

## INTRODUCTION TO THE PROBLEM: AN INTERVIEW WITH GEORGE WALD\*

*Environmental Affairs:* Dr. Wald, we want to thank you for lending this afternoon to us. We very much appreciate your courtesy and your support of our journal. Doctor, your voice was among the first really listened to by the public on environmental matters. We wonder how you view the environmental problems we face against all of the other problems of our society.

*Dr. Wald:* I think the problems of the environment are among the most imperative and most important problems that now face us, not only in this country but all over the world. And, as a matter of fact, the world's problems are to an extraordinary degree America's problems. Indeed, we are making these problems not only for ourselves but for the whole world. The United States, with only 6 percent of the world's population, is said to use something like 40 percent of the world's irreplaceable natural resources, and to account for about 50 percent of the world's industrial pollution. Hence the main ground for action is here in this country.

When it is said nowadays that we are in the grip of a hysteria with regard to environmental problems, I wish it were true. This is not in any sense my special field, but as I go about trying to inform myself, talking with the experts, I find that the more deeply one explores and the more expert the informant, the more threatening the situation seems. The concern is not hysterical at all. Unfortunately, experts are convinced that the threat to the environment is all too real.

*Environmental Affairs:* In what priority do you place the environmental problems we face? How should they be treated?

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*Dr. Wald:* I think that as we approach this nationally we see that there are two important traps to avoid. The first of these is that the environment and pollution could be used as a distraction from the many other problems we need to face. The environment must not be permitted to become a distraction. On the contrary, it is very closely interwoven with many of our other problems. We can't handle environmental problems and pollution apart from those other problems. They need to be dealt with together. So, though it seems politically attractive in some cases to turn the attention of the young people of this country, for example the students, onto the environment and pollution to the exclusion of their concern with the Vietnam War, electoral politics, race relations and all the other problems that are plaguing us, that must not be allowed to happen. Indeed any proper concern for the environment involves one with all those other problems too.

The second potential trap is even harder to cope with: that is the possibility, attractive in some quite predictable quarters, of turning antipollution into a new multi-billion-dollar business. The only proper way to cope with pollution is to stop it at its source; but that brings one immediately into conflict with some of the most powerful forces and lobbies operating in this country. For example, the biggest air polluter is the motor car—that brings one into conflict with the motor car and oil industries. Another big polluter is the lumber industry; a third big polluter is the power industry. These are all extremely powerful forces. So there is going to be a great temptation to avoid that issue by allowing the pollution to go right on, and to build on top of it a new multi-billion-dollar business of antipollution. In these days of conglomerates, it could end up being the same business—the one division polluting, the other division removing the pollution, and the American public, as usual, paying the bill.

*Environmental Affairs:* I take it that you are of the school that would explore removal of the pollutant at its source, rather than neutralizing it in some fashion?

*Dr. Wald:* There are troubles closely connected with this too. Our way of removing pollution at its source would be through the use of governmental regulatory agencies. One would pass proper legislation and put the enforcement of that legislation in the hands of regulatory agencies. As you know, Mr. Nixon has just unified the agencies concerned with the environment.

But the difficulty with regulatory agencies in the past, and particularly when, as in this case, they are going to have to deal with very powerful business interests, is that shortly, if not at once, they are taken over by those very business interests. Rather than regulating what is going on, the agencies tend to foster it. What one is up against then is a generally deplorable situation. On one side, there is usually an apathetic public. It can be excited about a few issues if they are local and pressing. But on the whole, over the long run, the excitement dies down. The public tends to become apathetic; and it feels sadly ignorant. As such situations as pollution and race relations arise, the public feels that it is not nearly capable or expert enough to deal with them.

