Some Reflections on "Medical Science"

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*Most people would die sooner than think; in fact, they do so.*Bertrand Russell

The term "Medical Science" is commonly used and to most people it properly belongs in the following list:

Biochemistry *Physics*
Astronomy *Chemistry*

Medical Science As an engineer, I am an applied scientist. As an individual who contracted a deleterious physiological problem, the existence of which, as an identifiable entity, is denied by the major manifestation of "Medical Science" called "Modern Medicine", I have thought at great length on the question, What is "Medical Science"? The following is the result of that process.

Let us examine just what science is. Science must be broken into its two parts based on its two functions. Pure science is the art of observing nature and attempting to understand the process or processes involved to the lowest level required to allow the prediction of that observed nature. Applied science is the art of using the predictive results of pure science to design and build machines or processes for the benefit or destruction of mankind.

Since not all fields of pure science are equal in their level of predictive knowledge, a further division or classification of the sciences is required. Those sciences that are highly developed are called hard sciences. Physics and chemistry are considered hard sciences. Biochemistry, the youngest of all major sciences, is a soft science. It is a soft science because the amount of observed nature that can be explained by existing knowledge is very small compared to the number of questions that have resulted from observed nature, and the number of questions yet unasked is very large compared to the number of questions asked. Astronomy is an interesting departure from the usual concept of science in that although some information useful to man falls out of it, it is primarily studied "Because itis there". No one will ever attempt to design a universe! Astronomy is a philosophical science. Medical science is interesting in that it is not a science at all!

Another area of human endeavor must be examined and considered like a science because its objects and the objects of a pure science are similar. This area is called philosophy. Philosophy is the art of attempting to understand observed human nature and its mental needs.

The pure sciences of physics and chemistry have given us such applied sciences as electrical and mechanical engineering.

Astronomy will never produce an applied science beyond, perhaps, telling us how to divert the course of an asteroid to keep it from hitting us! I in no way mean to belittle the importance of such an application of the science of astronomy. Biochemistry, when it becomes sufficiently advanced, will spawn an applied science. It will be called medicine.

That great social philosopher and master of the literary form, the essay, Lewis Thomas M.D. said it well. "We have been hoaxed along by...substitutes for technology right up to the present. There is no question about our good intentions in this matter: we all hanker, collectively, to become applied scientists as soon as we can, overnight if possible." (Thomas, 1975). It is not likely that medical science will become applied science even in a hundred years. The pure science of philosophy has spawned more applied sciences during the tenure of man on earth than any other pure science will ever spawn. These applied sciences are called religions. These are applications of the obser vations of philosophy designed to propel mankind through all the vicissitudes of life from birth to death in a sane and, hopefully, optimistic mental state. A short list of some better known examples of philosophy's applied sciences is as follows:

Christianity *Buddhism*
Judaism *Hinduism*
Islam *Medical Science*

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Over the long history of these philosophical applied sciences, there have been divisions of thought that have resulted in schisms or the breaking down of one central philosophy into several related subphilosophies.

Medical science is currently undergoing a major schismatic process. The two major contenders for the title are called modern medicine and Orthomolecular medicine.

Modern medicine is the conservative established approach to medical science. Its dogma is a carefully thought out, consistent set of concepts that has served the test of time quite well. It is so well thought out and consistent that the questioning of the "truth" of just one matter of dogma reverberates throughout the entire paradigm. Orthomolecular medicine is a young and feisty schism that is certain it has discerned in new developments in the pure science of biochemistry, ideas that will blast modern medicine clear out of the water!

Let us examine the dogma of modern medicine from the perspective of new concepts developing in the science of biochemistry. The single root, basic, dogma of modern medicine appears to be the "Scientific Method". It is upon this rock that all modern medical philosophical structures are built. The "Scientific Method" as interpreted by modern medicine requires that a cause and effect relationship be established with a statistical probability of error of less than five percent. This interpretation constrains modern medicine to linear processes. This interpretation immediately makes this engineer suspicious. Scientists and engineers know that nature is very nonlinear. Linearity is an approximation that has definite limits of application. Any philosophy that uses the "Scientific Method" in this context is immediately suspect. To this scientist, the "Scientific Method" in this context is a scientific abomination! Built upon this rock are other aspects of modern medicine. For example, the "science" of nosology. This "science" attempts to classify diseases according to a set of ideas that assumes linearity. A complete classification of a disease would include information under the following headings:

Etiology Pathology Symptoms and Signs
Diagnosis
Prognosis and (hopefully) Treatment

If there are "cracks" in the integrity of the "Scientific Method", one would expect them to occasionally be discerned. In fact, such "cracks" appear and are apparently disregarded! There is an international body of doctors whose efforts are toward generating internationally acceptable definitions for different diseases. To date, only four or five diseases have definitions that are internationally acceptable! Apparently, the "science" of nosology has "cracks". In the issue of the *New England Journal of Medicine*, Vol. 313, Number 17, 1985, there are two articles on the treatment of women with estrogens. The article out of Harvard Medical School demonstrates that the treatment of women with estrogens prevents heart attacks. The article out of the Framingham Heart Study demonstrates that the treatment of women with estrogens causes heart attacks! The editors of the Journal recognized the contradiction and had the intellectual integrity to publish them both side by side with an editorial comment that they had to publish them both because they were "equally valid"! This appears to be more than a "crack"! This is more like a chasm!

Now let us examine the dogma of Orthomolecular medicine. The Orthomolecular approach to medical science derives from observations of several generations of practicing doctors and research scientists. These observations on the usage of natural materials such as essential nutrients and enzymes as ingested or injected supplements in the treatment of disease were strong enough to cause ideas of cause and effect to occur to the observers. These observations were often difficult or impossible to prove according to the ruling concept of the "Scientific Method" because the effects were either too subtle or the effects were different with different people. This class of data was vilified as "anecdotal" and "most unscientific" by modern medicine. This class of data is, however, exactly what one would expect if the underlying phenomenon were nonlinear and predictable. Out of these generations of observers of anecdotal data has emerged a philosophy characterized by the key word "Prevention". This, too, would be a concept that could be expected to arise from this anecdotal data provided the underlying phenomenon is non-

linear and predictable. This is not to suggest that modern medicine is not interested in preventing disease! They most certainly are, if the method of prevention can be verified by their "Scientific Method". However, the staid workaday philosophy of modern medicine is, I feel, best characterized in a statement made to me by the chief intern of a large hospital. He said, "Doctors are trained to diagnose and treat disease. You come to me, give me your symptoms and I will make a diagnosis and write a prescription." The battle cry of the Orthomolecular schismatic, "Prevention", is likely the sensing of the existence of a higher order of phenomenon that is not yet fully understood.

The Orthomolecular schismatics have lately been whooping it up over a phenomenon that they sense is likely the underlying process. This phenomenon is nonlinear and predictable. It is loosely defined as oxidative stress or free radical processes. While the processes are predictable and analytic, the effects are not. The effects are dependent upon an individual's genetic strengths and weaknesses! This is the area of my own research efforts. I call my work The Biodynamics of Environmentally Induced Accelerated Aging. In this work I have attempted to deduce the biochemical "nuts and bolts" of this phenomenon. I have documented my work in "A Unified Theory of Chemical Hypersensitivity" published in *The Journal of Orthomolecular Psychiatry*, Volume 13, Number 1, pp 6-9, and Part II of the same title, as yet unpublished.

The free radical processes are operative at the level above the starting point of modern medicine, that is, nosology and diagnosis-and treatment. Once these processes are adequately defined, the operative level of treatment will be that of "Prevention". The diseases involved will likely range from cancer to stroke to MS to arthritis. That is, virtually all or all degenerative processes.

In the conduct of science by man, one concept prevails and that is the intellectual integrity of the workers. In science *Truth* always wins! I see a day when we will be able to say, modern medicine is dead, long live modern medicine!

The above essay highlights one point. We have a lot to learn. That one point has two divisions. The first is the universal acceptance of current knowledge based on observed nature. The second is that we have an awful lot of basic biochemical research to do. This is the class of basic research that is very difficult to fund because the point of it is so obscure to the lay person. Examples of this class of research regularly win a "Golden Fleece" award from that idiot! The major bone of contention between modern medicine ("we") and Orthomolecular medicine ("they"), to me, is that nonlinear set of phenomena that "they" call Environmental Illness (EI.) As a victim of EI, I discovered that although the signs and symbols of modern medicine were all about me, when I tried to touch and use it, I found it had all the ethereal characteristics of a fog bank.

