

PERSPECTIVES ON VIOLENCE

by *Kenneth E. Boulding*

Abstract. Violence is in its broadest sense the deliberate creation of "bads" or negative goods as opposed to production, which is the deliberate creation of good. Its two major sources are malevolence and threat. Malevolence is the situation where A's perception that B is worse off increases A's welfare or utility. Threat systems are probably the largest source of violence. Four responses to threat are: compliance or submission; defiance; flight; and counter-threat, which is stable in the short run, but must eventually break down and is the major source of violence in the modern world.

Violence, in the broadest sense of the word, is the deliberate creation of "bads" or negative goods, that is, things which make people worse off. In this sense it is opposed to production, which is the deliberate creation of goods which make people better off. In its largest meaning, therefore, violence is negative production.

The distinction between violence and production, however, is more than a little fuzzy. In the first place, there are wide differences in human valuations, so that what A regards as a good, B may regard as a bad. A, for instance, may smoke cigarettes with great pleasure, regarding the cigarette industry as productive. B may think A is a fool who is endangering his health and would regard the cigarette industry as negatively productive and part of the larger structure of violence. When someone is assassinated, the victim and those who regard the victim favorably will inevitably regard the gun or the bullet as a "bad." The assassin, however, presumably regards it as a good in that it removes from the earth a person whom the assassin regards as a bad. There are ways in which these diverse valuations are coordinated in society but they are by no means easy to resolve.

Kenneth E. Boulding is distinguished professor emeritus of economics and research associate and project director at the Institute of Behavioral Science, University of Colorado, Boulder 80309. He presented this paper at a symposium on "The Functions and Management of Aggression and Cooperation in Biocultural Evolution," sponsored by the Institute on Religion in an Age of Science at the annual meeting of the American Association for the Advancement of Science in Washington, D.C., 7 January 1982.

[*Zygon*, vol. 18, no. 4 (December 1983).]

© 1983 by the Joint Publication Board of *Zygon*. ISSN 0044-5614

A second cause of fuzziness in the concept of violence arises because it is often hard to know what is deliberate. Tobacco growers and the cigarette industry might very well be regarded as “sources of bads” in that their activities undoubtedly result in the production of cancer and other diseases which are universally regarded as bads, and thus they lead to a diminution of the average expectation of life just as surely as do terrorists and assassins. Most people, however, would think it reasonable to put these two occupations in very different moral categories. The tobacco and cigarette industry would no doubt be delighted if it could be shown that no injury resulted from smoking and perhaps even more delighted, I think, if it could be shown that some imperceptible additive to tobacco would eliminate all the adverse health effects of smoking. By contrast, an assassin or terrorist would not be at all pleased if his gun misfired or his intended victim wore a bulletproof vest. Most people would make the distinction, therefore, between the production of unintended and incidental bads and the production of deliberate bads. Nevertheless, the producers of unintended bads cannot be wholly exonerated, and laws either to prohibit, regulate, or tax incidental bads, like pollution, are very widely regarded as valuable.

A still more difficult problem arises in regard to what might be called “invisible bads” of which nobody, including their producers, is aware. Both in biological and social ecosystems the ultimate effect of any specific change is often very hard to trace, simply because these are what I call “echo systems”: an event or a decision echoes and re-echoes all over the system until it is often very hard to tell what the ultimate result turns out to be. The development of the automobile, for instance, had large effects on road-building industries, on the geographical structure of cities and retail trade, on the hotel and motel industry, on the oil industry, on international trade, and even on sexual patterns, fertility, and family life. These effects may have mixtures of goods and bads, so that the ultimate assessment is extraordinarily difficult.

This is one reason why I have been very skeptical of Johan Galtung’s concept of “structural violence,” which began fairly modestly by defining violence as anything which diminished the expectation of life and ended by defining structural violence as almost anything the author did not like in terms of quality of life.¹ There is certainly some validity, however, in defining conditions which produce a failure to realize the expectation of life which is implicit in our genetic potential. The traditional “threescore years and ten” is now slowly being raised, but we can still put the genetic potential as averaging somewhere between 70 and 80 years. According to *The Hammond Almanac*, poverty is strongly related to average life expectancy when the average annual income per capita is \$1,000 to \$2,000. Above \$2,000 the expectation of life hardly

seems to be related to income at all; below this level, however, the relationship is very noticeable.²

It is certainly reasonable, therefore, to try to identify those institutions, cultures, and conditions which make for a below normal expectation of life and to identify these as at least akin to violence. However, it is often extremely difficult to identify the decisions which would rectify the situation. It is fairly easy to identify the decisions which lead to the diminution or even eradication of specific diseases; it is much harder to identify the specific decisions which lead to the elimination of poverty, although the attempt to do this should by no means be abandoned. Some people have the power to make such decisions and they are not made, so the concept of structural violence has some validity. Even here, however, it is often hard to distinguish malevolence from incompetence and even harder, perhaps, to specify how either malevolence or incompetence can be cured.

