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THE UNREASONABLE MAN

Second PAHO/WHO
Lecture on the
Biomedical Sciences

ABEL WOLMAN



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THE UNREASONABLE MAN

Dr. Abel Wolman

Second in the series of PAHO/WHO Lectures on the Biomedical Sciences, delivered at the Headquarters of the Pan American Health Organization, in Washington, D.C., on 13 June 1967

*With an introduction by Dr. Abraham Horwitz,
Director of the Pan American Sanitary Bureau*



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INTRODUCTION

Presentation at the Second PAHO/WHO Lecture on the Biomedical Sciences, 13 June 1967, in Washington, D.C.

Dr. Abraham Horwitz
Director, Pan American Sanitary Bureau

Some years ago I had the pleasure of introducing Doctor Abel Wolman to the Chilean Association of Public Health. In describing what was relevant to my mind in his personality, I stated that he belonged to those very few who added decorum and dignity to everything they did. I was at that time, as I am today, under the image of the marvel of his teachings at the Johns Hopkins University in a subject that seemed to me somehow remote, preoccupied as I was with the wonders of the internal harmony of human nature.

Since then we have been privileged with his advice and guidance in the same subject that has acquired, through his endeavors, a vivid reality in terms of the harmony of the outside world. He has revealed to us an appreciation of the earth as a close ecological system and how to deal with the problems of the environment, taking into account that they are tightly interwoven and permanently influencing man and other living beings.

This innate sense of universality in thinking and performance excels, to our mind, in the personality of Doctor Wolman. Although directly preoccupied with the complexities of the physical environment, he has analyzed them beyond the immediate, trying to penetrate

into the essence of the factors involved and to define the total dimension of each problem and its consequences, always with a humanitarian purpose. In the Special Session on Environmental Determinants of Community Well-Being, held during the Third Meeting of the PAHO Advisory Committee on Medical Research, after taking refuge in Hippocrates, he stated: "In the course of time and with the advance of science and technology, this emphasis on the airs, the waters and the places has advanced to the philosophic concept of 'holism' of General Smuts and the constellation of causes of disease of Doctor Dubos. The environment of man, embodying the biological, physical, chemical, and social components of his world, thus confronts us as a primary part of the ecosystem only partially envisaged, it is true, by Hippocrates and others."¹

With this philosophical outlook he has enlightened and delighted his students for more than three decades at the Johns Hopkins University.

He has honored his profession and placed it in its proper context in the intellectual and scientific community of the world.

He has counseled governments throughout the world, guided them for decision-making with accurate knowledge of political, social, and cultural implications, and in such service he has demonstrated that he is a public health statesman of the first order.

He has written extensively with wit and elegance, and with a penetrating style that shows the depth of his thinking and the breadth of his experience. Even the obvious, but nevertheless basic, acquires special relevance through his expressions. In referring to water, during the Technical Discussions at the Seventeenth World Health Assembly, he said: "One may wonder why it is necessary and desirable to rehearse, in the middle of the twentieth century, the virtues and necessities of community water service. Armies have fought over water, people have died from it, and civilizations have dwindled after losing it, health workers have blessed it and monarchs and priests have worshipped it."²

¹ *Environmental Determinants of Community Well-Being*. Scientific Publication PAHO 123, 1965, p. 1.

² WHO document A17/Technical Discussions/4 (6 March 1964), p. 1.

The titles of his writings are at times as provocative as the content of them is transcendent. We will mention only *The Metabolism of Cities*, in which Doctor Wolman draws an analogy between the complexities of the external world and those of the human condition; also *Hippocrates Revisited*, the latter being the 1966 Hilleboe Prize Lectureship. But above all remains the essence of his spirit, for he is a real humanitarian who has devoted his life to the well-being of man. He has been called the friend of the thirsty, a synthesis that reveals his true nature.

Once again he will render service to our Organization as the speaker of this Second Lecture. His subject, "The Unreasonable Man," will be, as usual, stimulating and provocative. It will be the continuation of the admirable dialogue started by Doctor René Dubos in analyzing, in the First Lecture, "Man and His Environment—Biomedical Knowledge and Social Action."³ The resulting applause and response from individuals and from the professions, from universities and from students, show the wide acclaim, the influence and the contributions of the thoughts and expressions of Doctor Dubos. We are certain of the same response to the lecture tonight.

