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Discussions:

# I. The Loving Parent Meets the Selfish Gene

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In a recent *Inquiry* article Louis Pascal argues that the problem of massive starvation in the modern world is the result of a genetically-based human propensity to produce as many offspring as possible, regardless of ecological conditions. In this paper biological and anthropological objections to Pascal's thesis are discussed as well as the conclusions he draws from it. It is suggested that natural selection has produced humans who are flexible in their reproductive behavior in order to cope with rapidly changing environments. The implications of both arguments for the population movement and the attempt to eliminate starvation are discussed.

## 1. Introduction

The number of deaths in the world caused by starvation is truly, as Louis Pascal writes,[1] the worst human tragedy of modern times. However, when Pascal jumps on the sociobiological bandwagon currently rolling through the social sciences and attempts to identify a biological 'prime mover' as the source of this problem, he only compounds the tragedy. At a time when every country is affected by this problem in one way or another and desperately needs innovative approaches to cope with it, Pascal's conclusions lead only to the dismal and dangerous alternative of inaction: the genes will have their way.

In this paper we raise several objections to Pascal's conclusions and to the evidence he uses to support them. We have grouped these objections into two categories: biological and anthropological. Before detailing our major objections, however, we wish to mention briefly two points which, although of major significance for Pascal's article, we cannot adequately deal with here.

First, Pascal argues that people who produce children in situations of high infant mortality are not rational. Further, we assume he also sees individuals who refuse to accept his conclusion that life is evil and meaningless as irrational. Yet we would suggest that his work in the population movement is not the action of a rational person if he truly believes his conclusions. If humans have a genetically programmed drive to produce as many children as possible there is nothing the population movement can do to limit population growth short of mandatory

controls on reproduction. We believe that the attempt of the population movement to educate people on the problem of overpopulation is rational and that the successes of the movement, small though they be, indicate that Pascal's conclusions are invalid.

Second, Pascal writes that it is 'generally acknowledged' that the major factors in the tragedy of massive starvation are overpopulation and rapid population growth.[2] This ignores the analyses of many social scientists and Third World leaders who argue that the real problem of starvation is not overpopulation, but rather the maldistribution of the world's resources. Enough food to feed the world's poor can be produced, but not if the industrial countries continue to maintain or increase their high levels of consumption. Pascal's conclusion that the cause of massive starvation is the result of a biologically determined drive to produce children absolves the industrial countries and their citizens of any degree of blame for the tragedy and indirectly supports the current exploitative world order.[3]

We now turn to our more detailed objections to Pascal's argument.

## 2. Biological Objections

1. Pascal postulates a genetically controlled desire to produce as many children as possible even in the face of a high probability that many will die before maturity. He sees cultural beliefs such as religion, optimism, sexual mores, etc., as epiphenomena which lend support to this biological imperative, disguise its painful reality from participants, and, perhaps, rationalize away some of the pain created by infant deaths.[4] If Pascal is correct, we should expect to find (after factoring out such variables as differential nutrition) little variability in the natality rates of different societies. Contrary to this expectation, however, we actually find a great deal of variability in birth rates around the world. Nag, for example, demonstrated that not all pre-industrial societies have higher natality rates than industrial societies.[5] In addition, even within industrial societies there can be great variability between subpopulations. The well-nourished Hutterites of Western Canada have an extremely high natality rate of 10.7 births per female,[6] yet are surrounded by a population which, although as well nourished, exhibits much lower birth rates.

Further, the fact that industrial countries which have undergone the demographic transition (declining birth rates) exhibit lower natality rates than pre-industrial societies runs counter to the logic of Pascal's argument. Since individuals in the industrial societies know that infant and child mortality rates are low, they should be encouraged to produce as many children as is biologically possible if Pascal is correct. The declining birth rates in industrial societies argue against the existence of any genetic drive to produce as many offspring as possible; instead, they support the idea that cultural and economic factors are the major influence on people's reproductive behavior.