The concept of positive violence, which is deliberate activity designed to worsen the conditions of some other person or persons, both through their own estimation and the estimation of a perpetrator of violence, is a concept a good deal less fuzzy than that of structural violence or implicit violence, although it also is a complex concept with a good many subdivisions in regard to both motivation and opportunity.

Economists brought up on a theory of maximizing behavior, which I once described as a theory of elaborate mathematical variations on the theme that everybody decides to do what they think is best at the time, would see violence in terms of a decision on the part of the perpetrator in light of his valuation of the change in the state of the world which the violent act produces. The law, however, recognizes a plea of insanity in the case of violent acts, even murder, which suggests that there are conditions in which a violent act may not be a result of choice but rather a reaction to a particular situation or environment, which situation may, of course, stretch back into the past. We can see the violent act of a madman, perhaps, or even one by a person completely carried away by anger, as a situation in which the agenda of decision has been reduced to a single item.

The English language is strange at this point; a person may punch or even shoot someone else because he "lost his temper," which suggests that "temper" should be defined as what you lose when you get angry, temper here being akin to being temperate, reasonable, and making rational choices. A bad temper, however, or the throwing of temper tantrums is a temper that it would certainly be desirable to lose. No one, to my mind, has ever worked out very adequately the economic theory of anger, but it is clearly the situation in which the immediate state of

the angry person dominates his inner landscape so completely that the consequences of behavior under anger are simply not assessed and rational judgment becomes impossible. Anger, therefore, frequently leads into bad decisions, that is, decisions which are later regretted when the anger cools and the total consequences of the decision become apparent.

The position of the law seems to be that anyone who has permanently lost his temper and who is, therefore, incapable of any appraisal of the total consequences of his acts cannot be held responsible for them. Such a person should be incarcerated in an asylum rather than a prison or should not suffer the death penalty if that exists. A temporary loss of temper, however, a flaring up of anger that leads to violent acts on the part of a person who ordinarily keeps his temper and is capable of rational decision, is not usually regarded as an excuse for violence and the person is usually held responsible. There may in some cases be a plea of temporary insanity. Temporary insanity, however, would seem to require a longer period than the mere flaring up of anger in a bar or in the family.

Violence within the family, indeed, seems to be a situation that we find hard to deal with in the ordinary legal framework. Recent concerns about battered women and children (in some cases, I suppose, there might even be battered men) suggest that this is a very major problem in society, which all too often is invisible. The household shuts its front door on the world, and what goes on inside it is traditionally supposed to be nobody else's business. It is hard to sustain this position when the results of family violence are shattered lives, especially of children, and when a rather large proportion even of actual murders take place within the family.

Almost at the opposite pole from anger is the violence which results from sadism and masochism. This should be a real puzzle for the sociobiologists, for how natural selection could produce a phenomenon which clearly must have some kind of genetic roots, yet which certainly seems remarkably inimical to passing on the genes to another generation, is a real puzzler. Nevertheless, there is no doubt about the existence of the phenomenon, although how widespread it is or how much it is suppressed is hard to say in the absence of much systematic information. It may, however, underlie certain much more public and legitimated forms of violence, particularly political brutality, torture by police, and, of course, war. Here we have violence, at least part of the motivation for which comes from the sensual pleasure which is derived either from the act of violence, from the spectacle of suffering on the part of others, or in the case of masochism suffering on the part of the self. These are very puzzling phenomena. Sexual behavior, in general,

certainly must have a strong genetic component in the connections between the brain and the rest of the nervous system, in the action of brain chemicals, and in the interaction of these with other parts of the body; but how far this genetic component represents potential which must be activated by learning experiences and how much is independent of learning experiences is still very much of a mystery. Homosexuality and other forms of sexual excitement and behavior, which would certainly seem to be dysfunctional from the point of view of a "selfish gene" and biological gene transmission, may be related to learning processes similar, perhaps, to the imprinting which traps Konrad Lorenz's famous geese; again, this seems to be a mystery. It is certainly hard to see how homosexuality could have a strong genetic component, particularly in the light of its remarkable persistence and stability in the human race, unless it is coded in the large redundant structures in DNA, which everybody has, and is just triggered by some other structure which has a 5 or 10 percent probability. The same, perhaps, might be true of sadism and masochism. Another question, which seems equally unanswerable, is whether there is any genetic or learning connection between homosexuality, sadism, and masochism.