This apathy is not altogether an accident. To a degree it is fostered. There is a flood of propaganda, advertising and the like from powerful corporate and industrial sources designed to lull the public into believing that matters are better in hand than in fact they are. So that, relative to the regulatory agencies, usually you will have on the one side a silent, apathetic public, and on the other side very powerful, forceful and wealthy interests. Poised between both forces, there is clearly a tendency for the corporate industrial interests to win out because they are pressing all the time for the immediate reality of higher profits, whereas the public is divided, frequently misled and certainly not unified, even over a short time span, let alone over a longer period.

Another matter is very serious, and those concerned with the environment are running into it increasingly. It is that some of the projects which seem as though they most need to be done, and in themselves seem idealistically oriented, unfortunately press most directly upon the poor. For example, the cry to clean up the cities is very likely, almost immediately, to deprive poor people of their homes by driving them away. A lot of the things that one wants to do often have the immediate effect of coming down hardest on the sections of the population least able to bear them. At a meeting on the environment held on Earth Day at Harvard, I think the honors of the evening were taken by Dr. George Wiley, who heads the National Welfare Rights Organization in Washington. He is black, and he urged this point of view very convincingly.

*Environmental Affairs:* Would you add to these difficulties the fact that environmental problems get less and less popular as it is realized more and more that they will cost money?

*Dr. Wald:* I certainly would. As you know, politicians have often referred to the environment as a "motherhood" issue, pointing out that everybody's in favor of motherhood, although as we know, you can even get too much of that. It is true, however, that all over the country, politicians are glad to be eloquent about the environment, until the question arises—if indeed it does arise—what do they plan to do about it? That would immediately bring them into conflict with very powerful forces. In general, therefore, the politician will be eloquent about the environment without going into particulars. On Earth Day, Senator Muskie had spoken very eloquently for the environment; and Dr. Wiley, in the discussion afterward, tried to get him to make a definite statement about a minimum income for the poor. He couldn't succeed in nailing Mr. Muskie down on that issue. A speaker from the floor then made some very definite and particular allegations about serious pollution problems in Maine and again he met with no clear response from Senator Muskie. As I understand it, Ralph Nader has been needling Senator Muskie, I think not at all in opposition to Mr. Muskie's quite evident desire to do something constructive for the environment, but to try to bring the details of what he would like to do more into the open than Senator Muskie seems at this point to think prudent.

The simple truth of the matter is that the "environment" is a motherhood issue if ever there was one, but going beyond mere rhetoric into particulars and trying to cope with real situations is thoroughly dangerous to most politicians. It's going to take a great deal of public pressure and a great deal of political change to face these issues and to begin to effect any real changes.

The whole issue is very closely involved with the problem of population control and related questions. I think that all of us realize that pollution and the population explosion are among the most serious threats that mankind now faces. It is absolutely essential that we stop polluting in the manner to which we have become accustomed, and begin taking better care of the environment. If we don't, it may grow so inimical that we won't be able to survive in it. It is equally clear that we have to bring population under control if we are to cope with any of our other serious problems, including the pollution problem.

Yet one finds the objection raised now in some quarters that this call for population control is essentially a call for a kind of genocide encouraged by the rich. And, strange as it sounds, I think that there is some reality in this objection; because the simple truth of the matter is that the world's work now depends less and less on human

muscle. As one gets on with mechanization, there is much less need for human muscular labor, and in many parts of the world, not just the industrial countries, there is much less need for people than ever before. One doesn't have work for them to do, and they become an embarrassment because though their work is no longer needed, they need food, clothing, housing. They want education; they want to share in other rights. In short, they have become an embarrassment. There is no question but that part of the interest in population control comes from wanting to relieve this embarrassment.

Not only that, but our whole attitude with respect to foreign trade is changing drastically. I think that it is now being realized that the "big money" is not made by employing or selling goods to huge numbers of poverty-stricken people. There are larger profits to be made from the affluent societies. This has made imperialism, economic imperialism, as we used to understand it, a little old-fashioned. I think one must admit that views such as this are shared by some who call for population control. Yet it is absolutely essential for the underdeveloped countries and for the disadvantaged segments of the developed countries to bring their numbers under control. Their only hope of achieving a better life rests on controlling their populations.

