and are likely to do no more than reinforce the primitive social arrangements. Such a morality is unconsciously shaped to give new rationalizations for the consecration of the group, the proselytizing role of altruism, and the defense of territory.

But to the extent that principles are chosen by knowledge and reason remote from biology, they can at least in theory be non-Darwinian. This leads us ineluctably back to the second great spiritual dilemma.

The philosophical question of interest that it generates is the following: Can the cultural evolution of higher ethical values gain a direction and momentum of its own and completely replace genetic evolution? I think not. The genes hold culture on a leash. The leash is very long, but inevitably values will be constrained in accordance with their effects on the human gene pool. The brain is a product of evolution. Human behavior—like the deepest capacities for emotional response which drive and guide it—is the circuitous technique by which human genetic material has been and will be kept intact. Morality has no other demonstrable ultimate function.