

The Dialectic of Gender and the Crisis of Humanity

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Survival*

1 The Dialectic of Gender

Our closest primate relatives of today, as we presume our common ancestors as well, are already to a limited extent social animals, deriving certain important advantages from living in bands of a certain size. The more meticulous studies of primate behavior conducted over the last couple of decades have shown what a large part learning plays for the chimpanzee or the gorilla, and how false it is to attempt to understand their behavior in terms of mere instinct or imprinting. Yet what decisively marks out the social life of chimpanzees (with whom we share 99% of our genes) as still an animal one, rather than even proto-human, is that the behaviors that are learned are themselves quite rigidly circumscribed by the ecological niche of the species and its corresponding patterns of social organization. You can bring up a baby chimpanzee in a human household, and it will learn the rudiments of human language if this is expressed in signs it can imitate. But this surprising adaptability of the chimpanzee as individual is not matched by any such adaptability on the part of chimpanzee society, which has continued essentially unchanged for ten million years, and can only either continue the same in the future, if we let it, or die out, if we destroy its habitat.

It is impossible for anyone sensitive to the gender system as we know it today to observe the behavior of chimpanzees without being struck by certain similarities — features which are in fact common also to many other social animals. There is a dominance hierarchy which ranks adult males by their success in competing for scarce resources. Even the most junior adult male is dominant over all females, with the one exception of his own mother. The care of infants is the exclusive province of females. When the band needs defense against predators, this is the special task of the males. Male sexuality is linked with aggression, sex being a behavior in which a male mounts a subordinate individual who may be female or another male; conversely, presentation for mounting signals acceptance of subordination.

These similarities with a very widespread form of human social organization go together with major distinctions. For example, no enduring pair-bonds

are formed between female and male chimpanzees, and each individual, once weaned, must basically forage for itself. But the similarities themselves can only be understood if set in the very different overall system of human society. What makes our society characteristically human, as opposed to any animal society, is that the capacity for learning, and for manipulation of the environment, is so greatly extended that a genuine sphere of culture comes into being. Human society learns collectively, not just individually. It evolves ever new patterns of social organization, ever new ways of providing for its subsistence, as well as systems of religion, art, etc. that answer the peculiar needs of the expanded cerebral cortex, and not just the needs of material metabolism. As one major aspect of this rise of culture, the biological differences between the sexes cease to determine an inevitable division of functions, apart from those immediately involved in the process of procreation. Beyond this, there is nothing a man can do that a woman cannot do also, and vice versa. Our biological evolution points us in this direction not just by our big brain, but also by a reduction in the sexual dimorphism of size and strength, and a relative convergence between female and male sexuality. The decline of the oestrus cycle and the development of the characteristic female (clitoral) orgasm gives heterosexuality a more egalitarian form, at least capable of being an equally pleasurable activity for both parties, and not just a seasonal one.

Yet while the biological division of sex narrowed, a new and specifically human division of gender came into being. For all the diversity shown by human societies, there are certain basic common features of gender differentiation that have proved very long-lived indeed. Although not rigidly determined by our biology, and in this sense a cultural construction, the phenomenon of gender has had this relative constancy to it as a function of the very limited control human beings had over their material environment. Only today is it at all feasible to arrange things differently.

The starting-point for explaining the gender division is the very protracted period of infantile dependence. Our characteristic adaptation of the big brain, with its greatly increased capacity for learning, means that it takes much longer for the human infant to reach maturity, while it is also expelled from the womb at a relatively early stage of maturation. A baby chimpanzee can hang onto its mother as soon as it is born; it is weaned by the age of twelve months, and can soon gather its own food. A human baby cannot stand on its feet for one year; and even if suckling continues 'til the age of three or four, it still has a long way to go before its contribution to the procuring of food matches its consumption.

A whole distinctive pattern of human existence grew up around this protracted dependence. 1) The greater burden of childcare makes it highly desirable that males should contribute to the subsistence of children and those caring for them. 2) Hunting animals, a high-protein food source that was indispensable to our early development, however barbaric it seems today, developed as a masculine specialization, while women still concentrated on gathering activities around the domestic base. 3) The sharing between the sexes of their respective produce was promoted by a pair-bond reinforced both by a more constant and convergent sexuality, and by the strong emotional memories of the mother-child

relationship. These three elements together made up the matrix of the family, which is still to be found, in one form or another, in all human societies to date, even if it does not always stand out in full relief as the “nuclear” unit.

The example of the family, and the basic gender differentiation it enshrines, shows the constraint that biology continues to exert on the sphere of culture. The human family is clearly not inscribed in our biology in the way that the pair-bonding of certain other mammals definitely is. Yet in the gathering/hunting stage that was the only human way of life over an evolutionary timescale — from the period of *Homo erectus*, three million years back, until just a few thousand years ago — no human society managed to organize things differently, and the advantages of the family enabled it to persist even when our species gained a new degree of freedom with agriculture and the beginnings of industry. The gender phenomenon, as already argued, must be seen as a transition between nature and culture. It is still a division along the line of biological sex, which remains a tremendously powerful constraint in structuring social relations. Once human society gains a greater degree of freedom, and can roll back its natural boundaries a bit more, it will no longer need to organize its relations in this way. In the gender division, human culture still mimics, as it were, the animal world around it, as yet unable to leave its inherited organizing principles behind and strike out on its own.