Many times Doctor Wolman has commented that the environment of the world is in an idealistic balance—undisturbed and unimpaired, a veritable "Garden of Eden." The environmental difficulties—as he puts it—"stem from man himself." Although unreasonable, through the penetrating analysis of our distinguished speaker, all of us will see objectivity and rationality with regard to the problems that besiege us today; we shall be able to think anew as our imagination will be stimulated by his insight.

In listening to Doctor Wolman tonight, this beautiful reflection of Braque will come alive: "Reality only reveals itself when it is illuminated by a ray of poetry. All around us is asleep."

³ Published as *Scientific Publication PAHO 131*, 1966.

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THE UNREASONABLE MAN

Dr. Abel Wolman
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and Water Resources
The Johns Hopkins University
Baltimore, Maryland, U.S.A.

The perceptive scientific lecture by René Dubos in 1965 provides the foundation or underpinning for my discussion this evening. Dr. Dubos placed in perspective the duality of man's nature, and the fact that "medically speaking, man is in general more the product of his environment than of his genetic endowment." This reminder of the significance of "nurture," even though not overriding the gifts and restraints of man's natural linkage with his past, gives pertinence to our present-day concern with the environment.

The central question for those engaged in health activities is whether the promise of science and technology in general, and of biomedical advances in particular, has been fulfilled to the benefit of society. Has the quality of our environment been so adjusted in the past twenty-five years as to lift man increasingly above or beyond its hazards? While we accept the conclusion that "social action must be guided by biomedical wisdom," the unreasonable man still presses the perennial question as to how far we have gone to soften the lot of the common man vis-à-vis his environment. Tonight I shall make the rash attempt to present such an assessment in world-wide terms and in particular relation to Latin America. This attempt is not only a consequence of the first lecture in this series, but of the fact that for

many decades my own professional interest has been in the environmental determinants of health, comfort, and safety. The stock-taking here undertaken, although good for the soul, runs the risk of disclosing much ground for the charges an unreasonable man may make against the sanguine scientist. Has "social engineering" succeeded, even modestly, in transferring the abundant fruits of modern science and technology to society, by guarding the friendly and softening the hostile environment?

The Promised Land

The literate man from Mars, on his recent visit to the earth, would obviously be impressed, and no little confused, by the flood of enthusiastic literature, television, official and unofficial reports on the promises held out for man by the atom, the exploration of space, DNA and RNA. This promised millenium has recently been paraphrased by a science writer, aided and abetted by our finest of scientific workers, in the following heroic terms:

"About 33 years from now—the year 2000—a mother may project her day like this: using a household computer, she may see what's available in the supermarket on videophone, order, press a button to check her bank account, scan entertainment prospect, then plot out her day and evening.

"If her children are small, she may monitor them by closed circuit household TV; metal tags might be sewn into their clothes, visible as radar blips on her kitchen receiver, so she could trace the children's movements from bedroom to bath, from cellar to yard, like belling a cat. If it's a hot day, her junior cyclist might stay cool with his head encased in an aircooled plastic helmet.

"She might drive downtown in a fumeless car, park, recharge her car batteries, and feed the meter before entering the store. While shopping, she might pick up a paper shift or two, at \$2 or so, to wear that evening, and dispose of the next day. On returning home, before dinner, she might perhaps refresh herself in a sauna, the luxurious Finnish bath, which will likely be a household commonplace.

"In her automatic kitchen, the pre-programmed cooker-freezer would have taken the items she chose out of the freezer, transferred

them to the cooker, and prepared the dinner to a turn. It is even possible that while she was out, a mechanical robot might have done the laundry and sweeping.

“By 2000, we may live in a junkless world. All waste materials will be processed by giant nuclear reactors, and reused. Elections across the globe could be determined by ‘pushbutton plebiscite’; there will be highspeed feedback of public reactions, gauged by electronics, computers, satellites, and devices still undreamed of. Temperatures should be more controllable, locally, and world weather-changing capabilities will be mustered to make some swamps and jungles livable, certain deserts bloom. Weekends abroad will be commonplace, as hypersonic transport will reduce the New York-London flight time to half an hour.

“Due to knowledge of the body’s molecular chemistry and to expertise on cell mechanism and genes, we may be then able to control heredity and aging, to reverse tumor growth, to produce cell differentiation that leads to the regrowth of limbs and organs—what is called ‘spare parts medicine.’ A completely artificial heart will be able to operate in the chest cavity, with power furnished by the heat of radioisotopes.”

