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Forum Interview

with René Dubos

Where is medicine going?

René Dubos is the author of a dozen books that have won international acclaim.[1] For half a century he has been warning doctors and society against the dangers presented by modern life and has acquired the reputation of being a prophet in his field. Many of his ideas have been readily accepted, others have met with scepticism, but his thinking has never left his readers indifferent. In 1980 his motto "think globally, act locally" was taken up by the World Conference on Futurology. Recently the French news magazine *L'Express* published an interview of René Dubos by Sophie Lanne on a subject of particular interest to health workers.[2] The *Forum* is pleased to reproduce below large extracts from that interview.

Is it your vision of the environment which finally led you from microbe to man?

Do you know Lewis Thomas's book, *The lives of a cell*?[3] Lewis Thomas is a biologist and a remarkable doctor, a very brilliant man whom I know very well because he was in my department at the Rockefeller Institute. He has had a brilliant career and is now Director of the largest American cancer research institute, the Sloan-Kettering Cancer Center. He begins his book, which has been an enormous success in the USA, by showing that life exists only in so far as different organisms live in a symbiotic relationship. It is known today that the mitochondria—the submicroscopic particles through which the cells of our body utilize energy and without which we would be unable, as he says, to contract a muscle or express a thought—were separate organisms, probably bacteria, three thousand million years ago, like the plant chloroplasts that control photosynthesis and liberate the oxygen we need to live. Mitochondria and chloroplasts began to live in symbiosis with other organisms. They have become essential for the life of animal and plant cells, which have themselves lost the power of living independently. All life is a kind of symbiosis of that type. This is the way in which I see human society, and I can even say that I have made it known to that society. It is at the very basis of my approach to the environment.

To what extent, according to you, are our attitudes, behaviours, even our physical appearance, conditioned by our environment?

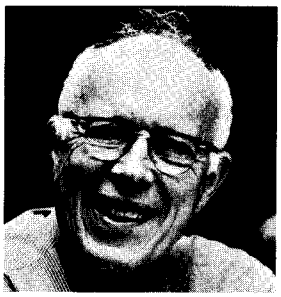
I can give you an example of this. To my mind the great tragedy of a city like New York is not pollution or violence, it is dirt: all the rubbish bins, the piles of filth, and the disorder are seen every day by children who do not notice it any more and accept it as a natural state of affairs. Now getting accustomed to visual pollution, disorder, and slovenliness is very serious from the mental viewpoint. The great tragedy of pollution is not that people suffer from it but that they come to tolerate it.

[1] Among them the reader will probably remember:
— *So human an animal.* New York, Scribner, 1968.
— *A god within.* New York, Scribner, 1972.
— *Man adapting.* New Haven, Yale University Press, 1965.
— *Beast or angel?* New York, Scribner, 1974.
— *Only one earth: the care and maintenance of a small planet.* With Barbara Ward. New York, Norton, 1972.
— *The quest: reflections on medicine, science and mankind.* With Jean-Paul Escande. New York, Harcourt, 1979.

[2] *L'Express*, 3 November 1979 (No. 1477).

[3] Thomas, Lewis. *The lives of a cell: notes of a biology watcher.* New York, Viking, 1974.

René Dubos



Born in France in 1901, René Dubos emigrated to America over 50 years ago and became a US citizen. Educated in the Institut national agronomique and Rutgers University, he has since 1940 been with the Rockefeller Institute (now The Rockefeller University), New York, of which he is Emeritus Professor of Pathology. His works have covered fields as varied as agronomy, ecology, energy, microbiology, nutrition, and health. He discovered induced enzymes and, in 1939, the drug gramicidin. In 1972, in collaboration with the economist Barbara Ward, he prepared the report *Only one earth* for the United Nations Conference on the Human Environment, in Stockholm. He has recently completed a new work for his eightieth birthday with the appropriate title *Celebration of life.*

It is not that it kills, but that one becomes accustomed to it.

What you are saying is that the great danger is not that man fails to adapt to his environment, but that, on the contrary, he adapts too easily?

That is what I have come to believe. The great problem of our time will be to decide what we should *refuse* to adapt to. For example, noise. Of course one can become habituated to noise, but at the expense of damage to the auditory organs. The body can become accustomed to air pollution, thanks to the bronchial secretions which protect it, but which in the long term will bring about emphysema or chronic bronchitis.

Do you think that medicine does not have enough faith in the recuperative powers of the human body?