A further element that fits together with the family matrix as a characteristic feature of human social organization in the gathering/hunting stage is the system of kinship. The nuclear family form as we know it today is in fact also characteristic of the earliest known forms of human society, while the development of kinship systems is especially associated with the later stages of the gathering/hunting adaptation. But the formation of the heterosexual pair-bond is never left simply to the individuals involved. The sexual division of labor requires marriage to be institutionalized under the control of the enviroing society. Marriage does not have to be permanent, “til death do us part,” nor need it rule out a certain space for extra-marital sexuality (itself within regularized limits), but marriage is an essential component for the sexual division of labor, and given that this is the institutionalizing of heterosexuality, it also serves to hold in check potentially destructive rivalries for a sexual partner.

In the earliest gathering/hunting societies, bands are generally limited to a very few families, having only occasional contact with others who share their language. Exogamous marriage, however, is a means by which alliances can be formed between families and bands, leading in due course to a kinship system, a larger and more structured society capable of handling its environment more successfully. Kinship was for a long while the only principle that could weld human beings together into larger groups, and in many societies it has been carried to amazing lengths — the extreme case being the indigenous peoples of Australia. In a developed system of kinship, the individual family appears submerged. The husband may have no particular economic obligation to his wife and children, as opposed to the wider social unit, and in a matrilineal system his paternal role may be displaced in favor of his wife’s brother. But the family matrix is still very much present at the heart of the kinship system,

with marriage both regularizing the heterosexual pair-bond, and tying men to women in the sexual division of labor.

In the gathering/hunting stage of human society, therefore, which ceased to be the way of life of the majority of human beings only 2,000 years ago, we can already see certain basic elements of what we criticize today as the gender system. The primary division of labor, between childcare + gathering and hunting, forms female and male individuals into two significantly different types of person, with differing mentalities and subcultures. Heterosexuality is institutionalized, and this means a relationship not simply between persons of different biological sex, but between persons of different gender. Heterosexuality means the woman's attraction to a hunter, and the man's attraction to a "homemaker." It means something very different, in other words, for the woman and for the man. Yet even so, the more primitive gathering/hunting societies, of which some examples such as the !Kung bushpeople have survived into our own day, display less of a polarization in terms of the differential feminine and masculine personalities than do any of our modern complex societies. And in many of them women enjoy so much more favorable a position that some observers have even been led to describe them — however misguidedly — as matriarchal. Male domination, therefore, is not coterminous with the gathering/hunting form of society, but only becomes universal with the transition from the gathering/hunting way of life to the settled existence based on agriculture.

The key argument against the existence of a primitive matriarchy is that there are simply no examples of this to be found, even though the primitive societies that have survived into modern times number many hundred, and present a comprehensive spectrum from the earliest forms of gathering and hunting, little changed since the emergence of modern *Homo sapiens* 40,000 years ago, through to those peoples already in the process of developing a complex and stratified society. The New World, in particular, offers a virtually complete range of examples, which were able to develop or not to develop, as the case may be, in relative isolation from one another. The question of, "Who rules?" in the early gathering/hunting societies, men or women, is impossible to abstract from a context in which the respective spheres of female and male existence are particularly distinct. But at one extreme, there are many societies where male domination over women can be very definitely recognized, while the other extreme is not one of female domination, but at best of a relative equality between women and men in their separate spheres of competence.

Two factors can give the illusion that women rule over men. The first is quite simply the contrast with our own society. The same thing led certain observers of Soviet Russia in the 1920s to speak of a "new matriarchy," which seems quite ridiculous to us today, despite the undoubted advances Russian women made at this time. The second is the existence of matrilineal kinship systems and matrilineal residence. This is undoubtedly associated with a relatively favorable position for women. In gathering/hunting societies, it is almost always women who make the greater contribution to food supply, even if the men's more erratic contributions from hunting are a valuable source of protein. Contrary to what orthodox Marxism might assume, there is no case where women manage to

translate this into a dominant position in society. But where women's share in food provision is especially great, supplying more than the 2/3rds of calorie intake that is a rough average for these societies, then descent tends to be through the female line, though there is no indication whatsoever that this was a universal primordial form. It would seem, therefore, as if men's biological endowment of a larger average musculature, plus the specialization in aggressive activity that is less the result of this than of their freedom from suckling infants, gives a bias towards male domination even at the gathering/hunting stage, unless this is countered by women's preeminent role in the economy, which can then bring about a relative balance.