It already is rather late in the day. As with all our other serious problems, we have remained inactive and apathetic far too long. It is essential now that we try to institute as rapidly as possible, not only in this country, but all over the world, convenient, safe and cheap (or preferably free) means of both contraception and abortion. The state we have to try to achieve as quickly as possible is one in which no woman in the world need have an unwanted child. It is not clear that that will be enough; yet it might be.

*Environmental Affairs:* You don't favor more drastic action then?

*Dr. Wald:* I think we need to try to achieve that state of affairs I just described, and then take stock and see where we are. And if that does not prove to be enough, we must then go on with other sensible procedures such as manipulating taxes as to discourage families larger than, let us say, two children, instituting tax penalties after the first two children. There is a variety of such procedures. None of them is as cruel as the present ways in which population is limited. The present main limitation on population is infant mortality. What is killing those children all over the world are the age-old ills: war, famine, disease and poverty. Surely we can improve on such a horrible situation. Indeed we must do so, and whatever opposition

still exists in the world regarding contraception and abortion must give way to the realization that the present situation is ever so much more cruel and inhumane than legalized abortion and contraception ever could be.

*Environmental Affairs:* Assuming more drastic measures than you now advocate are deemed necessary, do you see the specter of an overpowerful superstate in the suggestion one now hears about enforced contraception?

*Dr. Wald:* At this point, I think that these are red herrings that are brought up to scare people just like the red herrings which have made it political suicide in some quarters to vote for gun legislation. However carefully one explains that all he is trying to do is identify those persons who possess the guns, that all one is asking is for gun registration, it is pointless against such red herrings. Immediately the cry goes up, "The next thing you know they'll take away our guns or try to do so."

The fact of the matter is that we are far from any idea of drugging people, putting contraceptive chemicals into drinking water or food, licensing people to have a child, or any kind of governmental compulsion. All one is asking is to let every woman decide for herself whether or not she is going to have the next child. That is where the whole matter stands at present. And, in fact it may end there, because if we ever really give this right and the means of exercising it to women all over the world, I think that there is a good chance that the population dilemma will be solved.

I do not think that this is any time to get excited about diabolical governmental plans. I think that the whole matter begins and ends now with this question: Can we put into the hands of every woman, regardless of social status or economic status, the control of whether she is to become a mother or not, and whether she is to have the next child? That's where the matter rests and may continue to rest. Nobody who has any responsibility is seriously raising now the question of government compulsion and I hope that never proves necessary. But the shoe now is on the other foot. It is now widely illegal for women to *prevent* childbirth. For me the decision of whether or not to have a child is a very deep and important aspect of human freedom. To me, it is intolerable that the government should intrude on a matter as deeply private as is this question of motherhood. I think it is no business of government. I think it is an ancient vulgarity that we have to get rid of, but somehow the

tradition exists that the government has a right in this regard. I don't think it does.

*Environmental Affairs:* Well, doesn't that get us back to your opening remarks? Doesn't it seem probable that, unless we are able to balance all of our problems at once, people are bound to be hurt in the wake of reform?

*Dr. Wald:* In discussing the environment and what to do about it and this matter of population control, I think the most fundamental guiding principle must be to take adequate care of people while doing all of these things. Any program can end in brutalities however idealistically or callously undertaken. Any program, it seems, can really come down very hard on the poor, the deprived and the underprivileged.

I think that as one begins to cope with the problems we have been discussing, one must have the realization that he is not merely trying to stop pollution, or trying to improve the human environment, or trying to control population, but is attempting to do these things with a constant sense of responsibility for taking care of people. If you are trying to clean up slums, you have to do it in a way that gives the people now living in those slums better places to live. Urban renewal in this country for the most part has been a shambles—it drives people out of their homes in order to make huge bureaucratic structures to house civil service employees. God knows why. It is highly questionable that it has improved the environment in any sense at all, and it certainly has the immediate effect of driving people out of their homes.