2. A second biological objection to Pascal's argument can be derived from his statement:

> No truly sensitive and rational human being could possibly fail to realize what he would be subjecting his children to, nor could he justify such a thing on any grounds. Thus, the most rational and the most sensitive individuals have from the dawn of human history assiduously been eliminating their genes from the race. Only those people who were so extraordinarily insensitive and irrational that they wanted to have children despite the fact that more than half of them would die, contributed their genes to the next generation.[7]

We will overlook the value judgments in this statement[8] and ask simply how the genes which force or allow individuals to choose to remain childless stay in the human gene pool. If these genes for rationality and sensitivity (in Pascal's terms) are eliminated in each generation because their bearers do not pass them on, how does it happen that in any generation there are individuals who choose not to have children? These non-reproductives must get their genetic material from their parents, who presumably had genes for desiring children,[9] so how did they turn out differently? There are three possible answers to this problem; (1) mutation, (2) balanced polymorphism, and (3) kin selection. However, we may eliminate mutation from our discussion immediately because the rates would have to be impossibly high.

The second possible explanation for the persistence of these sensitive genes involves the hypothesis that the gene system involved is a balanced polymorphism operating in a manner similar to the sickle-cell complex. To illustrate how this might work we may assume that the desire to maximize offspring is controlled by a single locus and that there are two alleles: insensitive (maximize offspring) and sensitive (produce no children). A person with two insensitive alleles would maximize offspring, and one with two sensitive alleles would produce no children, whereas a person with both types of alleles would (let us assume) desire children, but not as many as biologically possible. For a balanced polymorphism to exist, heterozygotes must produce more surviving offspring than either type of homozygote. However, this state of affairs would run counter to Pascal's conclusions, since it would mean that what has been selected for in human evolution is the production of a limited number of children, not a high production of offspring regardless of ecological situation.

A third alternative which would explain the persistence of genes for non-reproduction involves the process of kin selection described by W. D. Hamilton.[10] Kin-selection theory would suggest that non-reproductives achieve greater inclusive fitness by not producing children themselves and instead devoting time, energy, or material resources to the offspring of their close genetic relatives. E. O. Wilson writes:

> The celibate monk, the maiden aunt, or the homosexual need not suffer genetically. In certain societies, their behavior can redound to improved fitness of parents, siblings and other relatives to an extent that selects for the genes that predispose them to enter their way of life.[11]

Although the kin-selection theory of non-reproductive behavior has been supported by studies of some insect societies,[12] there is no evidence that celibates or

other childless individuals in human groups increase the reproductive fitness of their close relatives. Also, it is questionable that we would want to term these individuals rational or sensitive in Pascal's terms if kin selection is actually operating, for, although they have no children themselves, they allow (encourage?) their relatives to produce more offspring, thus creating even more suffering than if they had chosen to produce children themselves.

3. In the two previous objections we have assumed for the purpose of argument that genes either for the production of or non-reproduction of offspring actually exist. David Barash, a proponent of sociobiology, notes that this stance is still only an assumption: 'There is no evidence for specific genes influencing specific behaviors in humans beyond simple inherited metabolic and structural traits.'[13] Until such evidence is produced we believe Pascal's arguments cannot be supported.

4. Our final biological objection is that Pascal does not examine the possibility of group selection as a cause of population growth. Had he done so he might have arrived at a very different conclusion on the subject of the rationality and sensitivity of parents. Pascal argues that parents are insensitive because they choose to produce children only to benefit themselves, not the children they produce. If his interpretation was correct we would agree that the production of offspring in the face of a high infant mortality rate is an act of questionable morality. However, if group selection is an operative force in human evolution, the production of children is not a selfish act, but rather an action taken for the benefit of the entire group. In such a case the individual who loses young children but continues to produce more may well feel the pain of loss acutely but continues to risk future losses because his/her offspring contribute to the numerical strength of the group. If this happened in early human groups, what would have been selected for is not insensitive parents as postulated by Pascal, but rather parents who would be very sensitive to the possibility of child loss. These parents would attempt to keep as many children alive as possible and would devote as much care as possible to each one. Under group selection these individuals would be both sensitive (to possible loss of children) and rational (working for the benefit of the group). Selection for this type of individual would have been especially strong if, as some sociobiologists have argued,[14] warfare was a significant factor in human biological evolution.

The question of whether or not group selection operates for human groups is still a much debated point in the literature of sociobiology[15] and cultural anthropology. The presence of culture, long-term memory, and reciprocal altruism certainly provides the preconditions for such a selection process. Until decisive evidence is presented on this point, it is as logical to argue that parents are responding to a higher morality based on benefits to the social group as it is to accept Pascal's more dismal interpretation.

## 3. Anthropological Objections

Pascal's argument is supported by several assertions which cultural anthropology

has shown to be incorrect. In this section we examine several of these points.

