

- 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. VIII (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

a similar fashion, a significant part of the blame must be laid to my evident failure to present my ideas clearly and unambiguously. This rejoinder, therefore, attempts two things – first, very briefly, to rebut the major points of Gray’s and Wolfe’s paper, and secondly, to clarify the vision of the world which lay behind my earlier paper and which once understood should make my points both less confusing and considerably more plausible.

1

A large part of Gray’s and Wolfe’s effort is geared to demonstrating that many of the traits in question are more cultural than genetic. By and large I agree with them, but this has little bearing on my paper. Cultural traits are passed from parent to offspring just as genetic traits are. Cultural traits differentially affect reproductive success just as genetic traits do. Those cultures, subcultures, or individual traits or ideas will come to predominate which are most successful at reproducing their numbers. Reproductive success is the only criterion natural selection is concerned with. Indeed, natural selection is no more than the name for the process that comes about as differing entities (traits, cultures, genes, etc.) differentially reproduce themselves. One cannot argue, ‘Our genes may give us trouble but our cultures will save us’. Both have been selected according to the same criterion and both will give us trouble. I apologize for not making this point clear in my original paper. Also, in several places, the word ‘genes’ might better have been replaced by a phrase such as ‘genes and/or beliefs’. I think this answers their Biological Objections (1) and (3).

As for the overpopulation/maldistribution controversy: I take a dim view of the lifestyles of the rich countries and am strongly in favor of a very radical redistribution of goods (more about this later). However: (1) Since the whole world is rapidly running out of many of its non-renewable resources, this can at best be a stopgap measure. (2) It is exceedingly foolish to expect one’s oppressors suddenly to become one’s saviors. Whether or not the rich countries *ought* to redistribute their goods, the fact remains *they won’t*. The poor countries will by and large have to solve their own problems even if, indeed especially if, it is the rich countries who are basically to blame.

To very briefly respond to their remaining points:

BIOLOGICAL OBJECTIONS

2. The degree of rationality and sensitivity is a product of ‘stabilizing’ selection. To a point such traits are favorably selected, but should they advance too far, parents will start considering the death of half their children to be too great a price to pay for reproduction and will therefore stop. The equilibrium point is one such that a few of the most intelligent and sensitive forgo reproduction, but the great majority which remains does not. Thus this trait will persist indefinitely in a minority.

4. They argue that reproduction in order to contribute to the strength of the group (for purposes of warfare, yet, including even the killing of female infants so

as to produce more male soldiers!) is a good thing, a 'higher morality'. But despite the numbers of biologists attempting to show how evolution might achieve altruism, evolution always selects for selfishness: individual selection selects for selfish individuals, kin selection selects for selfish families, and group selection selects for selfish groups. Gray's and Wolfe's 'altruism' is really ethnocentricity, which in my opinion is quite possibly even worse than individual selfishness, first because by being organized it possesses more destructive power than the petty selfishness of random individuals, and secondly because by appearing unselfish, it is subject to no moral scruples and therefore indulged in with all the more zeal (not to say righteousness). Ethnocentricity is not a higher morality but merely selfishness on a higher level.

ANTHROPOLOGICAL OBJECTIONS

1. (A) I certainly do not suggest that parents do not have a chance to develop a sensitivity to the death of their children. Instead I say the death of a child is the greatest of all pains except possibly for the death of a spouse.

(B) They evidently overlooked my Note 5, which in large measure answers their objections to the paragraph they quote. Nevertheless, I agree I cast the paragraph in terms somewhat too strong and absolute.

(C) They answer their own objections about abortion and infanticide – those who practiced it left more adult descendants than those who didn't. Despite my overstatement in the quoted paragraph, it was surely evident in many places that I was concerned only with the number of children surviving long enough to reproduce, which I took to be at least fifteen years.

(D) Their comments about pregnancy rituals completely miss the point. The word 'born' in my first quoted sentence apparently caused the confusion. Substitute 'exist'. Pregnancy rituals in fact support my thesis.