Another very interesting question, again about which there seems to be a good deal of ignorance, is that of possible differences in the propensity for violence between men and women. There are certainly many species with differences in this respect between males and females; the males generally are regarded as more prone to violence whereas females are more nurturing and submissive. There is a great diversity among species in this respect, however. Evolution has produced a remarkably large number of devices for getting the boys and girls together, many of which have nothing whatever to do with violence or aggression, such as odors, or visual or aural display. Even within the human race there is a great variety of cultures in this regard, ranging from the fabled Amazons to great varieties of macho culture.

Although violence is sometimes associated with aggression, these are two very different concepts. There is a scale of passivity and activity in both individuals and cultures. This may be relatedly loosely to a scale of inwardness, or lack of interest in the outside world, and outwardness, in which interaction with the outside world is very important. There are no simple relationships here. However, some individuals and societies which have a strong and coherent inner life also may be outwardly aggressive. Nations which have exhibited imperial phases, like Great Britain, France, and Japan, also have had strong internal cultures with fair success in the resolving of internal conflict. Both persons and societies that cannot get their internal house in order cannot operate successfully in the external world. There are cases in

which failure to resolve internal tensions may produce external aggressiveness as a diversion. The relationship, however, is very loose. Thus, the internal trauma of the Great Depression may have been important in producing Adolph Hitler and external aggressiveness in Germany, but it seemed to produce isolationism in the United States.

The relationship between frustration and aggression, which was very fashionable a generation ago, seems far too simple. It has always amused me that what an economist defines as equilibrium a psychologist tends to identify with frustration. Of course, economic man, being perfectly rational and exhibiting none of the seven deadly sins, perceives a possibility boundary which divides his achievable states from nonachievable states; this is, indeed, a kind of fence on his utility mountain, on which "going up" means "getting better off." Economic man simply explores the possibility fence until he finds the highest point on it, makes his decisions accordingly, and then rests content having done the best that could be done. There is no sense of frustration, only of achievement. Psychological man seems to regard the possibility fence as an insult and jumps up and down screaming, "I can't get over it! I can't get over it!" Economic man also sees the fence as a challenge to be pushed out by invention and discovery, improvement of technology and production functions, and so on. Psychological man seems to see an enemy on the other side of the fence, who constantly seeks to push the fence further down the hill.

Just why exactly the same objective situation should produce frustration in one person and optimum achievement in another is extraordinarily puzzling. One possible view is that this is associated with the nature of the learning process. On the whole we learn by the failure of fulfillment of expectations. All we can possibly learn from fulfilled expectations is what we knew already, which led to these expectations. Success in this sense merely reconfirms our existing images of the world, although there is a problem here as to what success means when expectations are uncertain. Failure, however, can have two sharply diverging results: on the one hand, we can learn from it that our previous image of the world was wrong and can be corrected, so that we do not have to make the same mistake again; on the other hand, failure can be interpreted as a failure of personality or identity if what we learn from it is that we make mistakes because we are no good and will always make mistakes. Certainly something in the environment of the learning process is what makes the difference. We learn our native language with incredible ease in the supportive environment of the family, if it is supportive. We learn mathematics in the harsh environment of the classroom, perhaps with a sarcastic and hostile teacher; here failure does not lead to learning but to a fear of learning.

Aggressiveness, that is, a desire to interact with the outside world to expand our sphere of activities to integrate a larger area into our sphere on inputs and outputs, by no means has to be mediated through violence. The word "aggressive" in English often has overtones of violence or at least of putting somebody down or winning what somebody else loses. There is a certain implicit assumption that aggressiveness always implies zero-sum or even negative-sum games, in which all that happens is redistribution from constant or even decline in total good. However, this is very unrealistic; there are far more positive-sum games than there are zero- or negative-sum games, and economists always have emphasized that trade and exchange are in themselves essentially positive-sum. Exchange may be regarded as zero-sum in terms of asset quantities if the accounting convention persists that exchange is of equal values. It is clearly positive-sum in terms of utility or welfare, insofar as each party has a potential veto on the exchange, so that, unless both parties feel better off at the time at least, exchange will not take place. If I buy anything it is because at the time I think the goods I receive are of more value to me than the money I give up. At any moment we each have a vast number of exchange opportunities which we turn down because we think what we would give in exchange would be worth more to us than what we would get. This is not to say, of course, that exchange may not be regretted later, or that there may not be deceit or even certain elements of coercion, but these are secondary aspects of the process.