Lewis Thomas, to quote him again, considers that 90% of the patients who consult a doctor would recover spontaneously if they only wanted it and took a few aspirins. Of course he is exaggerating a little, but I am convinced that the natural recuperative powers of human body are extraordinary. What I find fascinating is that we are starting to collect scientific data on the subject and to establish scientific bases for these phenomena.

To give an example: one of my colleagues in the Harvard Medical School noted, during the battle of the Anzio beach-head, that soldiers with horrible wounds were not suffering. He thought that it was due to the feeling of deliverance at having finished with the war and being repatriated, and he was right. But we now know the mechanism involved. In certain conditions of suffering a whole series of hormones, called the endorphines, are set free in the brain and it has been found that all kinds of life situations can increase their secretion. Even more, it has been discovered at the Montreal Institute of Neurology that acupuncture—whose effect has been confirmed without our being able to explain its mechanism—acts under certain conditions precisely by increasing endorphine secretion. Many very learned doctors, including Osler, who was the most famous physician of the English-speaking world and was Professor of Medicine at the Johns Hopkins Medical School, have noted that when people die a natural death then death comes without suffering. It is above all when an attempt is made to prolong life artificially that suffering accompanies death. There again, the hypothesis most often put forward is that when the body functions begin to break down there is a marked secretion of substances like the endorphines, which spontaneously soften the passage from life to death.

Do you believe that scientific medicine, as conceived of and practised nowadays, is on the wrong track? That it should be reorientated towards other fields of research?

Above all, do not try to make me say that I am against scientific medicine or that I reject it! I have the greatest respect for modern medicine and the remarkable researches which have been conducted in physiology, biochemistry, biology and molecular biology. I believe that it has still much to contribute in this field. I do not doubt that conventional medicine can progress further. But I believe that medicine will become completely effective only when it

recognizes the existence of extraordinary and mysterious mental phenomena that have a direct influence on the body. It is beginning to examine these phenomena. Nowadays such research can pass to the laboratory stage and this will be the great revolution in medicine. The most immediate, the most important and most practical future of medicine lies there: what is now needed is to learn how everything that happens in the mind conditions and modifies everything that happens in the body.

Do you not feel that everyone knows this or vaguely senses it?

Of course, but so far scientists have not dealt with this aspect of medicine or have rejected it because they did not know how to approach it. Pasteur, for example, was perfectly aware of it. There are astonishing passages where he establishes a direct link between cure and environmental conditions, referring, moreover, to the Greeks who always gave treatment in beautiful places and with a musical accompaniment, cultivating everything that could have a favourable influence on the mind.

Can science explain everything?

I have asked myself this question. Einstein believed that science could explain everything but often it explained things that were of no interest. A Beethoven symphony can be explained scientifically by analysing the sounds and vibrations, but what is it that makes one the Pastoral and another the Ninth? Does this really come within the field of science? I shall tell you something that greatly struck me. Peter Medawar, who is a famous and very brilliant winner of the Nobel Prize for medicine, is also very well known for his skepticism concerning psychoanalysis and psychotherapy. A short time ago I came across a review he had written of a book on cancer psychotherapy. I was completely astounded to find him saying that there was no need for all this discussion to realize that a patient's mental state could influence cancer. And he went on to cite an experiment with the Mantoux test made by an English immunologist.

The immunologist carried out the intradermal test on both arms, put the patient under slight hypnosis and told him that one arm would be positive and the other negative. And indeed this is what happened. This result can be confirmed at will. And Medawar concluded his article by stating that if a protective immune reaction against cancer existed it would almost certainly be of the same type.

He accepted the theory that something happening in the mind can modify the response of the body to an initial cancerous reaction?

There we have a new science just commencing. It still has very few data, but there are facts like these with which laboratory work can be started. Scientists detest working on subjects where there are no precise data, where no checks can be made, and where no experiments can be repeated. I am now convinced that we shall see an explosion of discoveries in that field.

Let me tell you an extraordinary story. A few years ago Norman Cousins, the editor of the great American magazine *Saturday review*, was attacked by a very mysterious collagen disease, regarded by the doctors in the very great New York hospital where he was cared for, as irreversible. He decided to leave the hospital and look after himself in accordance with his own ideas. He installed himself in a very pleasant hotel and had himself shown a lot of very funny films, which made him laugh; he surrounded himself by people who knew how to tell funny stories; he had himself served the meals he liked; and he took enormous doses of vitamin C. In a few months he was completely cured!

Was the cure checked by analyses?