Modern medical doctors are men whose intellectual integrity is intact. They are merely misinformed and cannot see that. If they were to deduce that there may be an error in their thinking, their intellectual integrity would compel them to try to "Catch Up" and learn as much about this problem as they can as quickly as they can. If I were in this position, I would first learn as much as I could from "their" literature and how "they" treat it. I would also conduct a world search for information.

His name is Robert McLellan M.D. of Yale University Medical School. He has been advertising for EI victims for some time. He treats them using the Stephen A. Levine, Ph.D. magic Orthomolecular system. Part of this project is a six month around the world tour that was to include six weeks in Bhopal, India to learn what he could about the large group of "instant" EI victims that are there. This is, indeed, a good omen and a harbinger of the ultimate merging of the "we" and" "they" into "us"!

A short history of EI points up what was likely the confusion that caused the "we" and "they" split in the first place and why it has taken modern medicine so long to get wise to the problem. From the writings of Hippocrates 2,400 years ago one can discern some of the observed nature of food allergy of the masked variety that is part of the EI syndrome! This knowledge became lost in the interim and did not begin to be rediscovered until the 1890's. By 1925, considerable effort was being expended in the area of EI. In 1925, some European doctors came to the

United States with the immune system theory of allergy. They convinced the American immunological community that this was the wave of the future, that as the sensitivity of measurement systems improved, all environmental reactions known as allergies would be shown to be included in this theory. In 1925, Dr. Arthur Cocoa was considered the Dean of American Immunology. In 1926 he was considered one of "them". All of his practice was concerned with EI. His patients' problems did not conform to the new theory at the time and as sensitivity of measurements improved, never did. While these problems were immune system responses, they were a different response than the one covered by the new theory. Dr. Cocoa could be considered to be the grandfather of Clinical Ecology. Dr. Theron G. Randolph picked up the food aspects of EI and added observations of the chemical aspects of EI. Dr. Randolph is likely the finest clinical observer since Hippocrates. He is considered to be the father of Clinical Ecology. Clinical Ecology is the study of all aspects of EI. The "we" and "they" polarization became rigid. Some "we" doctors refuse to see patients who have gone to one of "them" for help. "They" cannot get their research published in the now censored peer review journals of modern medicine. Their isolation was complete. The ignoring of one aspect of disease could be expected to result in a great piling up of sick people that modern medicine found that they could not help. This was prevented by the timely, but utterly disastrous ideas of Dr. Sigmund Freud. To a victim of EI, the concept of talk and tranquilizers is lethal! EI involves the production of a physical reaction to an ever increasing set of xenobiotics (xenobiotic = drug = toxic substance). The Freudian treatment could be expected to accelerate the progress of EI. Since tranquilizers' side effects are investigated only with regard to "normal" people, the effect on people with EI would not be observed. Since tranquilizers function in the brain, the side effects of this treatment could be expected to cause symptoms of mental illness to arise in EI victims. The modern medical psychiatrist could only conclude that it is time for the heavy artillery, the heroic xenobiotics that are only safe to use in a patient when he is under constant supervision available in a sanatorium. The predictable result of this treatment would be continuous physical and mental deterioration that ends in an agonizing death. It is but a small step, where linearity is presumed, that what always ends as a severe mental problem must have been one in the first place, thus vindicating the treatment!

This process handles the social requirement for modern medicine to prevent the pile up of untreatable sick people, but only at a tremendous cost to society. EI is merely the acceleration of normal aging as a result of exposure to xenobiotics. That the effects of drugs on the aging process is beginning to be recognized is indicated by the following with respect to steroids.

The widespread, virtually unrestricted use of steroids by all human age groups includes oral contraceptives, post menopausal steroid replacements, antiinflammatory steroids, and anabolic agents. The above examples of adverse effects from chronic steroid exposure would not have been revealed by conventional screening protocols for drug side-effects and should alert us to the possibility of major drug side-effects and interactions with aging processes which could have enormous consequences to disease risk and longevity. (Finch) From the same volume can be seen further recognition of the problem.

Over the past ten years it has become increasingly obvious that the elderly respond differently to drugs. Thus, the adverse drug-reaction rate is higher and increases as a function of age...The main brunt of adverse reaction falls on the elderly. (O'Malley, K., Kelly, J.G.) The recognition of the effects of xenobiotics in nature at a level above that of nosology and diagnosis and treatment will require major changes in the conduct of medical research and treatment.