This balance, however, is only possible because one crucial human institution was not developed until the gathering/hunting adaptation was already in crisis and on the decline — warfare. The earliest gathering/hunting societies were quite innocent of warfare, and there were many isolated peoples who were spared this invention until the advent of European colonization. The use of stone tools and fire had given humankind, even before we had fully evolved our modern biological form, an unprecedented freedom from predators and command over our environment. Almost the whole of Earth's land surface was open to human habitation, while population expanded only slowly. (The late weaning practiced by gathering/hunting societies in the absence of animal milk and cereal leads to a spacing of several years between pregnancies, and on top of this infanticide is common, to restrict the band to the size that the area within its reach can support.) Until a relatively late point in their development, accordingly, most gathering/hunting societies have no occasion for conflict with their neighbors, and many are scarcely aware of the existence of other human populations than their own. If a conflict over resources does arise, it is far easier for the weaker side to move elsewhere than to defend "its" territory, and this is indeed what happens.

The rise of warfare dates from the time when available land was taken up, and became scarce in relation to the very considerable requirements of the gathering/hunting adaptation. There was no question as to who would specialize in this new task. As with hunting, only men were free for activities that took them away from the domestic base for protracted periods, and from a technical point of view, the skills of warfare and hunting were not unrelated. To many societies, moreover, peoples who did not speak their language seemed like a different species. But the social effects of warfare are very different from those of hunting. The hunter has the ability to kill another human being, and this may have been a factor in the bias towards male domination that seems to characterize even gathering/hunting society. But he is still restrained by the strong taboo against murder, which makes the killing of another person in these societies extremely rare. The avoidance of potentially murderous conflict between hunters, in fact, is always institutionalized in various ways.

The warrior, however, is the man who does kill other humans, and even if these are only the members of another society, they are still potential friends, lovers, marriage partners and in-laws. A society needing to engage in warfare — which, even if initially defensive, soon reaches a point where defense and

offense are inextricably linked — must produce large numbers of violent men, and this has three major effects on the social pattern. Firstly, it strengthens the tendency to male domination, while depriving women of any means to resist this. They are now dependent on men in a completely new way, for protection against the enemy; and warfare also leads to the capture of prisoners, including women taken as booty for their sexual services, thus degrading the position of women in general. The second effect of warfare is as a new way of uniting societies into larger groups, particularly as the same pressure on resources that leads to the spread of warfare also leads to a more sedentary way of life based on a broader spectrum of food sources, as the first step towards agriculture. Thirdly, the cultivation of masculine violence, and its rewards in the form of domination over other peoples and over women, is the necessary foundation for the development of hierarchical organization, initially with the separation of a warrior elite at the top, and captured slaves at the bottom.

As far as the gender system is concerned, it is the masculine development of warfare that gives this its developed form, which we are still burdened with today. The sexual division of labor is not only expanded with the addition of warfare onto hunting as a masculine specialization. It is now the unambiguous foundation for a relationship of domination and subordination. And this also means that the rivalry inherent in heterosexuality, which the institution of marriage serves to control, becomes more particularly a rivalry between (violent) men for women, with women now deprived of any independent subject role in the sexual relationship, and relegated to the position of sexual object.

I mentioned above how the contrast between the position of women today and that in the early gathering/hunting societies could create the illusion of a primitive matriarchy. In a somewhat similar way, another illusion current in certain sections of the women's movement arises from comparing the role of aggression in human society with that among primates. In this perspective, males are the "violent sex," and male domination is directly anchored in our biology, without any cultural mediation. The existence of many gathering/hunting societies where aggression is carefully restrained, and women enjoy a position of relative equality, shows the falsity of this theory. Yet just as the illusion of matriarchy arises from exaggerating certain very real differences, so there are also certain real similarities on which the illusion of the "violent sex" is based. Among primates, the biological dimorphism gives rise both to a dominance hierarchy among the males themselves, and to the subordination of females. In those human societies where violence is cultivated as a masculine specialization for the purpose of warfare, it has a similar effect, both in degrading women to a subordinate position, and in fostering the development of hierarchy among men themselves. Of course, just as masculine violence is the product of culture, and not of mere biology, so its effects on social organization are also culturally mediated. Warfare itself develops in a particular economic context, the competition between separate societies for resources that have become scarce. And the particular forms taken by male hierarchy and female subordination are similarly the product of economic factors as well. Yet while it is not human males who are the "violent sex," but at most a certain form of masculinity that makes

men the “violent gender,” the emphasis on the role of violence, and a violence of which men are the agents, is a very real element of truth.

2 Gender and Class

In the previous section, I showed how the differentiation of gender differed from the characteristic sexual differentiation of primate society, yet had certain common features that persisted through an evolutionary timescale. The matrix of relations embodied in the family comprises, firstly, a primary division of labor between women and men, in which women specialize in childcare and a gathering activity in the vicinity of the domestic base, while men specialize in hunting, which takes them further afield. Secondly, it involves a sharing of their respective produce. And thirdly, it comprises a heterosexual pair-bond, which is asymmetrical for the woman and the man in that each of them is respectively either “feminine” or “masculine,” and their partner the opposite category.