2. (A) The five specific traits I listed were sufficient, not necessary, conditions, and I said as much in the summing-up paragraph for that topic (p. 450). And even if a culture could be found which lacked all five traits, it is possible there are other such traits I missed. (They may have supplied one themselves: a very warlike society might raise children for cannon-fodder, especially if this trait were combined with a belief that those falling in battle enjoy a privileged position in the afterlife.)

(B) One's deceased children may not be particularly happy in the afterlife, but at least they are not dead. And I would expect a belief in hell generally to be combined with an optimistic shortsightedness and self-centeredness (trait three). Our children and loved ones would never go to hell; it is our enemies who go there.

3. I know little about Eastern religions but can think of several possibilities to account for Hinduism's and Buddhism's non-self-extinguishment.

(A) As I understand it, they believe that giving birth does not involve bringing a new life into existence at all. Rather, each birth is the rebirth of a soul who had died previously and who *must* be reborn again and again until he has eliminated his burden of Karma. By giving birth to him again, they are speeding him on his way. Life may be evil but giving birth would not be an evil act. Only in Western thought are giving birth and the creation of life so strongly linked.

(B) Perhaps they simply do not practice what they preach. Perhaps only the most devout actually adhere this strictly to their religion's injunctions. Or perhaps originally the religions contained injunctions against giving birth but over the centuries these strict ideas extinguished themselves and left only a watered-down version to survive.

(C) Their beliefs may be self-contradictory. My Note 12 discussed briefly the utility of a mind which can support self-contradictory beliefs.

2

To address now the second objective of this rejoinder: My earlier paper gave various theoretical reasons why one should expect any intelligent race evolving through natural selection to be, in certain crucial areas, especially those involving reproduction or anticipation of the future, irrational and insensitive. Gray's and Wolfe's criticisms arise, it seems to me, largely because they fail to agree that human beings, as examples of an intelligent race, properly manifest these characteristics. The second part of this rejoinder, therefore, attempts to make – as nearly as I am able – an airtight case for the irrationality and insensitivity of human beings. It is premature to discuss the various merits and shortcomings of my explanation for these traits when in fact the basic point of disagreement is over their existence.

Before I can accomplish this objective, I must first discuss in greater and more graphic detail the realities of overpopulation. I could not do better than to quote the transcript of a short speech by Walter Bradford Ellis, a too-little-known pioneer in the field of overpopulation, delivered before an audience of about 300 at Columbia University on October 20, 1970. I was among the audience and made a recording. (It is reprinted here with his permission.) Some of the numbers have changed in the intervening years, but his ideas have not aged. Even though the opening part of it is only peripherally relevant here, I think it is a most important speech and therefore shall quote it in its entirety. It was called 'Judgment Day' or 'The Handwriting on the Wall'.

Good evening. This is the first time I've spoken before a college audience, and therefore I would like to take advantage of your presence to ask you a few questions before I begin on my prepared speech. Principally I'm interested in asking these questions for my own enlightenment, but I hope many of you will find your answers interesting also. Basically I want to know how morally committed the students at a typical 'good' school are, and while I know an audience of several hundred from one school is neither large enough nor diverse enough to give an especially accurate picture, still the results should provide a rough indication of where the real truth lies. That's sort of an interesting juxtaposition of words. 'Truth lies' I mean.

Anyway, as I said, I'm interested in knowing how morally committed you are. The reasons for my curiosity are surely evident: in today's world of racial prejudice, Vietnam, and above all, the miseries of overpopulation, it will take an uncommonly dedicated and selfless generation to grapple with these issues

successfully. I must say at the outset, I am pessimistic. At any rate, primarily what I want to find out tonight is how important it is to you for you to act according to your own definition of right and wrong. In other words I'm not interested in knowing what sort of behavior you think is right or wrong but merely how committed you are to living up to whatever standards of right and wrong you possess.

I was trying to think a few minutes ago what questions I could ask you to find out this information, and it is very difficult to come up with anything satisfactory simply because individual standards of right and wrong vary so markedly. I had to pick a situation which seems perhaps a little silly because it is so improbable, but that is because I wanted as pure a case as possible – one which is in no way connected with any existing world situation – so that your prejudices and preconceived notions about a particular situation will play no part in your answers.