With the end of the "we", "they" schism possibly in sight, there is still the "big" problem. The "big" problem is that medical science is still in the "dark ages". Most peoples' response to this is absolute denial followed by a long list of new medical procedures to fix people. Balderdash! Repair by replacement is the stuff of auto mechanics. Medical science of the future should be a science of "Prevention" not diagnosis and repair. Unfortunately the distance in time and effort from here to there is very great. It

is so great that a coherent plan to get there is impossible to formulate. A philosophical approach can be outlined. And so, if I may, I will play the social philosopher.

It has been concluded that the great pyramids of Egypt are likely less the products of a massive ego and more an early form of what we had in the United States during the Great Depression, called the Work Projects Administration. When the Nile flooded the farmers fields, they provided work for these farmers, who were paid out of the Eharoah's treasury which in turn was derived from the same farmers when they had something to tax. In short, the pyramids were an economic handle on the economy of the region that could be used to smooth out the annual economic ups and downs created by the flood.

As a young engineer during the Missile-Gap-Crisis, I was part of and watched the growth of the great Military-Industrial-Complex. For both the United States and Russia, this complex has become to our leaders what the pyramids were to the Pharaohs, an all pervasive handle on the economy of these nations. There are often suggestions that money be taken from these programs and used for the benefit of mankind. Social programs are the usual suggested use for this money. These governments just cannot do this. The social disruption that would occur cannot be permitted. Not only would Ph.D.s be converted into bodies picking up garbage or the like, but the corner grocery where they used to shop would also feel the change. To stop the complex would cause economic ruin! The complex cannot be stopped, but, perhaps its products can be shifted from devices that are buried in the ground and watched very carefully for 30 years to be sure that they do not commit any strange or unnatural acts, to products whose use can be used to further the aims of mankind.

Carl Sagan tells us that as the spaceship earth hurtles through the void, we are likely to get near enough to something in another 12 to 13 million years that will shake loose a bunch of comets from the Oort cloud. That these comets will come screaming down and some will crash into the planet earth and cause another in the cyclic reoccurrence of Great Dyings. Most peoples' reaction to this news is profound horror! Here, I think we have an extension of the most basic aim of all life, survival of the individual, into survival of kind. Who alive today should care what happens 12 to 13 million years from now? But we do!! I doubt if anyone on earth would argue with the statement that the first priority of the individual is maximum personal survival and that the first priority of society is the maximum survival of kind!

Both of these priorities are dependent upon just two sciences. These two sciences are Biochemistry and what has become known as the Earth Sciences. Biochemistry is the study of the chemistry of life at the atomic and molecular level. The earth sciences are those that study the bio-ecological systems in nature that control and maintain the earth's environment in a manner conducive to the continuation of life. It is not an accident that these sciences are the softest of all the sciences. They are the softest simply because the quality of knowledge required in each science is so vast, and the methods of obtaining that knowledge so complex, that all the other sciences had to become highly developed to create the machinery necessary for the observations of nature required to deduce the desired knowledge! It is significant that the highly sophisticated technology developed by the Military-Industrial-Complex is precisely the technology that can be redirected into the study of biochemistry and the earth sciences with only minor disruption of the function of the complex and the trickle down effects on the economics of these nations. I believe the workers in the complex would be delighted by the challenge presented by this redirection! As an ex-member of the complex, I know I would have been!

What then, is the obstacle in the way of implementing this shift of priorities. The obstacle is, I believe, the deep religious gut feeling in virtually everybody, that everything is all right. That when they get sick their doctors will know precisely what to do to allow them to regain their health. That if their all powerful doctor cannot do this, then it is the result of a higher power, God! Shades of Dr. Pangloss!!! Your own personal maximum survival is between you and the research biochemists of the world!! For you to believe this is to recognize that you and yours are in real danger!! The universal reaction that I receive from people to this concept is one of

deep religious denial! The kind of denial that one would expect from a devout Christian when faced with absolute proof that Christ was mortal!!! It is with malice aforethought that I have systematically trampled roughshod over the foundations of your deep seated religious medical convictions! All in the hope that you can see beyond this folly and to demand recognition of your own and society's best interests. The two basic priorities of survival will only be fulfilled when we learn enough that medicine and the prediction of the future of the environment on a day to day and millennium to millennium basis, are true applied sciences! Until then, doctors and society can only struggle along in their efforts to fulfill our requirements, inept through lack of knowledge.

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