In its original form, the family matrix gives a system of gender relations that is characteristic of the gathering/hunting adaptation. In this first basic stage of human society, for all the great innovations that already mark our advance over the animal world — language, systematic preparation of tools, art and religion, etc. — we were still tied to a quasi-natural existence in the crucial respect that we simply appropriated our food where we found it, whether vegetable or animal, and thus had not yet genuinely embarked on the great trajectory of production that has led, through agriculture and industry, to the scientific technology of today, with at each stage a specific pattern of social organization to match.

The decisive subordination of women, together with the beginnings of social hierarchy, has its immediate cause in the expansion of the masculine sphere in the division of labor from hunting to warfare, and the systematic rearing of large numbers of violent men. Yet the rise of warfare corresponds to a particular stage in the evolution of human society as a whole, i.e. the expansion of the human population to the point where the original gathering/hunting adaptation comes up against its limits, and has to give way to something else. This “something else,” at the basic level of how human society supplies itself with the material necessities of life, is the settled existence of agriculture; even if this was not reached at one stroke, but developed via a transition phase of “broad spectrum” adaptation, such as was typified by the Natufian culture of the Near East, some 12,500 to 10,000 years ago, and survived through to modern times with the Northwest Coast Indians of the American Pacific.

If the gathering/hunting peoples, until the final phase of their existence, could avoid violent conflict by running away, agriculture ties a society down to the land, and makes escape of this kind impossible. It soon leads to a tremendous expansion of population, as ten and later a hundred families can live where one lived before, also ruling out any return to the earlier way of life by the extermination of wild animals and plants, redefined as pests and weeds. It also establishes a permanent competition between different societies for the scarce

resource of fertile land. In agricultural society, accordingly, warfare becomes endemic; there is a great reward to be gained from capturing the land of others, and a permanent need to defend one's own land against such attack.

The acquisition of fertile land by conquest, as the Israelites captured Canaan, is inscribed in the legends of all agricultural peoples. So, too, is the arduous character of agriculture as opposed to the earlier stage: the expulsion from the garden of Eden, with God forcing Adam to "gain your bread by the sweat of your brow" (*Genesis* 3:19).

It is the settled existence, too, that lays the basis for the rise of an exploiting class. It would be quite wrong to imagine that agriculture had this effect through the production of an unprecedented surplus on which the first class of mental workers could live. The gathering/hunting peoples, in this respect, had a far higher productivity per unit of labor, and have even been called the first affluent society, needing to work no more than a few hours a day to provide for their basic needs. Yet as long as land is abundant in relation to the demand on it, there is no way that a would-be privileged class can force the majority to produce a surplus for their consumption. Even a warrior elite cannot stop their people running away, so long as there is somewhere for them to go.

With the development of agriculture, however, there is no longer anywhere to run to. Even if agricultural peoples must work much harder simply to meet their own subsistence needs, they can now be enslaved by a political power that forces them to work still more hours of the day to produce a surplus for a privileged class. It is true that the settlement of especially fertile land, such as river valleys, or the lakeshores of the Valle de México, greatly increases the possible surplus and is generally associated with the first rise of "civilization," but this is still based on a labor productivity that is low compared with the early gathering/hunting societies. The decisive factor is that the direct producers now have no way of resisting exploitation, and also there are far more of them to exploit.

It is the development of agriculture, as seen by Marxism, that signals a decisive break with a merely natural existence. Men can be distinguished from animals by consciousness, by religion or anything else you like. They themselves begin to distinguish themselves from animals as soon as they begin to *produce* their means of subsistence. It is certainly beyond question that agriculture marks an entirely new stage in the human relationship with our natural environment, deliberately modifying this in an unprecedented fashion, and thus enabling a vast increase in population and the rise of complex and stratified societies. The agricultural adaptation, as already stated, also fits together with a built-in competition between societies for fertile land and an endemic state of war that simmers just beneath the surface even in times of so-called peace.

For this reason, it is legitimate to associate with agriculture, too, the development of the family matrix into the systematic subordination of women to men; for even if warfare predated the discovery of agriculture, it was a symptom of the crisis of the gathering/hunting adaptation that led to agriculture as a solution, arising out of the same scarcity of land that agriculture was to make

permanent. The family, in other words, is the level of the gender system that corresponds to the original gathering/hunting stage of human evolution, while male domination, both within the family and in society at large, corresponds to the stage of agriculture.

3 The Crisis of Humanity

In discussing the gender system in Section 1, I argued that the development of scientific technology has brought this oldest of all social divisions to a critical point. On the one hand, there is the possibility, for the first time in human history, of abolishing altogether the sexual division of labor, and ultimately making propagation of our species itself a branch of conscious production. On the other hand, if we allow the gender system to continue unchecked, then the masculine specialization in violence threatens to provoke a cataclysmic spiral of destruction.