When we add production to exchange, the positive-sum elements of economic life become even more striking. Essentially production consists of utilizing human knowledge and know-how to turn less-valued materials and energy into more valued forms. When aggressiveness, therefore, takes the form of entrepreneurship, new discovery, and invention, it becomes a highly positive-sum game, although the complexity of society is so great that, even in a game that is generally positive-sum, it is quite likely that some people will be injured and will be worse off.

An even more strikingly positive-sum activity, which also might be classified as aggressive, is teaching—the attempt to expand the image of the world present in the mind of the teacher to other minds. Teaching is a remarkably positive-sum activity. Whenever a teacher teaches a good class, the students know more and so does the teacher. The teacher does not lose what the students gain. Even this process, of course, can have its perverse aspects in terms of propaganda and the propagation of error, but this has its limits. There is a very fundamental asymmetry in the human learning process in that error can be found out and truth cannot. One of the greatest dangers is mixtures of truth

and error which are propagated. The stability of the truth in the mixture may lead to a long perpetuation of the error. One can point to almost any ideological position of which one does not approve as an example of the above.

Violence is always one expression of aggressiveness in the sense of an expansion of the self towards the outside world, but it is actually a relatively small part of this total "expansiveness." This name for the concept would not have the unfavorable overtones of the word "aggression." A very important question, however, is why expansiveness sometimes takes the form of violence instead of the form of trade, production, or teaching, and so leads into negative-sum games. Violence, insofar as it means the production of bads for somebody, is almost by definition a negative-sum game. What the perpetrator of violence gains will be less than what the victim loses. We must look to the sources of violence, therefore, in those expansionist activities which become negative-sum. We already have seen that anger and insanity can be a source of violence because of the nonrational character of behavior under these circumstances. There is, however, violence which is performed rationally, in the sense that it is selected as that alternative which the perpetrator believes will most benefit himself. Two sources of rational violence seem to cover most of the field: one is malevolence and the other is threat.

Malevolence is a condition in which A's perception that B is worse off, at least in A's estimation, increases A's perception of his own welfare or his utility in economic terms. Malevolence may be contrasted with benevolence, in which A's perception of an increase in B's welfare increases A's welfare, and with selfishness, in which A's perception of a change in B's welfare does not affect A's perception of his own welfare. I have argued, indeed, that selfishness is just the zero point on the scale of benevolence and malevolence and in fact is rather rare. Most of us feel at least mildly benevolent or malevolent toward those with whom we come in contact and have economic or other relationships.

The mere existence of malevolence does not necessarily create violence, for if A is violent—that is, produces a bad for B—the production of this bad is likely to cost A something. If A is rational, he will balance the loss of utility due to the cost of production of a bad against the gain of utility from the contemplation of B being worse off. Then if the costs of violence are greater than the benefits, A will not do it. The cost of producing bads, therefore, is an important element in determining whether violence will take place. The degree of malevolence is another factor: the higher the malevolence, the more chance there is of violence; and the higher the cost of producing bads, the less chance.

Malevolence may or may not be associated with threat, which is a very important element in the social system. In its most general form a threat is a statement of the type, "You do something that I want—that is, produce a change in the state of the world that I regard as a good—or I will do something you do not want—that is, produce a change in the state of the world that you regard as bad." The bandit who says, "Your money or your life!" is in effect offering the victim a threat contract. If the victim gives the bandit the money and the bandit "gives" the victim his life, this looks a bit like an exchange; but it is a fraud because it is really a negative-sum exchange. The victim gives the bandit a good; the bandit gives the victim a negative bad, that is, refrains from doing a bad. In social systems, however, unlike classical algebra, minus-minus is not plus. Not doing harm is very different from doing good. Threats, however, are an essential element of social life. It would not be possible to have tax systems, government, or to provide public goods and diminish public bads without them. I pay my income tax mainly out of threat, which can be measured roughly by the difference between what I actually pay in taxes and what I would contribute to the government if it was financed by a United Fund!