We've got many heavily funded federal programs which give aid to states for building highways, almost regardless of need, and, whatever one thinks about highways themselves, new projects of this kind are a constant threat to underprivileged persons who are being forced out of their homes. I think one has to face the total problem.

Yes, indeed, population control is needed, but with the very end in view from the beginning that one should take ever so much better care of all the children that exist in the world. We must not institute forms of control which are inhumane. We have it within our power to eliminate the present high infant mortality due to disease, famine and other consequences of overpopulation. Our system, therefore, must be one which, in controlling the population, consciously assumes the burden of caring for the children who are born. Without

such an overall goal one can't deny that the opponents of population control have a strong case, but if we make a real commitment to this philosophy of care, all opposition to population control should cease.

*Environmental Affairs:* We couldn't agree more. But the problem is that it is difficult enough to get action on a single environmental problem, let alone agreement on an overall philosophy.

*Dr. Wald:* Well, of course, for example, just recently there was held a rather large meeting organized by physicists which examined the whole business of nuclear power. The whole point of this meeting was to try to talk out expertly, to determine to what degree nuclear power is desirable, taking into account all factors from economics to pollution and other dangers. The idea was to discuss this on as high, practical and concerned a level as possible. Representatives of the power industry had been invited. None of them appeared.

What was true of this meeting is also true in a different way of government regulatory agencies. At the end of World War II there was a tremendous campaign, at times very hot and very bitter, to decide whether our nuclear enterprises would be under military or civilian auspices. A bill which would have put nuclear energy under military supervision was introduced into the Congress. I have forgotten at the moment the name of the bill that put it in civilian hands. Four-fifths of the physicists in this country had been in war projects during World War II, and they were very concerned about this situation. They formed the Federation of Atomic Scientists, which had as its foremost goal civilian control of atomic energy in this country. We won; but we lost.

I think that in the aftermath we now realize that we really lost, the way a lot of battles are lost, that is, by taking a deep breath and going about our other business after having won the initial victory. Meanwhile, the Atomic Energy Commission was becoming more wrapped up both with the military and big industry, and curiously enough, with the power industry. Of course the AEC was intended to be a regulatory agency, regulating all these matters in the public interest. But it rapidly became, in fact, sort of a propaganda agency for the wide use of nuclear energy and atomic power. Today it has such projects as utilizing nuclear power to crack open gas reserves deep in the earth. One such project I know of is causing very deep concern in Colorado because the gases being liberated are heavily



radioactive, and it is believed constitute a dangerous degree of pollution.

It was a great shock to many of us who had been members of the Federation of Atomic Scientists to have it suddenly revealed that the AEC was a different creature from what we had originally intended. After being told that the new ABM program would cost about \$5.5 billion, and after we had reluctantly begun to digest this, we were suddenly told that they had forgotten about the warheads. They—the Department of Defense—hadn't included the cost of the warheads, which would add an additional \$1.3 billion. Why had they been forgotten? Because they are made by the AEC, which is not part of the Defense Department, and has its own budget. Those of us who had thought of the creation of the Atomic Energy Commission as a great civilian achievement, a great victory which had protected the whole nuclear enterprise from military influences, were surprised and more than a little distressed to realize that our AEC, our civilian agency, is in the business of making nuclear warheads.

Now, of course there is very deep public concern with the kinds of pollution that go with the production of nuclear power. There are two kinds. There is a very serious waste problem which no one quite knows how to deal with because the wastes continue to be radioactive almost forever. One hardly knows where to put them safely. The other problem is thermal pollution. Nuclear plants require continuous cooling and very large amounts of water which is heated and discharged so that the river temperature can go up 10 to 15 degrees, killing wildlife and fish. It is a very serious business and one, I fear, that the AEC is not properly regulating.