Masculine violence may be the most basic precondition leading to war, but it is so only in the context of a complex pattern of social divisions, in particular the class system, the division of humanity into competing states, and imperialism. I shall come in the next section to analyze this interlocking pattern of contradictions, which our species has to find a way out of if we are to survive. First, however, it will be useful to examine the symptoms that this structure generates, of which the danger of nuclear war is only one.

War and Pollution

There have been many wars in the past, and above all the two world wars that are still within living memory. Each of these brought death and destruction on a completely unprecedented scale, with mass extermination being practiced with all the refinements of modern science. If the Nazi holocaust was unrivaled in its systematic annihilation of groups that did not fit in with its political ambitions, on the Allied side, too, the practice of strategic bombing was heedless of any distinction between soldier and civilian. The atom bombs dropped on Japan were simply a development of a policy of “psychological” warfare already practiced with conventional weapons against Hamburg and Dresden on a hardly less massive scale.

Yet it is recognized on all sides that the development of nuclear weapons has brought warfare to a qualitative turning-point. The power unleashed for destructive purposes, which in a single hydrogen bomb can be a thousand times greater than the bombs dropped on Hiroshima and Nagasaki, makes all-out war between the nuclear powers a completely irrational undertaking, the risks involved for the aggressor making nonsense of Clausewitz’s classical dictum that “war is the continuation of politics by other means.” Irrational, but unfortunately not impossible, for there is still a certain logic in the deployment of nuclear weapons to deter conventional attack, and the whole pyramid of weapons systems based on this has so far proved resistant to all attempts at negotiated disarmament.

In a conflict situation between the superpowers, there can be no guarantee that escalation will stop short of the nuclear threshold. The atomic stockpiles of the Soviet Union and the USA are a sword of Damocles poised over our heads, and the longer nuclear weapons are still around, the greater the chance that in some contingency or other, however unintentional, they will actually be used. The proliferation of nuclear weapons to the turbulent societies of the third world, which is increasingly moving from possibility to established fact, will multiply the chances of nuclear war many times over.

Any nuclear war, however “limited,” would be unprecedentedly devastating of human life and equipment. Yet however frightful it is to contemplate the destruction of ten, twenty or a hundred of the world’s great cities, including our own, this immediate loss would by no means bring “the end of civilization as we know it.” Gigantic as the work of reconstruction would be, and having for shortage of resources to take forms very different from the old ones, it is highly unlikely that any major elements of culture would be lost. Today, the “noosphere,” i.e. the web of information existing both in the minds of human beings, and in books, films, data banks, computers, etc. is so dense that the knowledge needed for reconstruction would survive almost any holocaust.

The worst effect of a nuclear war would be the uncontrolled pollution of the environment by radioactive isotopes, both directly from atomic bombs, and indirectly from the destruction of nuclear power stations (even if effected by conventional weapons). In this way, we would not simply be killing off millions of human beings of the present generation, but poisoning the air, land and water on which future generations are equally dependent, as well as causing harmful mutations in the gene pool.

The wholesale pollution that would result from a nuclear war, however, would be simply an acceleration of the degradation of the environment that is being wreaked every moment of the present peacetime economy in the name of production. In all the advanced industrial countries, and increasingly also in those developing countries that are striving to modernize as rapidly as possible, the productive process releases into the environment noxious atomic, biological and chemical substances, precisely corresponding to the three types of weapon that are deemed most repugnant, and which international negotiations strive to ban.

The rapid ecocide of nuclear war, and the more gradual ecocide through the present economic process, are thus two convergent results. Each of these threats has different roots in the present pattern of social organization, and appears as a distinct symptom of the present crisis. Yet in their ultimate effects, they are one and the same.

Genetic Engineering and Artificial Intelligence

This same contradiction between scientific technology and our present pattern of social organization also promises to generate equally dangerous symptoms in the future, as new productive forces come into play. Two great innovations, each already in preparation, seem set to dominate human existence in the 21st

century: genetic engineering and artificial intelligence. Both of these, in their very different ways, are going to transform our conception of what it is to be human. Indeed they are already doing so for those prepared to grapple in thought with their possible implications. Both appear to have uses that can tremendously enhance the life of our species. Yet what might be a force for good, if harnessed to the needs of a unified human society, can still be a tremendous force for harm, if used in the interest of one section of humanity against another.

Genetic engineering brings into the realm of conscious decision our biological material itself. The positive opportunities that it presents are tremendous, even within the present horizon of possibility. First, as a preliminary, the removal of gestation from the human body into the laboratory, which is the precondition for any eugenic policy not based on the crude oppression of women. Second, the filtering of the gene pool to prevent the birth of individuals with severe physical or mental handicap. Third, the gradual elimination of at least phenotype differences between female and male, even if the principle of sexual reproduction at the chromosome level still remains necessary for a while. And fourth, a positive program of improvement of our biological material, so that we shall at last begin to *produce* ourselves as human beings rather than continue conservatively to hang on to the half-evolved bodies we have now, still all too similar to our animal forebears, let alone place our trust in the blind, wasteful and slow process of random mutation.

