The conquest of the AIDS virus: a three-point strategy

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The following article is an abridged version of a longer paper prepared by Dr. Grauerholz as a basic primer on AIDS.

Acquired Immune Deficiency Syndrome, or AIDS, represents the most serious threat to the survival of the human race and the most immediate, barring outbreak of generalized thermonuclear war, whose survivors will, in any case, be mopped up by AIDS. As with the potential for thermonuclear war, the AIDS epidemic is very much a product of the present economic and cultural collapse of civilization, and, especially in the Western countries, represents the fulfillment of a cultural death-wish become virulent over the past 20 years.

We are engaged in a war to the death with a virus which, whatever its origins, seems almost fiendishly designed to exploit all our weaknesses, not only biological, but also economic, epistemological, and political. To formulate a strategy to conquer this disease—and we must be absolutely clear that conquest, and not peaceful coexistence, is our aim—it is necessary to understand the nature of this virus in particular, and of epidemic disease in general.

What 'causes' AIDS

To begin with, infection with the Human Immunodeficiency Virus (HIV), by itself, does not cause AIDS. By itself, HIV infection causes an acute viral syndrome, characterized by fever, sore throat, muscle aches, and a transient rash. This illness is associated with elevated levels of cell-free virus (*viremia*), and virus product (*antigenemia*), in the bloodstream, and is followed by development of antibodies to the virus (*seroconversion*) shortly thereafter. This is essentially similar to influenza; or most other acute viral illnesses, and it is not unreasonable to assume that the individual is more contagious during the acute infection.

HIV infection also causes a primary degeneration of the brain and central nervous system, which can occur in the absence of any symptoms of immune depression. Cases have been reported of HIV-infected individuals who died of brain degeneration without ever developing any of the infections or tumors characteristically associated with the Acquired Immune Deficiency Syndrome. This appears to be a long-incubation disease with a 10-20 year or longer course.

In addition, HIV can also cause a primary infection of the lungs, known as chronic lymphocytic interstitial pneumonitis (CLIP), and the virus has been isolated from the bronchial fluid of such patients. Since the virus produces a primary lung infection, and is present in the bronchial secretions, respiratory transmission is certainly possible, especially when we consider the case of a laboratory worker who apparently was infected by inhaling virus.

Returning to the acute viral syndrome, once the antibody response has occurred, the virus is apparently cleared from the bloodstream. The body produces antibodies to a number of different components of the virus, including the external envelope *glycoproteins* (combinations of carbohydrates, or sugars, and protein) and the inner protein capsule, which surrounds the genetic material and enzymes of the virus. Clearance from the bloodstream appears to be caused by antibodies to the inner protein capsule of the virus, rather than by the antibodies to the outer envelope.

Once the cell-free virus has been cleared from the bloodstream, the remaining virus is present within the white blood cells, primarily in cells known as *monocyte-macrophages*. If these cells express virus products (*antigen*) on their surfaces, then the circulating antibodies will bind to this antigen and the cell will be destroyed by a process known as *antibody dependent cell cytotoxicity*. Such cells are then eliminated as potential sources of future virus production. The problem is that some cells which carry virus do not express the virus, and thereby evade destruction by the immune system. These cells may then migrate out of the bloodstream into areas that are not readily accessible to the immune system, such as the brain and skin.

In such latently infected individuals, the virus may remain inactive for years. Since there is little cell-free virus in the bloodstream, infection can only occur by transmission of infected cells to another person, as in transfusion of blood. As a result of retrospective studies on banked serum, it is now known that some individuals have been infected with this virus for 10 years without becoming ill. By contrast, people who have received transfusions from those infected have developed AIDS, and died.

The question of the asymptomatic carrier

To restate the case, following the acute viral syndrome, the infected person is both seropositive—possesses antibodies to the virus—and asymptomatic—has no clinical evi-

dence of disease related to his or her infection. Such an asymptomatic carrier is relatively, but not totally, non-infectious, but has acquired a permanent change in the genetic potential of some of their cells which, at a future point, can render the person more infectious and can lead to the development of clinical brain degeneration and/or lung infection and/or immune deficiency, and ultimately death.

Whether this asymptomatic carrier will develop an Acquired Immune Deficiency Syndrome (AIDS) depends on the presence of other conditions, known as *co-factors*. These co-factors are primarily of the form of conditions which weaken the immune system and/or stimulate active expression of previously latent, cell-associated HIV infection. Such conditions could include malnutrition, still the leading cause of immune depression worldwide, and other infections which stimulate the immune system in general, as well as specifically activate the expression of previously latent *provirus DNA*. Provirus DNA is the form in which the genetic material of the AIDS virus integrates itself into the genetic material of the infected cell and thus becomes a lifetime part of the genetic potential of the cell.