It should be noted that threat does not necessarily imply malevolence, although it frequently helps to create it. The bandit may feel no malevolence toward his victim; he may just be selfish, although perhaps it is a little hard to become a bandit unless you feel alienated from society, which you regard in some sense as your enemy. A little malevolence toward the victim as a general symbol, representative of society, may not be uncommon. The Internal Revenue Service is not supposed to feel any malevolence toward the taxpayer, but there is almost inevitably a certain adversary relationship between the IRS and the taxpayer, especially when there is protest in the form of tax refusal. There was at least one famous occasion where the IRS was used by President Nixon to punish his adversaries toward whom he presumably felt malevolent.

The history of a threat system depends, of course, on the response of the threatened party. I have distinguished four major responses. The first is *submission* or *compliance*: the bandit's victim hands over the money; the taxpayer hands over his taxes; we pull over to the side of the road in response to the flashing lights of a police car right behind us; the student writes a term paper in response to the threat of not getting a grade; and so on through a very large number of cases. Submission, indeed, is probably the most common form of response to threat, although for threat to be persistent it does require that the threatened grant the threatener a certain legitimacy. The bandit is illegitimate and the victims may well get together and hunt the bandit down or create a police force. Terrorists, likewise, often damage their own cause be-

cause they are not granted legitimacy. The tragic hunger strikes of the Irish Republican Army members in jail in Northern Ireland were an illustration of the desperate need for legitimacy. There is a subtle, but very large difference between an enemy and a criminal; the enemy has a certain legitimacy that a criminal does not have, and the Irish Republican Army was, in essence, seeking enemy status rather than criminal status. However, their method of violence that so often injures innocent people continually renders them illegitimate even in the minds of their fellow countrymen. It is quite probable that we would have had a united Ireland long ago had it not been for the IRA, whose violence reinforced the British government's image of its own legitimacy. The violence of the British army may be as bad, but an established army has a cloak of legitimacy which terrorists do not have.

An economic person may see submission as an example of cost-benefit analysis or maximizing behavior, if the victim is economically oriented and will balance the cost of submission against the probable cost of the threat being carried out. If the cost of submission is less, he will choose that route.

If the cost of submission is greater than the probable cost of the threat, however, the second response may occur, which is *defiance* or refusal to do what the threatener wants and a willingness to take the consequences. This throws the decision back into the hands of the threatener who may or may not carry out the threat or some version of it. Here, credibility is important. Defiance is most likely to occur when the victim believes that the probability of the threat being carried out is small. If the carrying-out of the threat is costly to the threatener, as it sometimes is, the threat may lose credibility, and submission will pass into defiance. This may happen if the costs of submission are perceived as too great, that is, greater than the cost of the threat being carried out, all being discounted for probability. If the threatener fails to carry out the threat, this may impair future credibility, although there are circumstances in which failure to carry out the threat may suggest that the threat is being held in reserve, in which case credibility may even increase. The message is, "I'll spare you this time, but just wait. . . !"

A third possible response is *threat diminution* on the part of the threatened party. A very common form of this is flight, putting distance between the threatener and the threatened. A good deal of the migration of the human race around the world has probably been a result of this. It is based on the proposition that the capability of carrying out a threat diminishes with the distance between the threatener and the threatened, simply because the carrying out of a threat always has a cost of transport. Bads have a cost of transport, just

as goods do; if the threatened can get out of range of the threatener, then the threat is no longer credible or the threatener even capable. Another form of threat diminution consists of changing the terrain, for instance by building city walls or castles, which increases the cost of transport of the threat.

Finally, the fourth possible response is *counterthreat*; "If you do something nasty to me, I will do something nasty to you." This is deterrence. It is sometimes important to individuals dealing with legal threats; it is very important in international systems where deterrence is another name for the old "balance of power." It is particularly important in the world today, as between the United States and the Soviet Union with nuclear deterrence or "mutually assured destruction." This may be stable in the short run, as it has been between the United States and the Soviet Union for thirty years. However, it must have a positive probability of breaking down or else it would cease to deter and would lose all credibility. This means that deterrence cannot be stable in the long run and, indeed, history does bear this out. In the past such a system has seldom lasted more than a decade or so. A system of deterrence tends to produce arms races. These have a strong tendency to escalate and break down into war, if only because each nation has a strong tendency to overestimate the arms of the other. The First World War was essentially a war of the breakdown of deterrence between the two major European groups. The Second World War was ideologically more complex, but it too could be interpreted in much the same pattern of an arms race leading to breakdown. In human history as a whole, one suspects that deterrence is a major source of violence.