Yet there is no guarantee that the opportunities opened up by genetic engineering will be used in this liberating way. The negative “brave new world” imagined by Aldous Huxley has become a universal point of reference in our debates. From the traditional Marxist standpoint, the danger is one of a particularly desperate ruling class making use of genetic engineering to give the division of labor that biological anchoring which its apologists have fantasized since the dawn of class society (e.g. Plato’s souls of iron, bronze and gold). In the perspective of contemporary feminism, the danger is also seen in terms of men responding to the feminist challenge by seeking to perpetuate their domination via a male parthenogenesis. It is easy to dismiss these nightmares out of hand because of their undoubtable paranoic aspects. To effect the first, a form of fascism far more rigorous than that of the Nazis would be needed, while the second implies an even more total and unlikely breakdown of human solidarity. Either variant of an embryonic super race would appear an abomination to those it was designed to oppress. If the test tube were indeed used to produce such monsters, then the great majority of us would surely join in seizing every chance that came our way to destroy them. Yet however extreme these scenarios, though well worth exploration in science-fiction form, there is no doubt that the distortion of medical technology by both the class and gender systems is with us even now. This can be seen in a particularly vicious form in South Africa, for example, where white expectant mothers have access to the most advanced techniques designed to ensure the optimal development of their fetus, including oxygen therapy to increase its brain activity in the womb, while in the same society black mothers suffer third-world conditions of deprivation, with a consequently high level of genetic disorders. In the United States, techniques

to choose a male or female infant are already being pioneered, and likely to be used to increase still further the proportion of boys.

The precise extent that this distortion may reach is hard to assess; it will obviously depend, among other things, on the pace of technological advance in relation to social change. But until the human species can control its technology as a single society free from structured conflicts of interest, there can be no guarantee that genetic engineering, any more than any other new technology, will be used for liberation, rather than to perpetuate enslavement. And in this case, as with the nuclear question, what is at stake is the destiny of our species itself.

The same applies, in a rather different way, to artificial intelligence. If genetic engineering transforms our definition as human beings by bringing the evolution of our biological material into the realm of conscious decision, artificial intelligence does so by forcing a rethinking of the relationship between mind and matter. Our Western civilization, in particular, has tended in recent centuries to define the specificity of the human species in terms of our unique intelligence. In doing so, we both expressed a correct realization of what it was that had constituted our peculiar adaptation, and a commitment to taking this key differentiation, the big brain, as a deliberate basis for future development. The definition of our species as “intelligent life” thus corresponds to the rise of modern science.

The thinking machines we have built so far, from Babbage’s first calculator in the 1860s through to the electronic computers of today, still have a considerable way to go before they match the human brain in sophistication. They are built, in fact, on quite different structural principles, though there is no reason why these could not eventually be made closer to those of human intelligence. What has become clear beyond doubt, however, in the last decade or so, is that it is perfectly possible, and may well be realized less than thirty years from now, to build computers, using new techniques of switching based on molecular processes, that can outstrip the human brain not just in speed, as is already the case, but in complexity as well. The intelligence on which we have prided ourselves so highly proves to be merely a mechanical function after all, not really that different from the use of the arms and legs, hands and fingers.

Thinking machines, it may be said, can ultimately do only what they are programmed to do. True, but the human brain can itself do no more. It is logically possible, and will undoubtedly become technologically so as well, to program computers to design future generations of computers, each of increasing capacity, and to harness this entire system to such a general goal as — for example — improving the human environment.

We can always pull the plug, or take a machine gun and blow the central computer system to bits. Of course. But who is this “we”? There may be certain machine-wreckers, luddites or vandals, but surely the great majority of human beings will become ever more dependent on computers as an essential part of their life-support system.

A human environment that includes superintelligent computers of this kind will be qualitatively different from anything we have known. It would be pathetic

to take pride merely in the fact that it was we who initiated this development, for the point will be reached where the processes at work are far more complex than any individual human being can follow. We shall only be able to understand what is going on in terms of what computers tell us. Is the answer then for human beings to retreat from the stage altogether, leaving the world to this silicon species? Would resistance merely be trying to put the clock of evolution back, a struggle like that of *Australopithecus* against *Homo sapiens*?

I believe, like the great majority of people, that there is a crucial difference between a living human being and the most superintelligent of computers. A living being *feels*, a machine has no equivalent to sentience whatsoever. Feeling is something we share with our animal relatives; it seems to depend on having a central nervous system, yet it is something qualitatively distinct, even ontologically distinct from information-processing. Besides thinking (i.e. processing information), we *feel* our thoughts. This is the specificity of consciousness, that it is a state of feeling, not just an arrangement of data. Living beings, i.e. certainly all mammals and birds, as well as reptiles, amphibians and fishes to a decreasing degree, possibly in a minimal sense even crustaceans and insects, have this “inside” to them, such that, even when everything about their physical being has been described, including the state of their nervous system and brain, there is something else that has not even been mentioned, i.e. what this particular state of being feels like. But that which is “only in the mind” is in fact the only thing that matters. Mere matter, on the other hand, no matter how complex its arrangement, does not at all mind what happens to it. A computer simply doesn’t care whether you rip its innards out, disconnect its fuel supply, or cannibalize it for spare parts.