Aside from the question of whether this prospect is beautiful or horrible, it does and will comfort society with such interesting challenges as to: who will play God or just demi-gods, when will these gifts filter down to the unreasonable men whose expectations have often been raised but never fulfilled, and are future hopes sufficient substitutes for present wants? In the last twenty years, we have indulged in many official, international games of overpromise—with the inevitable letdown in spirit when promises are unmatched by fulfillment. The temptation of all of us in this remarkable age of scientific progress is to view the future of man from Mt. Olympus, while too often assiduously averting the eyes from the valleys of tears and sorrow.

In order to avoid prompt recrimination, let it be said that these remarks are not intended to revive the fruitless discussion as to the conflict between science and the humanities—a conflict which to me is non-existent. The scientist behaves much as other men, has family, children—some good, some “delinquent”—joys, sorrows, and hu-

manistic instincts! His expressed interest in social values is great, but as a citizen and not as a professional scientist. The posture was perhaps well expressed by the late Dr. Oppenheimer in these terms: "Scientists are not delinquents; our work has changed the conditions under which men live, but the use made of those changes is the problem of governments, not of scientists." This disavowal may be broader than is justified, but it is consonant with the view attributed, perhaps apocryphally, to Dr. Einstein. He was asked why, in a world in which physics had made such phenomenal progress, our understanding of politics was so limited. He replied that politics was more complicated than physics! With this epitome of our problem, let us now take a look at the real world and its relation to the promised land.

The Real World of Today

Even a superficial look at the environment of the world of today discloses the incredible variety and complexity of human experience. Someone has recently and aptly called this "the sloppy richness of life." Major diversities are promptly so visible as to warrant classifying this globe grossly into at least two worlds—the West and virtually the rest of the earth. In the West, one billion people live in an urban, industrialized society, generally freed from most communicable diseases and now confronted with a deteriorating environment because of its own developed activities. In the second, two billion people struggle with poverty, malnutrition, primitive environmental facilities or none, and the consequent familiar communicable diseases of at least a half century ago. Latin American countries perhaps fall somewhere between these two worlds.

In some important respects, the over-simplified dichotomy here described is not completely accurate. Within only a mile from this building, and matched by similar enclaves in every developed country, hundreds of thousands of people still live in an environment more accurately classified as "underdeveloped" than "developed."

What are the environmental realities in these worlds? And what are the health and disease features which are at least discernible as a result of delayed adjustments and of deferred facilities and services? Because of the tremendous backlog of unmet needs of the areas most deficient in all environmental adjustments, our concern is primarily

with rate of change rather than with absolute numbers of correctives. In spite of significant downward trends in some communicable diseases in some parts of the underdeveloped world, environmental-borne and -associated diseases still remain among the leading causes of disability and death. Statistical records are unfortunately scarce, specific definitions of disease entities still leave something to be desired, and debates as to whether aims at eradication are utopian still proceed. In the present context, these considerations are of great philosophical interest, but for our practical purposes may be set aside temporarily. The obvious disease disabilities are so wide and deep in extent that refinements of attitudes and policies might well be deferred for a while. In the meantime, scientific knowledge and technological tools have long been sufficiently abundant to enable governments to proceed apace with the modifications of the environment upon which the tens of millions of people wait with amazing patience and even docility!

Are we moving forward on this environmental front and, if so, at a reasonable gait? Regrettably, the answer is flatly "No." Our literature outruns our accomplishments. We become the victims of slogans of "the decade of development," of "the rising expectations," of the "alliance for progress." The gap between promise and fulfillment is tremendously wide. As one observer has recently remarked: "Even with the deepest-hued of rose-colored glasses, it is impossible not to see that this program is in serious trouble."

The constituents of environmental determinants of health are many—the service of water, the handling of wastes, the provision of shelter, food, hospitals, medical service, and of other health functions normal to modern society. Unfortunately, simple indices of accomplishment are not at hand. Inventories of progress are similarly scarce. Some of these constituents have been assessed at intervals of five to ten years by the U.S. Agency for International Development, by the World Health Organization, and by the Pan American Health Organization. These studies have been centered primarily upon water supply, wastes, drainage, housing, and food. Without burdening the audience with statistical evidence flowing from these reviews, it may be stated that, with some important exceptions, the rate of improvement in these categories is dismal. In too many instances, it is clear that millions of people are tacitly promised a lesser millenium than the one noted before, in approximately a century from now—if then!