1. Pascal suggests that humans have never had the chance to develop a sensitivity to the death of their children. He writes:

> Evolution will select for those who can be utterly insensitive to the welfare of their children before they are born, but who, strangely, become incredibly solicitous of their offsprings' wellbeing after they are born. Nevertheless, they will disregard both their existing children's welfare and that of their future offspring when the question involved is whether or not to have still more children. Evolution will mold insensitivity so that the choice will always be to have another child no matter what the consequences. Those whose genes, for whatever reason, impel them to produce the most descendants will leave the most similarly inclined offspring to the next generation.[16]

If Pascal were correct we should expect to find neither abortion nor infanticide in human societies. Also, parents would not observe any pregnancy taboos or rituals as they are 'utterly insensitive' to the welfare of their unborn children. Yet the ethnographic record provides many cases of such taboos and of the widespread existence of both abortion and infanticide.

The sensitivity of parents to their yet unborn children is attested to by the large number of ritual activities and taboos which often surround pregnancy. Women may be given special food, extra attention, or be relieved of certain duties. Husbands may be barred from certain types of activities (especially adultery) or observe rituals to protect the fetus. In most societies the manifest reason for these activities is to protect the fetus or to help it grow. In several societies the concern is so strong that the presumed father of the child may simulate the stages of his wife's pregnancy and observe all the taboos followed by her, a ritual known as the couvade. The widespread distribution of such rituals and taboos is evidenced by the fact that, of the twenty-one societies described by Service in *Profiles in Ethnology*,[17] rituals or taboos connected with pregnancy are mentioned for ten. Since Service was not particularly concerned with this topic, the actual number of societies with such traits is probably higher than that shown in his book.

The evidence for the use of abortion in human groups has been collected and analyzed by George Devereux, who concluded from a study of 350 pre-industrial societies that 'there is every indication that abortion is an absolutely universal phenomenon'.[18] We cannot say that those individuals who practiced abortion produced fewer offspring surviving to maturity than those who did not since, as Harris notes,[19] abortion is often used as a means of preventing the birth of a child at a time when an already existing child is too young to be weaned or cared for properly. Individuals who space their offspring carefully may thus produce more reproductively active offspring than people who do not use abortion as a birth spacing mechanism. In this case Pascal's assertion that evolution has selected for parents who disregard the welfare of existing children is simply wrong.

Much the same logic is relevant to the occurrence of infanticide. Although this practice is not as widespread as abortion, it is a common phenomenon in many non-industrial societies and in some technologically advanced groups.[20] According to Birdsell, from fifteen to fifty percent of the children born during the Pleis-

tocene were victims of infanticide.[21] The Pleistocene is, of course, the period in which Pascal argues that selection was most intense for individuals who produced children regardless of the consequences to existing offspring. The two most common explanations of infanticide run counter to the logic of Pascal's argument. We have already discussed the role of infanticide in the spacing of children and showed how this is motivated by concern for older children. A second function, killing female infants in order to produce more male warriors,[22] may be subsumed under the group-selection argument detailed in the previous section of this discussion.

To summarize this section, variability in pregnancy taboos and rituals, abortion, and infanticide around the world are strong evidence against Pascal's conclusion that humans have a genetic drive to bring as many new offspring into the world as possible without any concern for the welfare of existing children.

2. As noted above, Pascal sees a number of cultural traits as epiphenomena which have evolved along with the drive to maximize offspring. He asks:

> In a varied population, what sort of traits could a member of an intelligent, perceptive, own-child-loving species possess which would enable him deliberately to produce children despite the conditions of extreme hardship his own over-reproduction guarantees those children will have to live under?[23]

He answers his question with a list of five cultural traits: (1) an inordinate desire to have children; (2) a strong sexual drive; (3) a generalized, optimistic shortsightedness; (4) a belief in an afterlife; and (5) a belief in a purpose to life.

If it can be demonstrated that there is great cultural variability in the expression of these traits, Pascal's argument would be significantly weakened, for the universal drive of offspring maximization he postulates should create these traits in every society in the world. When we examine each of the traits we do find such variability.