I needed to find a situation in which every one of you would agree as to the proper course of action and then ask: but which of you would do it even if it hurt you personally? Probably no situation exists which would elicit your total agreement, but the one which I have picked I think will come as close as possible. My hypothetical circumstances are concerned with a person who murders innocent people, and I suspect that nearly every one of you will agree that that is wrong. So please now imagine yourself to be in an ancient country which is ruled over by an evil king who has absolute power of life or death over all his subjects – including yourself. Now this king is very bored, and so for his amusement he picks ten of his subjects, men, women, and children, at random as well as an eleventh man who is separate from the rest. Now the king gives the eleventh man a choice: he will either hang the ten people picked at random and let the eleventh go free, or he will hang the eleventh man and let the other ten go free. And the eleventh man must decide which it is to be.

Now if death is bad, then on an average ten deaths must be ten times as bad as one. So hopefully nearly all of you will agree that the eleventh man should give up his life in order that the other ten might live. But that is not the question I am asking you. I'm asking whether you would in fact make that sacrifice if you were the eleventh man – if you really did have to decide whether you or they would die. And you knew the king meant business because he did this every year and sometimes killed the ten people and other times the eleventh depending wholly upon what the eleventh had decided.

Now I am about to ask you for a show of hands, but of course I realize that few of you know yourselves so well that you can be certain of the correctness of your answer – especially if your answer is yes. So I simply will ask you to hold up your hand and answer yes if you are any more than 50 percent certain that you would make that sacrifice. Understand?

All right, all yes answers, please raise your hands. Let me see, that must be about a third of you. That's more than I would have guessed.

Now let me ask only those who are reasonably certain – say 95 percent certain – that they would make the sacrifice to please raise their hands.

Yes. That's more like what I expected. That's at most a tenth of you. I have

a feeling that most of that tenth of you are kidding yourselves, but perhaps human beings aren't as selfish as I have always thought.

Now just two more quick questions. Same situation except that the king says he will let his ten hostages go free if you will go to prison for twenty years, otherwise he kills them. That's an easier question to be sure of your answer about than the previous one, so this time answer yes only if you are quite certain – 95 percent or better. All right, everybody hold up his hand if he is at least 95 percent sure he would go to prison for twenty years in order to save ten people's lives.

Well that looks like about three-quarters of you. Again I think you have overly high opinions of yourselves, or maybe some of you are too embarrassed to tell the truth, but I sincerely hope you are correct in your self-assessments.

Just one question more now. The king says he will let his people go if you will agree to give him all the money you have and all the money you will make in the future, except of course enough for you to feed and house yourself and take care of all the absolute necessities. In other words he's asking you to be poor, but not so poor that it impairs your health in any way. Again I'm asking for at least 95 percent certainty. All in that category please hold up your hands.

Well that's nearly every one of you! I'm very pleased; I hope you mean it. Perhaps in fact you do this time. After all, since you have the power to decide whether ten people die or whether you give up your money, if you made the other decision, you would be killing ten people in order to keep money for yourself, and surely that is murder.

I see some head-shaking – it looks as though a few of you disagree. The king has said, kill these ten people or I'll take your money. If you kill them, that is murder.

Look at it another way. If you are poor and kill ten people in order to steal their money, that is surely murder. But morally speaking, that situation is exactly the same as this one. In both situations if the people die, you will be rich; if they live, you will be poor, and it is within your power to decide which it is to be. In either situation if you decide that they should die in order that you can be rich, you have put your happiness, or not actually even that, you have put material riches for yourself above ten people's lives. That is the moral error you have made and it is exactly the same for both cases. One is as bad as the other and if one is murder so is the other.

Anyway, those are all the questions I wanted to ask you. I didn't mean to spend as much time on them as I did, but at least from my point of view it was well worth the time. Thanks for your indulgence, and also for your soul-searching – I guess those weren't easy questions to answer if you answered them honestly. Just be happy it was a make-believe situation and none of you is likely ever to really be forced to make any of those rather unpleasant decisions.

And now I'll get on to what is supposed to be my topic: overpopulation.