Some people argue that machines, if complex enough, can and will be truly conscious, in the sense of feeling. After all, we human beings are only made up of macromolecules, why should the carbon base have this unique ontological property that silicon doesn’t? I wish I could find a convincing reason why this is not the case, why there is something about biological life and life alone that should give it this unique property. But I can’t, any more than any convincing reason can be given to the contrary. And not only does this question seem to be almost beyond rational debate; it is certainly beyond empirical experiment.

How would you set about discovering whether a computer could feel? Obviously, you have to speak to it. Assuming that it understands the English language, it is familiar with statements of feeling, from the simplest “I feel cold” through to the most complex statements of philosophical consciousness. If the computer can feel, then it will join in our discourse about feelings and express its own. If the computer cannot feel, though, then it will have no access whatsoever to this dimension of existence, and will interpret statements such as “I feel cold” as simply expressing a physical state. (Not meaning the same as “I am cold,” but something more like “My blood — or my electricity — isn’t circulating very well.”) It will thus use the language of feeling, but merely to refer to what in our case are the physical correlates of sentient states. And if you tried to have the present kind of philosophical discussion with the computer, about whether machines could feel or not, the computer could only interpret this as a

similar kind of discourse to that which human beings used to have about gods and demons, the soul and immortality, etc. in the prescientific age. It would naturally agree that it did feel, as from its standpoint there is indeed nothing to distinguish it from human beings, but its own understanding of sentience would be a purely metaphoric one, the same as our own use of the outmoded concepts of idealist ontology.

The amazing thing about this cyborg philosophy is that it doesn't sound completely unfamiliar. It is the way that many people who specialize in the physical sciences talk today, particularly those who have a lot to do with computers. It isn't as if they no longer feel pain when they cut themselves shaving or go to the dentist, or even that they deny the phenomenon of this internal dimension if you discuss it with them. But the existence of feeling, of sentience, simply does not fit into their vulgar-materialist philosophy, and so they suppress questions of this kind. Feeling may be something that you share with your wife and kids, but it's not part of the Real World, the world of science and gleaming machines.

It would be a regression to primitive thought-modes of magic to make computers responsible for this peculiar mentality on the part of those who work with them. The mentality comes first, i.e. a certain kind of scientist credits computers as being potentially "just like us" because science, as he knows it, is encased in a vulgar-materialist philosophy. But the denial of feeling, far more common as an implicit assumption among scientists and technologists than an explicit confession of faith, ultimately reflects the particular position of these workers in the division of labor. They are employed by governments or corporations whose object, in the majority of fields, is ultimately geared to manipulating ordinary people as passive objects. The extreme case is how this mentality actually affects many medical doctors, supposedly working in the most caring of professions, tending sick human beings. The patient is so frequently dehumanized and treated simply as an object, even though this invariably has a negative effect on her/his recovery. And for the great majority of medical researchers involved in vivisection, the feelings of the animals experimented on are as nonexistent as the feelings of their human objects were for the medical criminals of Auschwitz.

It is quite undeniable that women as well as men can be guilty of this attitude. In her very pertinent exposure of the ethics of the American medical profession, Mary Daly, for example, who ascribes the contradiction between women and men to a difference in chromosomes, has a very real difficulty in dealing with this fact. Ultimately, for her, such women are "fembots," mere tokens whom the male masters have manipulated into taking part in their world. I see any difference in this respect as deriving from the sexual division of labor, with regard to which scientific work falls in the "secondary" penumbra, structured to some extent by the gender system, but not in an absolute or rigid way. Yet the "scientific attitude" of dismissing feeling as irrelevant, epiphenomenal or even nonexistent certainly does tie in with the masculine gender role, in which boys are brought up to suppress their feelings, to regard the internal dimension as unimportant, the better to participate in the ultimate dehumanization involved in killing their fellow human beings.

“Capitulation to the computer,” then, as this tendency might possibly be called, follows not from the abstract characteristics of the human-computer interface as such, but rather from the hierarchical system of domination and oppression under which we live, with its interlinked dimensions of gender and class. Seen in the perspective of the masculine culture of violence, the computer is a human being freed from the inevitable imperfections of human existence, this irrational bit called feeling. Seen instead from the perspective of the maternal culture, the computer is merely a machine which may be highly useful, but which it would be simply ridiculous to confuse with a living being.