Not all societies place a great stress on desire for children. One of the reasons for abortions cited by Devereux is dislike of the parental role; Devereux cites the people of Alor, Kai, Buin, and the Marquesans as examples of groups in which married couples sometimes resort to abortion rather than bear children.[24] He also notes that in some groups women frequently abort in order to protect their youthful beauty. Samoan women, for example, dislike bearing children because they insist that nursing destroys the beauty of their breasts. Certainly these women are not behaving as if under the control of a drive to produce children regardless of the consequences. Attitudes toward children may vary greatly between societies which are geographically quite close. Thus Mead describes the Arapesh of New Guinea as greatly desiring children, while she found the Mundugumor of the same island debated over the birth of a child and that both males and females were upset when a woman became pregnant.[25]

Variability in the strength and expression of the sexual drive is even greater than in the desire for children. A good example of this variability may be found in the February 1971 issue of the magazine *Psychology Today*, in which John Messenger describes the restrictive sexual atmosphere of a rural Irish community and Donald

Marshall writes on the extremely high level of intercourse on the Polynesian Island of Mangaia.[26] More recently Karl Heider has described the Grand Valley Dani of New Guinea as exhibiting an extremely low level of sexual interest and activity.[27] He says that their five-year post-partum sex taboo is uniformly observed and that the abstinence during this extended period does not cause great concern or stress. These examples illustrate that the expression of the sexual drive is more the product of cultural factors than of a desire to maximize offspring. In fact, a good argument can be made that the Irish situation is an example of culturally controlled sexual drive in the service of minimizing number of offspring in an ecological situation where overpopulation is a great problem.

There has not yet been enough research into the world views of various cultures to adequately define the variability of Pascal's third and fifth traits. However, some suggestive comments may be found in the ethnographic literature. Tschopik's description of the Aymara Indians of Bolivia and Peru certainly is not congruent with a generalized, optimistic shortsightedness:

> [A]mong the Aymara anxiety is so general and intense, so ever-present and all-pervading, that it has left its particular mark on virtually every individual and has colored the entire fabric of the culture. . . . Diffuse anxiety is revealed by their pessimistic outlook as well as by fits of depression and gloom for which they have a name. . . . On the cultural level the presence of anxiety is reflected in the elaborate pharmacopoeia, the vast number of omens, most of them boding ill, and the proliferation of divinatory techniques.[28]

Reo Fortune described the Dobu Islanders as continually fearful of sorcery, and other writers have labeled this group as paranoid.[29] George Foster's hypothesis that most peasants view the world in terms of the 'Image of the Limited Good' suggests that this large segment of humanity is not generally optimistic about their future.[30] Pascal asks us to recall Turnbull's description of the Ik, yet the fact that these people went from optimistic hunters to pessimistic horticulturalists in only a few years does not support the idea of a generalized optimism in the service of reproduction.

Pascal's final trait, a belief in a happy afterlife, also does not find much support in the ethnographic literature. Most non-literate cultures do have a belief in an afterlife, but in most cases the lot of the dead is not better than that of the living. In some societies we find that the dead are pitied because the afterlife does not contain items such as meat which, consequently, the living must supply by sacrifices. The Muslim or Christian paradise has few analogues in non-literate societies. Another problem with this trait is that the existence of a paradise in the afterlife is usually correlated with the existence of a less pleasant alternative, and it is difficult to see how the alternative might spur reproduction.

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3. The last anthropological objection to Pascal involves his statement: 'I suspect that this idea – that life is evil because it involves a preponderance of suffering over happiness to no worthwhile end – will currently seem rather farfetched to almost every reader'.[31] Perhaps this is true if his article is read only by Westerners, but no orthodox Hindu or Buddhist would have any problem accepting his idea since it is

one of the basic tenets of these major religions. And, contrary to Pascal's assertion that such ideas are self-extinguishing, no country with a Hindu or Buddhist majority seems to be in danger of disappearing due to a too low birth rate.

## 4. An Alternative View

It would, of course, be foolish to deny that biology has nothing to do with the problem of massive starvation in the world. Too many children are being born in the world today and overpopulation is the tragic problem pictured by Pascal and others. However, we do not believe this problem can be traced only to the desire of humans to produce numerous offspring. Evolutionary biology has shown that human beings have been selected to act flexibly in order to deal with changing environments. Human history has seen many instances in which groups have lowered or raised their birth rates in response to environmental and social factors. If we desire to understand why people continue to produce children in situations of extreme hardship we should look at the social and environmental factors which promote reproduction. Anthropologists and demographers have shown many times that people in labor-intensive economies with high mortality rates produce many children in order to assure an adequate labor force and to provide for themselves in old age. If we desire to change this pattern of behavior, it will be necessary to change the mortality rates and, at the same time, to change the economic and social structure which creates the pattern. There is every indication that this alternative will allow individuals to lower their birth rates. Blaming the entire problem on the genes leaves us no alternative but to adopt Hardin's 'lifeboat ethic'[32] and thus allow the tragedy to increase in proportion. In an era of atomic weapons and power politics this latter alternative cannot be taken, for it will lead inevitably to an ever greater tragedy which will affect all of humankind.