In 1650 the population of the world was 500 million. Within the next fifty years an absolute minimum of 500 million people will starve to death. Dr. Paul

Ehrlich, a Stanford University biologist and leader in the population movement, says between ten and twenty million people starve to death every year right now. If you take the smaller figure and make the ridiculous assumption that it will not get any larger in the near future, then you get the figure of 500 million deaths in the next fifty years. But it *will* get larger because in thirty-five years there will be twice as many people trying to find food in a world which today is so overpopulated that half of all human beings are hungry.

Perhaps that figure of five hundred million is too large for you to grasp in abstract terms. Let me translate it into something more concrete: if those five hundred million people were all to join hands, then figuring at about one thousand people per mile, they would form a line long enough to stretch to the moon and back – with enough left over to reach across the United States six times. Or if you prefer keeping things more down to earth, they would reach twenty times around the world.

The U.S. Army's M-16 machine gun fires seven hundred rounds per minute, or about twelve rounds per second. If you drove a car past this line of people at a little over forty miles per hour, you would pass seven hundred people every minute. If you used poisoned bullets or some such deadly concoction, you might be able to kill one person with every shot as you drove past. If you kept your finger on the trigger for ten hours a day, seven days a week, killing one person with each shot, it would take you three years and four months to kill them all.

It is a rather gruesome picture, and yet all these people – and probably many more – are absolutely doomed to die in the next twenty-five to fifty years. And it won't be the quick, easy death of a bullet, but the slow, pitiful, wasting death of starvation.

There is one bright spot in all this however – the legions of the doomed will not really reach quite twenty times around the world. Perhaps they'll reach only twelve or fifteen times around, for most of them are children and their arms are short.

Just one more statistic along these lines and then I'll move on. There are three and a half billion or 3500 million people in the world today. As I have said, somewhere between ten and twenty million starve to death each year. Thus in a group of 350 average human beings, somewhere between one and two will starve to death *each year*.

Opposed to these ravaged peoples of the world are the gluttons of America. You yourselves are good examples. As future graduates of a good college, it is surely within the grasp of most of you to be making a salary, after taxes, of \$10 000 or more within a few years. How much money is that? Well, you could easily take care of all the true necessities of life for \$2000, thus leaving you \$8000 for the luxuries. In America, anyone can stay healthy spending a dollar a day for food. It is not even hard to do. If one really skimps, he can stay alive and well for fifty cents – for I have done it. If it can be done in America for fifty cents a day, it can surely be done for that in the countries where people are starving. In fact, UNICEF can supply milk to the hungry children of the world at a rate of five cups per penny donated. Thus your \$8000 of luxury

money could be providing forty-four people with fifty cents worth of food a day – people who otherwise might starve. Remember that out of forty-four *average* people, one will starve to death every four to eight years (since 44 is 1/8 of 350 and 1 to 2 out of 350 starve each year). That's as things now stand. Since in the next forty years, things will get considerably worse, and since presumably if your \$8000 were donated to UNICEF, they would take care to pick out poorer than average people, I think it not unreasonable to state that \$8000 per year over a period of forty years is enough to keep healthy ten people who would otherwise starve to death – plus a good many more who would otherwise be malnourished.

So you see, I lied to you a little while ago when I said none of you would ever have to make any of those three unpleasant decisions. You will never have to make the first or the second – the two hardest choices – but you are this moment confronted with the third: for the ten who would otherwise starve are the ten hostages, you are the eleventh man, and hunger is the king. Thus if you decide to go on with the life you were probably planning to lead, you will be letting ten people die rather than give up your color television and your cocktail parties. And that is more than gluttony, it is murder.

But don't think of yourselves as murderers, for when I asked a little while ago, nearly all of you said you would make the proper choice. However, before you go out and donate all your money to UNICEF, stop and think for a few minutes. So long as the world remains overpopulated, people will starve. Instead of giving your money to an organization which is trying to stamp out hunger, contribute to one which is trying to stamp out overpopulation – the cause of hunger. For what good does it do to keep forty-four people alive enough and well enough to have eighty or a hundred children who must then go hungry because you only have sufficient money to feed their parents? Instead of solving the hunger problem, you may in fact be making it even worse.