The field of artificial intelligence is an area where the scientific technology developed by class society is rapidly proving a productive force of incredible power. But this force can be used either to serve and promote human life, or to degrade it. Under the present social system, the basic relationship that human beings maintain towards their superintelligent but absolutely nonsentient machines is in danger of being distorted by the class/gender system of domination. Only if social contradictions are resolved, and the system of domination broken down, can we ensure that the prodigious transformations that artificial intelligence will bring about in the human world will be a force for good, not for ill.

The Persistence of Destitution

It is impossible to discuss the global crisis facing humanity without focusing on the atrocious scandal of the billion or more human beings who still suffer the full ravages of primary poverty and deprivation. Every day, young and old, women and men, die by the thousand from hunger, malnutrition and easily preventable diseases, while we make ourselves ill from overeating, throw away a quantity of food that would abolish hunger in the whole of the Indian subcontinent, and pour our tax revenues into a neverending arms race. If this monstrous situation is not the starting-point of the present argument, it is because it cannot unfortunately be the starting-point of political mobilization. For that we have still to depend on those perils that directly hang over the peoples of the advanced industrial countries, as discussed above.

Yet the destitution of whole nations in the South of the planet does exercise an increasing hold on the consciences of sensitive people in our part of the world. For if the phenomenon is in no way new, it is certainly far more visible to the rich countries today, thanks to mass communications. Even more, it is visible in a new way as a problem because the conditions exist for its solution.

For at least the last thirty years, hunger has been totally unnecessary, and a small proportion of the surplus produced in the rich countries could also provide at least basic hygiene, healthcare and education for people who lack all of these things. There is one level at which the poverty of the South is a directly material question of survival for us in the North. As polluting industrial techniques and nuclear weapons begin to proliferate in the developing countries, we shall indeed be forced to meet their demand for a new international economic order, if we want these countries to join with us in saving our common environment. Yet aid

that is grudging and purely self-interested will not be nearly enough to carry the poor countries with us on the journey to communism; there are some countries, indeed, so destitute that their leverage on us in this way is minimal. The choice facing the advanced countries of the North is ultimately between a new conception of our species as genuinely a single society, in which each inhabitant of Indonesia or Somalia has the same claim on the material wherewithal for a truly human life as the inhabitants of Sweden or Japan, or a situation in which the divergence between North and South, which has been escalating steadily through four hundred years of imperialism, will lead to a qualitative break between two virtually different species, as the societies of the North apply the fruits of 21st century technology to transforming the basic parameters of human existence.

This second path, the “lifeboat” solution, might seem the easier one, yet its cost would be a hardening of our hearts, a new degree of masculinization, that could not but recoil disastrously on our own way of life, in a permanent state of war against the barbarians outside our gates. The alternative we are posed is a long overdue blossoming of maternal empathy, as demonstrated by the Buddhist saint Kuan Yin, by Jesus of Nazareth, and in modern times by Mother Theresa and Albert Schweitzer. If the awareness of suffering humanity that is so far shown by a relative few in our rich societies can spread to take hold on a really massive scale, then this will also have radical effects, in this case positive ones, on our own way of life, and speed our own transition to communism.

The Extinction of Species

In this final symptom, the empathy for other living beings that is so important in resolving the problem of human destitution comes fully into its own. There is no way that the jeopardized species, even those closest to us such as the gorillas and whales, can help themselves. They are entirely dependent on us, the populations of the “have” countries, for their survival.

To some people it might still seem a sacrilege to recognize our animal cousins as having a claim to our empathy comparable to other human beings. And indeed, the needs of humans and animals are different, increasingly so, and these differences should not be forgotten. Yet what is at stake today is not the suffering of a certain number of individuals, but the survival of entire species. Here again, it is we who are being tested. Human life could certainly continue and go forward with the destruction of very many of the million or so species of animal with whom we share our planet. Yet if we demonstrate a contemptuous attitude towards the biosphere of which we are inescapably part, then this cannot but recoil also on the way we handle our own biological material. Having reached the point at which it is becoming possible for us to plot our own forward evolution, how can we decide which path to take unless we have a deep feeling for the path that has led to where we are today? Once again, the choice is between the application of the powers of science in the genuine interest of human progress, or an application distorted by a narrow and sectional definition of our interest.

In all these fields, nuclear weapons, genetic engineering and artificial intel-

ligence, the destitution of the South and the extinction of animal species, the direction of human evolution is at stake. Either the new productive forces will be used in a destructive fashion, for all the apparent privilege they bestow on a minority, or they will be used to usher in an age of unprecedented and scarcely imaginable improvement, the take-off into a truly human existence. One thing we cannot do is pretend that the old parameters of human life are constant and unchanging. Limitations that were previously seen as simply “natural” are now dissolving into thin air, disclosing whole new fields to be explored and paths to be chosen. There can be no putting the lid back on the Pandora’s box that science has opened, today less than at any time in the past. The powers that humanity has accumulated, for good and for ill, are so awesome that we might well wish them away. But the choice is unavoidable. And in this supreme crisis, the greatest determinant of a successful outcome is the realization of the stake involved.