One example may suffice in Latin America in the effort at fulfillment of the hopes of the Charter of Punta del Este of 1961. By 1971, the goal of community water service promised in 1961 for urban populations will probably be well met. The corresponding goal for providing rural populations with water will fall seriously short of that promise. With respect to housing hopes, the result is incredibly poor. These and other deficiencies in rate of change are more than matched everywhere in Asia, India, Africa, and in the Near and Middle East. One can only describe the prospect as gloomy. How does it come about that knowledge of "what and how to do" is not in any way matched by more prompt accomplishment? Certainly, one need not wait upon more science and more technology, except in the neglected area of the biologic effects of environmental deterioration. The origins of lethargy, hopelessness, and failure in "social transfer" cannot be laid at the door of inadequate science or technology. What then are our blocks to more rapid progress?

Needed: Supersonic Transport of Ideas and Accomplishments

While we pride ourselves on the prospect of supersonic transport of men and materials and on our superb space exploration, we have not been successful in equivalent transport of ideas, methods, and accomplishments in the improvement of the quality of the environment. International conferences all result in agreement that there is an unfortunate time lag between knowledge and application. All the conferees bemoan the delayed social transfer. Each views the solution in terms of his own professional myopia—whether economist, sociologist, anthropologist, physician, nurse, or engineer. All look for interdisciplinary approach, wholeness of purpose, logic in long-term planning for needs, goals and evaluation. Most of the agencies, however, while keeping an eye on the year 2000, are beset by the plagues of 1967 and 1968. Regardless of what the geographic setting may be, public articulate demand runs ahead of official restitution—and only sometimes of scientific understanding.

We are persistently told that these delays may be resolved only by patient indulgence in long-range planning, by gently adjusting the cultural clocks, by an end run around the economic restraint, by softening the religious restrictions, and by moving the whole development army forward under the flag of "cumulative social causation." Thus, as with the Olympian posture of scientist-technologist, people

are offered deferred hope in place of water, shelter or food! And yet, as Dr. Shannon once put it, "in face of this conflict, society demands that biomedical enterprise in the aggregate be a socially purposeful one."

Is there an escape from these profound philosophical restraints? In over-simplification, experience gives at least some major examples of where such restraints have in fact been reduced both in time and in force. In most of these successes a return to an earthiness of approach appears to be the primary characteristic. This has been accompanied by the introduction of innovation and imagination in changing concept and methodology, without in any way doing violence to Dr. Hornig's dictum that "the public has come to accept the argument that progress flows from basic science and that material and social benefits in the future derive from the most abstract investigations of today." The dictum provides ample "elbow room" within which to maneuver in public and private activity as of today, because it does not vitiate the corresponding verity recently noted by Mr. Milbank: "... apply to society the knowledge which we now possess in demography, health, and medicine"

Without losing sight of the grand plans, some persistent workers have gone forward with diligence in pursuit of Governor Muñoz's political realism of "you move a little here, then you move a little here, and then you move a little here." As a guide, this is matched by the equally practical reminder by David Lilienthal that "you know, some one has to move the dirt." It is true, of course, that, in all this, patience becomes a virtue. The concern of the unreasonable man is that in many confrontations, patience has become a vice!

Abundant evidence is at hand to demonstrate that "the main obstacles to the control of enteric infections remain, in developing countries, the lack of adequate environmental sanitation and, in areas that have the facilities, a casual attitude toward their use, often accompanied by the employment of euphemisms such as 'gastric flu' to imply that nobody has been guilty of lack of hygiene." Dr. Dubos goes even further, in his PAHO lecture, in his charge that: "There are indications indeed that general dietary improvement, better practices of infant feeding and handling, and simply an abundant supply of water, would be a far more effective, and less costly approach to

the control of many intestinal disorders, than are prophylaxis and treatment with drugs and vaccines.”

What then stands in the way of meeting these and associated problems of the environment? Speeding-up of correctives, in general, waits upon motivation, management, money, and manpower. The order of importance of these varies with each country, in fact, within the regions of the same country. Governments often give only lip service to change, which the people are already motivated to initiate. Management implies the provision of new institutional structures or improvement in existing ones. Examples of success in this field are by no means rare in Latin America. Money, contrary to the axiom that it is the root of all evil, is also the root of much good. The universal assumption that money is never available is fallacious. The ingenious development of sources of money, where people are motivated to pay, has increasing demonstrations in Latin America.