*Environmental Affairs:* In that regard, hasn't the AEC been caught suppressing information about the real threat and future of atomic energy?

*Dr. Wald:* As I understand it, that is true to a certain degree. There was a big enthusiasm on the part of the power industry for going nuclear. That has almost ceased to exist. The number of nuclear installations planned has fallen drastically within the last couple of years.

I think that right now interest in nuclear power is low, and this is a considerable embarrassment to the AEC. It shouldn't be. The business of the AEC should be entirely involved with just one thing, and that is the public interest. But, unfortunately, it has rather

fallen in love with its problems and seems to be doing everything it can to promote the use of nuclear power, in spite of widespread fears of radioactive pollution and thermal pollution.

The AEC has recently been attacked by scientists in the Radiation Laboratory in Livermore, California, for setting the permissible levels of radiation too high. These men feel that the radioactivity pollution standards set by the AEC are dangerously high, and should be set lower. Those scientists, I read in the newspapers, have since had their funds cut and are concerned that this may have been retaliatory action. The AEC, however, has denied this and says that cutting the funds of these two men is just part of a general economy program forced by a cut in their own funds.

*Environmental Affairs:* That whole area of the Administration appears a little sinister. We could all profit from an investigation which would shed light on it. What are your views on the present Administration as a whole? The President's science advisor, for instance?

*Dr. Wald:* Well, physicists with whom I have talked, and who know the President's recent Science Advisor Lee Dubridge very well, spoke of him very warmly and with the greatest of affection and respect; but many of us were solely disappointed with the stance he took on many issues, including some serious pollution problems. To us, it looked as though he had represented the administration to the scientists, rather than representing scientists to the administration.

For example, take two of his actions. One involved his statements on 2,4,5-T, a herbicide which has been shown to have very serious embryo-deforming effects in mice and perhaps in man. Now 2,4,5-T has been used very widely in South Vietnam. His statements began appearing in newspapers before the public was informed of the embryo-deforming effects in mice. Several newspapers in South Vietnam had reported the appearance of an unusually large number of deformed infants. The first word out of Lee Dubridge was that the concern beginning to be expressed about this was misplaced; that the concentrations used in South Vietnam were not toxic to people and were far too low to represent any danger. I think that it is fair to say that his statement had very little hard evidence behind it. I think it has been demonstrated since that it might have been easy to achieve concentrations toxic to people in drinking water in sprayed areas in Vietnam. This is a herbicide that is dangerous. Now, there

are attempts to begin to control sprays in this country. The reason that makes it a much graver situation in Vietnam is that there the spray is used at 10 to 15 times the concentration limit set for use here. So it made a bad situation, and I don't think that Lee Dubridge helped it by pretending that it was unimportant.

The second situation involves the oil spill in the Santa Barbara channel. Lee Dubridge headed up a commission, as I understand it, that issued a report after just two days visit. The advice of the report was—I think I am correct; I am talking just from memory—I believe the advice of this report was to drill 50 more wells so as to relieve the oil pressure. One of the members of the commission was reported to have said that this might take another ten to twenty years.

These are rather usual ways in which government administrative agencies operate even though they are supposed to be primarily concerned with the public interest. In fact, they defend and protect the very business interests which they are supposed to regulate, which are ever so much more definite in their desires than is the public, and more ready to appreciate favorable regulations.

*Environmental Affairs:* I see our time is up. Dr. Wald, I take it from your observations over the past few hours that you are basically optimistic. Is this correct?

*Dr. Wald:* Yes, I think I am; because I need to be, as all of us need to be. What is at stake is too big to surrender. It is our future, the lives of our children, the future of the human enterprise. All the things that threaten it now are by comparison trivial, and wholly ignoble. It's a fight for life; and when it's that, you don't lose heart, and you never give up.

*Environmental Affairs:* Thank you, Doctor Wald.