Definitely! Medically checked and confirmed! He described his experience in the *New England journal of medicine* which is the best American medical journal, expecting to be bombarded with indignant protests. He received 4000 letters from doctors all over the world, who considered this a fascinating example of the placebo effect, which acts on average on one-third of patients, and that it was a unique opportunity for trying to understand its mechanism. He mobilized the documentation services of his journal, collected all available information on the subject, and

wrote three articles on the placebo effect which have had a great influence and will soon be published in book form,[4] a book whose preface he has asked me to write.

However, I have not told you the most extraordinary thing. Norman Cousins has been appointed professor at the Los Angeles Medical School!

Well, of course, that's the United States!

That's the United States. That's what gives the United States its great superiority—not the level of knowledge of its research workers, but simply this phenomenal ability to experiment with things that are not understood. Everything is tried—constantly!

You have cited experiments with acupuncture and hypnosis. It seems, according to a recent survey that a third of the French population have had recourse to unorthodox, marginal forms of treatment, as if there were some kind of disillusionment with the powers of conventioned medicine. How do you interpret this phenomenon?

The figures are exactly the same in the United States. Sixty-five per cent of Americans say that they are very discontented with orthodox medicine. But, and this "but" is essential—95% of them say they are very satisfied with their own doctor. This leads me to formulate a hypothesis concerning the true role of the doctor. Of course it consists in giving appropriate treatment but also, to a large extent, in mobilizing, in you, in your body, all the natural mechanisms that protect it against disease or cure it. And this is based essentially on relations of trust: the simple fact of seeing the doctor, the way in which he listens and gives advice have, in this connexion, a considerable and very individual effect: the same doctor can succeed with one and fail with another. For, in fact, what the patient is seeking is to be relieved not only of the burden of the disease but also of the responsibility of having to care for himself. This transfer of responsibility from the patient to the doctor is an important element of treatment.

That is why I have a very reserved attitude towards the innumerable self-help groups that have sprung up in the USA: associations of alcoholics, fat people, diabetics, heart patients, blood pressure cases, etc.—all these groups in which people suffering from the same complaint seek to give themselves mutual treatment while doing without a doctor.

In giving these examples of acupuncture and hypnosis and stressing the need to learn how to mobilize the immense resources of the body, I perceive, in a not too distant future (perhaps this is an illusion) a reconciliation between the two types of medicine: conventional and unorthodox medicine, whose mechanisms of action we are not yet able to explain.

The doctor you describe, one who listens to you, knows you and takes his time, is the old family doctor who is tending to disappear and be replaced by the specialist, with whom relations cannot be the same, since he practises a medicine that is directed much more to the disease than to the patient.

You are absolutely right. But what I have noticed in the USA is that while 90% of medical students still wanted to become specialists five years ago, nowadays 75% of those who take up medicine do so with the idea of becoming general practitioners. Moreover, medical schools are appearing that give training only in internal medicine. This is a spectacular change. I do not want to make a dogma out of my conviction, but I know that the great medical successes of the past, in times when the facilities available to medical practice were still rudimentary, were due to the personality of great doctors who knew how to make maximum use of the recuperative powers of the human body and to mobilize all its potential.

This is very striking in the case of Osler, for example. He was of course the most learned doctor of his time, but as soon as he entered a ward something happened: he immediately generated an atmosphere of hope and many cures were achieved at the Johns Hopkins Medical School. He said that people believed in Saint Johns Hopkins as in the past they had

[4] Cousins, N. *The anatomy of an illness.* Norton (in press).

believed in Saint Aesculapius in Greek temples. His case is not unique, and many great physicians have noted this phenomenon without being able to explain it.

The staggering increase in health expenses is leading some people to think that medicine will be obliged to move in the direction of computerized self-surveillance. Very sophisticated instruments will make it possible for everyone, through the intermediary of a computer, to keep a check on his health, reach a diagnosis and prescribe a treatment. Is this a possible future?

An eminent New York professor of medicine has published a book[5] in which he explains—and he is quite right—that a computer is able to reach a diagnosis and prescribe treatment just as well as the average doctor can. But not as well as a very good doctor can. In the USA there are even computer psychoanalysts who have had some success. But here I must protest. I may be mistaken, but I feel that most of the ills from which people suffer are not curable ones. They are ills which prevent them from functioning as they would like in their environment and in their occupations.