NOTES

1 Louis Pascal, 'Human Tragedy and Natural Selection', *Inquiry*, Vol. XXI (1978), pp. 443–60.

2 Ibid., p. 44ɔ.

3 On the role of biological determinism as legitimation for existing power relationships see: Allen *et al.*, 'Sociobiology – Another Biological Determinism', *Bioscience*, Vol. XXVI (1976), pp. 182–6; Joseph S. Alper, 'Ethical and Social Implications', in M. Gregory, A. Silvers and D. Sutch (Eds.), *Sociobiology and Human Nature*, Jossey-Bass, San Francisco 1978, pp. 195–212.

4 On the relationship between sociobiology and cultural systems see: Robert Boyd and Peter J. Richerson, 'A Simple Dual Inheritance Model of the Conflict between Social and Biological Evolution', *Zygon*, Vol. XI (1976), pp. 254–62; J. Patrick Gray, 'Sociobiology and Symbolic Anthropology: Conflict or Conformity?', *Proceedings of the Fall Sociological Research Symposium*, Vol. I (1977), pp. 54–63; Peter J. Richerson and Robert Boyd, 'A Dual Inheritance Model of the Human Evolutionary Process, I: Basic Postulates and a Simple Model', *Journal of Social and Biological Structures*, Vol. I (1978), pp. 127–54; Marshall Sahlins, *The Use and Abuse of Biology*, University of Michigan Press, Ann Arbor 1976; Linda D. Wolfe and J. Patrick Gray, 'Sociobiology,

Anthropology and Women', *Proceedings of the Sacramento Anthropological Society*, in press.

5 Moni Nag, *Factors Affecting Human Fertility in Non-Industrial Societies: A Cross-Cultural Study*, Yale University Press, New Haven 1962.

6 Cited in Marvin Harris, *Cannibals and Kings: The Origins of Culture*, Random House, New York 1977.

7 L. Pascal, op. cit., p. 447.

8 Another charge often leveled against sociobiology is that the theory can be used to support racism. Some people are certain to decide that the rapid population growth in the Third World is nothing more than the manifestation of the irrationality and insensitivity of Africans, Asians, and Latin Americans. These same people will certainly overlook the case of the Hutterites.

9 Pascal could argue that non-reproductives were the undesired children of parents who lacked genes for reproductive maximization but did enjoy sex. However, since the sex drive is in the service of offspring production according to Pascal, he would have to explain why the non-reproductives did not find sex tempting. An interesting argument may be drawn from this problem if Pascal is correct: since contraceptive devices have broken the inevitable link between sexual activity and reproduction, there should be fewer undesired offspring of sensitive people who indulge in sex and therefore the genes for sensitivity and rationality will be eliminated from the human gene pool even more rapidly than in the past.

10 W. D. Hamilton, 'The Genetical Evolution of Social Behavior', *Journal of Theoretical Biology*, Vol. VII (1964), pp. 1–52.

11 E. O. Wilson, *Sociobiology: The New Synthesis*, Harvard University Press, Cambridge, Mass. 1975, p. 343.

12 R. L. Trivers and H. Hare, 'Haplodiploidy and the Evolution of the Social Insects', *Science*, Vol. CXCI (1976), pp. 249–63.

13 David Barash, 'Evolution as a Paradigm for Behavior', in M. Gregory, A. Silvers and D. Sutch, op. cit., p. 28.

14 William H. Durham, 'Resource Competition and Human Aggression, Part I: A Review of Primitive Warfare', *Quarterly Review of Biology*, Vol. LI (1976), pp. 385–414; Roger Pitt, 'Warfare and Hominid Brain Evolution', *Journal of Theoretical Biology*, Vol. LXXII (1978), pp. 551–75; E. O. Wilson, *On Human Nature*, Harvard University Press, Cambridge, Mass. 1978.