Of course, there are fairly simple ways to get around this detrimental effect of feeding the hungry. For example you could feed only sterile people. That is not hard to do, since nearly every woman over age fifty is sterile. But I repeat: so long as the world remains overpopulated, people will starve. It is better in the long run to direct our efforts toward eliminating this basic cause of hunger.

That's really all I have to say. I'll close by stating my rather pessimistic outlook. I have a terribly low opinion of human beings and think it extremely unlikely that more than a couple of you will make that decision you said you'd make. As I think I have shown, the world of today is a place of stark horror, and the world of tomorrow bleaker still. While you go your merry way, closing your eyes and holding your nose as you step over the wasted bodies, I am struck – and sometimes almost comforted – by the knowledge that in not too many years you yourselves will be in that same sad' state. For the United States – indeed the whole earth – is fast running out of the resources it depends on for its existence. Well before the last of the world's supplies of oil and natural gas are exhausted early in the next century, shortages of these and

other substances will have brought about the collapse of our whole economy and, indeed, of our whole technology. And without the wonders of modern technology, America will be left a grossly overpopulated, utterly impoverished, helpless, dying land. Thus I foresee a whole world full of wretched, starving people with no hope of escape, for the only countries which could have aided them will soon be no better off than the rest. And thus unless we are saved from this future by the blessing of a nuclear war or a truly lethal pestilence, I see stretching off into eternity a world of indescribable suffering and hopelessness. It is a vision of truly unspeakable horror mitigated only by the fact that try as I might I could not possibly concoct a creature more deserving of such a fate. Good evening.

As you may have already suspected, I wrote that speech myself. It has never been delivered before an audience. For the audience's responses, I made up numbers which seemed reasonable to me. There is no Walter Bradford Ellis.

But it was indeed written in 1970. It is from a book I wrote, entitled *Rage, Rage*,¹ which attempts in considerable detail to present a picture of my world. My previous paper was an elaboration of some of the more independently explainable and more 'scientific' ideas from my book. The book was completed and those ideas all written down by May 1972, before I had ever heard of sociobiology. My pessimistic outlook is not based on the revelations of the sociobiologists but on the very nature of natural selection and exponential growth. And on my own impression of the nature of human beings.

In closing, I wish to briefly mention two points which, though important, I do not have time to discuss adequately. I demonstrate later on in my book that it is indeed extremely likely that giving food or medical aid to poor nations with rapidly growing populations (unless it is confined to non-reproducing individuals or is part of a very aggressive and successful population control effort) will in the long run cause much more suffering than it relieves. It is surely reality's crowning irony that those pitifully few individuals of the rich countries who are not dead to the plight of their fellow human beings are by and large engaged in food or medical relief projects which will in the long run greatly increase the toll of human suffering.

Also, my speech concerns itself mostly with absolute numbers of the starving. For several reasons I think this is the proper way to view the problem, but the proportions are impressive, too: It is a fairly simple matter to show that in our growing population, the chances that a newborn baby will ultimately starve to death (whether in one month or fifty years) will lie between the limits given on the upper end by the number of starvation deaths per year divided by the number of deaths from all causes per year, and on the lower end by the number of starvation deaths per year divided by the number of births per year.² Thus, using 1979's estimates of 47.5 million deaths, 121 million births, and a wild guess of 10 million starvation deaths (see Note 1 of my earlier paper for a sample of the estimates) we find that somewhere between one-twelfth and one-fifth of all human beings are *currently* perishing from starvation. Ten percent is probably as good an estimate as any. It will rise dramatically in the future.

NOTES

1 As yet, unpublished.

2 The lower limit is obtained by assuming that those dying of starvation all die essentially at age zero. The upper limit arises if we assume that those dying of starvation die at the same average age as those who die of all other causes. (Actually, the distribution of ages at death must match also, but fairly large differences in distribution result in only small errors so long as the average age remains the same.) For starvation, the true age at death is somewhere between these two extreme assumptions, and the actual proportion lies somewhere between these two limiting proportions. Since most starvation deaths occur in childhood, I chose a value near the lower end of the range as my best guess.