The dynamics of threat systems are surprisingly little understood, and the processes are also often quite precarious: they can go either one way or another depending on relatively small shifts in the parameters of the system. Prediction in international systems is extremely difficult, not only for the above reasons but also because power is highly concentrated, and the very processes by which individuals rise to power have strong random elements in them.

Two properties of threat systems are particularly significant in determining their dynamic course. One is the vagueness of the threats involved. Generally speaking, the more specific and well understood are the threats and the conditions under which the threats are carried out, the more likely we are to find submission or some sort of accommodation. Like exchange, threats can become subjects of bargaining, but only when they are fairly specific. Plea bargaining in the courts is an interesting example. On the whole, the law is most effective when the threat system is highly specific and relatively certain of application. It is least effective when the threat system is vague and uncertain in application.

The appalling violence of the international system is largely due to the fact that the threat system uses very vague threats: "I will do something rather unspecified to you if you do something rather unspecified to me." This makes negotiation and bargaining extremely difficult, especially as the threat system itself undermines trust and creates malevolence. It is hard not to feel at least a little malevolent toward somebody threatening you. The present international system is the biggest negative-sum game on earth. It makes us all poorer and virtually ensures our eventual destruction. Its replacement by a system of security through stable peace—which means we must abandon threat—is perhaps the highest priority of the human race.

One aspect of threat systems which has a profound effect on its nature is the technology of weaponry. A weapon is an instrument for producing bads. It is a means of production of negative commodities. The three major characteristics of a weapon are its deadliness, accuracy, and range. Accuracy is actually a condition of deadliness. The size of the destructive capacity, for instance in explosive power, is an aspect of deadliness, but by no means the only one. A hypodermic needle in the hands of a doctor may be more deadly than a cannon. The range of the deadly missile depends on its cost of transport; as this declines its range increases. By and large, the size of what can be defended in a system of deterrence is a function of the range of the deadly missile. The barons inside castles of the feudal system could withstand bows and arrows and spears. They could not withstand a reasonably efficient cannon. The long-range missile and the nuclear weapon have done for the national state what the cannon did for the feudal baron—destroyed its unconditional viability.

There are still some very fascinating questions about violence as a social phenomenon which we will have to pass over very quickly. One is the relation of violence to property. An exchange system is based on the assumption that all valuable objects that can participate in exchange are allocated to one exchanger or another. Where the distribution of property is felt to be unjust by a sufficient number of people, there may be a temptation to try to redistribute it through violence, or at least through threat. This tends to come from the assumption that the distribution of property is a zero-sum game and that one can only gain at the cost of another. Over time, of course, this is not necessarily true. Indeed, the distribution of property at any one moment is a result of the total past history of growth or decline in property by different individuals, families, or sectors of a society. Violence, because it is a negative-sum game (as a threat system also tends to be even in the absence of violence), may be much less successful in moving towards justice, that somewhat ill-defined but nevertheless important ideal,

than a more relaxed process of buying out the inefficient or the exploitative. The distribution of property could change enormously even in one generation if there are significantly different rates of growth in different parts of the system. This accounts in part for one of the great ironies of war—that economically the loser often does much better than the victor, unless, of course, the war is one of conquest and extermination, which on the whole are rather rare. This loser benefiting economically more than the victor does not always happen, but it happens often enough to be very significant. Thus, Japan and Germany were the economic victors in World War II. Land reform, such as happened in Japan after 1870 or in Taiwan after 1945, which buys off the old, inefficient, and exploitative landlords and in fact turns them into bankers or small manufacturers, is much more productive for the poor than a revolution which kills the landlords off, as in China and Russia, and so wastes valuable human resources which could easily be better utilized.

A total cost-benefit analysis of violence through human history would be almost impossible. It might throw up a few cases in which the benefits exceeded the costs. One suspects, however, that in the vast majority of cases the costs exceed the benefits and that it is the more relaxed, nonviolent processes that really lead to human betterment.

NOTES

1. Kenneth E. Boulding, "Twelve Friendly Quarrels With Johan Galtung," *Journal of Peace Research* 14 (1977): 75-86. This is a review article of Johan Galtung's *Essays in Peace Research*: vol. 1, *Peace Research, Education, Action* and vol. 2, *Peace, War and Defense*.

2. *The Hammond Almanac* (Maplewood, N.J.: Hammond Almanac, 1980), pp. 504-12, 529-702.

Notice

I am doing some writing on the relation of myth—in its positive sense—to science. If any *Zygon* readers have ideas or references on the topic, I would appreciate greatly their writing to me.

Rollo May
98 Sugarloaf Drive
Tiburon, CA 94920