15 On the concept of group selection see: Richard Alexander and Gerald Borgia, 'Group Selection, Altruism, and the Levels of Organization of Life', *Annual Review of Ecology and Systematics*, Vol. IX (1978), pp. 449–74; John Cassidy, 'Philosophical Aspects of the Group Selection Controversy', *Philosophy of Science*, Vol. VL (1978), pp. 575–94; Michael J. Wade, 'A Critical Review of the Models of Group Selection', *Quarterly Review of Biology*, Vol. LIII (1978), pp. 101–14.

16 L. Pascal, op. cit., p. 448. Note that the last sentence in this statement is technically incorrect: it is those individuals whose genes 'impel' them to produce the largest number of surviving and *reproductively active* offspring who leave the greatest number of genes in the gene pool in the long run. Under certain circumstances it may be better to produce and care for a limited number of children who will, in turn, contribute disproportionately to the third generation, than to produce a great many children, each of whom has little chance of reproductive success. Flexibility in the face of possible environmental change, not blind obedience to the reproductive 'drive', is selected for in humans.

17 Elman R. Service, *Profiles in Ethnology*, Harper & Row, New York 1963.

18 George Devereux, 'A Typological Study of Abortion in 350 Primitive, Ancient, and Preindustrial Societies', in H. Rosen (Ed.), *Abortion in America*, Beacon Press, Boston 1967, p. 98.

19 Marvin Harris, op. cit., p. 159.
20 For a summary of infanticide and its functions in human groups see: Mildred Dickeman, 'Demographic Consequences of Infanticide in Man', *Annual Review of Ecology and Systematics*, Vol. VI (1975), pp. 100–37. Evidence for a high rate of female infanticide in Great Britain between 1200 and 1500 may be found in Josiah Russel, *British Medieval Population*, University of New Mexico Press, Albuquerque 1948.
21 Joseph B. Birdsell, 'Some Predictions for the Pleistocene based on Equilibrium Systems among Recent Hunter-Gatherers', in R. Lee and I. Devore (Eds.), *Man the Hunter*, Aldine, Chicago 1968, pp. 229–40.
22 William Divale and Marvin Harris, 'Population, Warfare, and the Male Supremicist Complex', *American Anthropologist*, Vol. LXXVIII (1976), pp. 521–38.
23 L. Pascal, op. cit., p. 448.
24 George Devereux, *A Study of Abortion in Primitive Societies*, Julian Press, New York 1955, p. 18.
25 Margaret Mead, *Sex and Temperament in Three Primitive Societies*, New American Library, New York 1935.
26 Donald S. Marshall, 'Too Much in Mangaia', *Psychology Today*, February 1971, pp. 43–44, 70–75; John C. Messenger, 'The Lack of the Irish', *Psychology Today*, February 1971, pp. 41–42, 68.
27 Karl G. Heider, 'Dani Sexuality: A Low Energy System', *Man*, Vol. XI (n.s.) (1976), pp. 188–201.
28 Harry Tschopik, Jr., *The Aymara of Chucuito, Peru: I. Magic*, Anthropological Papers of the American Museum of Natural History, Vol. VIIIL (1951), pp. 182–3.
29 Reo Fortune, *Sorcerers of Dobu: The Social Anthropology of the Dobu Islanders of the Western Pacific*, Routledge & Sons, London 1932.
30 George M. Foster, 'Peasant Society and the Image of the Limited Good', *American Anthropologist*, Vol. LXVII (1965), pp. 293–315.
31 L. Pascal, op. cit., pp. 453–4.
32 Garrett Hardin, *The Limits of Altruism*, Indiana University Press, Bloomington 1977.



# II. Rejoinder to Gray and Wolfe

Louis Pascal

This rejoinder to J. Patrick Gray's and Linda Wolfe's 'The Loving Parent Meets the Selfish Gene' (*Inquiry*, this issue), which in turn was in response to the author's 'Human Tragedy and Natural Selection' (*Inquiry*, Vol. 21, No. 4), briefly addresses their major objections and suggests that in many instances they have misunderstood the point of that paper. They argue that many of the traits referred to are more cultural than genetic. That this is not the central issue is made clearer by stressing certain aspects of the view underlying the original article, chiefly concerning the extent of human irrationality and insensitivity.

J. Patrick Gray and Linda Wolfe have substantially misunderstood the ideas I was trying to convey. Since two thoughtful people have both misunderstood me, and in