Professional manpower is always at a premium. The status will probably remain so as long as each profession possessively clings to its own specifications, avoids adjusting academic criteria and practice to country needs, and views all manpower requirements elsewhere through the screen of western principles and practices. Some may even contend that perhaps the greatest block to progress in most countries is in the lack of professional manpower and in the frozen attitude toward the rapid corrections of this deficiency.

Real advances on all four of these fronts are apparent in Latin America during the past ten years—not too long a time, if the progress is sufficiently visible. There is reason to believe that, with the examples now at hand, at least in some of the areas of environmental change, a greater rate of advancement may be expected in the next decade. Undoubtedly, this pace might be even further accelerated if, as many have pointed out, medical and engineering schools and research institutes paid even token attention to the emerging biological effects of environmental factors. Some symptoms of progress in this area are also visible in Latin America.

For the long future, one cannot escape the reality that slow progress is a natural reflection of the fact that the task of development, in the field of which we speak, is beset by its very size, complexity and difficulty. Changes of heroic nature still remain to be hurdled in the

whole fabric of these societies. While we must not wait upon complete political and social conversions in order to move forward more than perceptibly, it is well to record certain of the fundamental restraints under which all societies labor. For reasons of convenience, most international health and banking agencies have been predisposed to deal more or less exclusively with central governments. This has resulted in over-reliance on the direct activities of central governments, already burdened by multiple competitive responsibilities and all too frequently short of revenue. Of greater importance, however, has been the failure both to recognize the potential of and to activate the latent energies and resources so often found locally. This is not to say that the central government leadership and stimulation should not be at their strongest. The nature of the problems with which we deal and the direct implementation of their solutions, however, are most often at the local levels. If we add to these principles the realities of inadequate administrative devices too closely tied to central government, we pyramid the difficulties of local accomplishment. Regardless of ideology, virtually every country has learned the hard way, that administrative stimulation of change and institutional continuance of such a change, once it has been started, is contingent upon local participation, acceptance, and responsibility.

Summary

As the unreasonable man, say in India, Africa, or South America, I have taken the position that the promised land of modern science and technology has been overpromised to the common man. His lot still remains abject, sad, and almost hopeless in too great a part of our globe. Recognizing that scientific and technologic progress will inevitably afford a better world to all, it is too far distant to satisfy the urban and rural dweller in developing, and in pockets of most developed, countries.

The scientific and technologic resources are already available in rich amounts to convert the environment from a hostile one to a beneficent ally. The conversion has been dismally slow. We should not accept the present rate of change with fatalistic patience. Nor need we wait upon the emergence of all theoretical answers before militant, and perhaps fumbling, steps of improvement are insisted upon. Orthodoxy of approach must give way to innovation, not the least of which must be in the postures of professional leaders them-

selves. Fortunately, increasing evidence is emerging in many countries that change, per se, is not suspect. One can point to fundamental and successful re-directions of policy, method, and institution.

One hundred and thirty-five years ago, Asiatic cholera was devastating England. William Brooke O'Shaughnessy then presented his findings on fluid therapy, for the sufferers from this disease, to the Central Board of Health in London. His brilliant monograph on the basis and value of this therapy appeared in *The Lancet* in May of 1832. For over a century the thesis was lost and only in the last few years has it been revived and applied on the stubborn recrudescence of cholera!

This same Dr. O'Shaughnessy, educated in medicine at Edinburgh, moved to London. He was not permitted to practice medicine within seven miles of the city for want of a license from the Royal College of Physicians.

At this late date, the very familiarity of these episodes should warn us that history repeats itself, and that we must learn to capture its lessons rather than repeat its errors.

In essence, therefore, I close my remarks, as I opened them, by borrowing again from Dr. Dubos' lecture. His last line, paraphrasing Camus, reads: "To believe in the human condition might be regarded as the attitude of a fool, but to despair of it is the act of a coward."

The Man from La Mancha voiced the same theme for the friends and workers in the environment:

"To dream the impossible . . .
"To fight the unbeatable foe . . .
"To reach the unreachable stars."