I can give you two examples. My former head of department, Dr Avery, suffered from Basedow's disease which did not prevent him—while taking the necessary precautions—from leading a normal life. And then, about 1937, a discovery was made, the sulfonamides, which seemed to render obsolete the work our laboratory had been carrying on for years. He had the feeling that he had wasted his life. His illness entered an acute phase and he fell seriously ill. He recovered his health only when our laboratory tackled another problem and he succeeded there where others had failed. I doubt whether a computer could master all the subtleties of a case like that one.

Another example: in the United States the problem of overnutrition, of excessive eating, is a very worrying one. In the past six months two big symposia have been organized on this subject. I was asked, although I am not a specialist on these problems, to give the closing address. This was quite simply because I have the reputation of always bringing the human factor back into all medical problems.

You are someone who asks questions!

In order to ask questions well one must look around and not cling obstinately to certainties. As the American humorist Josh Billings said a long time ago: "It's better to know nothing than to know what ain't so." I have myself shown how nutrition problems can be viewed from a new angle—and viewed very scientifically at that. All the specialists present knew of a very famous article on fat metabolism published in 1924 by an American professor called Gage, who was the first to observe the existence in the blood after a meal of small fat particles which are called chylomicrons. But none of the specialists had remarked that he had also noted, in himself and others, that the speed with which these chylomicrons disappeared could be considerably slowed down by mental and emotional factors. He found, for example, that when he had to give a lecture after a meal, then, instead of disappearing in an hour, these particles persisted for several hours. In other words, the fats were digested very differently according to whether the meal was consumed in agreeable or tense circumstances.

Everyone is vaguely aware that there is some relationship between emotions and metabolism, but we now have the means to explore these phenomena scientifically. I have no doubt that this is the path of the future and that it will lead to a medical revolution.

This would amount to rethinking the whole medical environment. And everything still remains to be done there?

I should like the great research institutes and medical schools to agree to consider this problem as an essential aspect of medicine. But this is a pious wish. I have lived long enough to be sceptical in this respect. It is impossible to transform an institution. If we wish to do something new we must create a new institution and get it functioning. At the end of the last century, when the part played by microbes was demonstrated, there was no medical institution anywhere in the world that knew how to attack this problem, that was *able* to attack it, or that *wanted* to attack it. It

[5] Maxmen, J. S. *The post physician era: medicine in the twenty-first century.* New York, Wiley, 1976.

was necessary to establish the Pasteur Institute in Paris, the Koch Institute in Berlin, the Paul-Ehrlich Institute in Frankfurt, the Lister Institute in London, the Kitasato Institute in Japan, and the Haffkine in India. That was, moreover, the conviction of President Roosevelt, who always used to say that if you have a problem to solve you should set up an institution to tackle it but that when the problem was solved you should have the courage to dissolve the institution.

For you, man is inseparable from his environment. What are the great dangers threatening him today? What worries you most?

It will surprise you, but my greatest worry is unemployment among young people. This is not in any way for ecomomic reasons; the rich countries have sufficient resources at their disposal to compensate the unemployed and make up any lack of wages. But when I hear American economists state that in the interests of the smooth running of the economy 5–6% unemployment must be accepted, then I am dumbfounded. This means that we must accept that 5–6% of individuals play no part in society. Now, humans only really become human beings by performing some function in society and holding some place in it to which they attach a certain value.

In other words, you are making a desperate effort to be optimistic?

Strangely enough I have become much more optimistic during the last four or five years because—for the first time, I believe, in the course of their history—human beings are starting to learn how to anticipate future dangers. And in a few cases, they are learning how to change their behaviour. There is much talk of the energy crisis. In reality, there is not as yet any energy crisis. We are projecting ourselves into the future so as to anticipate it and are searching at the present stage for solutions. To imagine the problems of the year 2000 as if they were already here and to try to overcome them—that shows that many consider foresight to be a necessity. This is an immense advance which makes me fairly optimistic about the future. □

Self-treatment—a part of medicine

There are people who consider medicine whatever the physician does. He who is not a physician is a layman and what he does cannot be considered medicine. This is a very narrow interpretation and one that certainly does not hold true in historical studies.... The great majority of the cases of illnesses ... even today, are never seen by a physician. They are treated by the patient himself or by his relatives. And this self-treatment may be according to principles of the scientific medicine of the time. It may be dictated by commercial interests, by advertisements, or it may be folk medicine pure and simple.... The scope of medicine is so broad that it includes, under any circumstances, infinitely more than the physician's actions.

— Henry E. Sigerist, *A history of medicine*, New York, Oxford University Press, 1951.