AIDS is similar in this way to cancer, in that an acquired change in genetic potential of the cell expresses itself in a change in the surface of the cell, the so-called tumor antigens, and a change in biological behavior of the cell. In the case of cancer, this behavioral change consists of abnormal growth manifesting itself as a tumor, such as cancer of the colon or lung, or in the overproduction of immature, nonfunctional cells, as in the case of leukemia. As with AIDS, the altered genetic potential or transformation by itself is not sufficient to cause the development of a cancer, but requires both co-factors, known as *promoters*, and a breakdown in the immune surveillance mechanisms by which the body detects and destroys altered cells, just as it destroys HIV-infected cells that express virus products (antigens) on their surfaces.

Once the latent HIV virus is activated by the co-factors, virus and virus products (antigens) are produced in large quantity, leading to destruction of immune system cells—specifically the T4 lymphocytes, which play a key role in coordinating immune defense against tumors and certain infections—by two different mechanisms. The first of these mechanisms is a direct *cytopathic* (cell-killing) effect as a result of reproduction of the virus in infected cells. The second, and probably more significant, mechanism is an immunopathic effect in which the immune system literally self-destructs.

In the case where immune system cells self-destruct—the *immunopathic* situation—virus antigens are "tricked" into binding to and then killing uninfected immune system cells which have certain "marker molecules" (the CD-4 molecule) on their surfaces, even though the cells in question contain no virus or virus genetic material!

Then, the circulating antibodies to the virus antigen bind to the material on the cell surface and mark the cell for destruction by a process known as "antibody dependent cell cytotoxicity." This process, in the early stage of the infection, eliminated infected cells, as part of the body's immune reaction to the virus. Now, this same mechanism destroys uninfected cells that happen to be coated with the virus antigen, even though they contain no active or latent virus.

Public health: first line of defense

The strategically significant point is that at least one major consequence of HIV infection, the Acquired Immune Deficiency Syndrome (AIDS), requires factors other than HIV infection in order to develop. Insofar as we possess no antiviral drug capable of eliminating the virus once it has established itself in a person, and insofar as AIDS is essentially 100% fatal once frank AIDS develops, in spite of treatment, our approach must be: to prevent transmission to uninfected persons and to prevent the onset of symptomatic AIDS in the infected person. Therefore, the first part of any competent strategy to conquer AIDS must be a public health program of widespread testing to determine who is infected, and hence at risk of developing AIDS or transmitting the virus to uninfected individuals.

One of the major arguments advanced against widespread testing is the lie that we have nothing to offer the infected individual. Even if this were true, the implicit premise is that it is acceptable to simply allow this infection to continue to spread, unchecked, throughout the society; nonetheless, the quarantine of plague victims did very little for them, but it did protect the uninfected. Furthermore, while many persons infected with HIV may wish to continue to engage in activities that both spread the infection and place them in danger of developing active disease, there are other infected persons who would alter their activities if they were aware of their situation.

In fact, the role of co-factors in the development of AIDS indicates that there is indeed something which we can offer the infected individual. That is to say, that there are alterations that both the infected individual and society can make which can significantly prolong the symptom-free period in such persons, and, at present, we have a much better chance of significantly postponing the onset of disease than we have of treating it once it occurs. To do this, however, we must know who is infected, and what the status of their infection is. The present policy against testing is a policy of allowing people to become infected, and to live in circumstances and engage in activities which activate the infection; the policy then becomes to hustle them off to a hospice to die.

This is the context in which the concept of traditional public health quarantine, along the lines of the "phased" Chicago model program for checking the spread of tuberculosis, must be understood. Not only does the HIV-infected person represent a potential source of HIV transmission to others, but other people also may be a source for transmission of other infections to the HIV-infected person, which can activate the latent infection and initiate the onset of fatal immune deficiency. A classic situation is the HIV-infected

child in a school setting. At least one case of transmission of HIV from a transfusion-infected three-year-old boy to his six-year-old brother has already been documented. Anyone who says that HIV cannot be transmitted in the course of normal childhood interaction is simply wrong, unless they wish to postulate that a sick three-year-old boy anally penetrated his older brother and ejaculated semen, or that the two children were, unknown to their parents, sharing intravenous-drug needles. Simply put, homebound instruction for children who have potentially infectious diseases or are at risk of infection from other children, is a well-established procedure.

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When all the rubbish about psychic distress is put aside, the bottom line is money, or more correctly the lack of it: It is the unwillingness to expend funds on these unfortunate children, in the insistence that there will be no cure, which is behind the policy of putting them and their classmates at risk and allowing nature to take its course.

Again, what is overlooked in the anti-public health measures argument is the cost of not initiating a program of widespread testing and appropriate use of quarantine measures. We are looking, conservatively, at an estimated 4-5 million persons, some of them newborn children, but most of them young and middle-aged adults, who are infected with this virus in the United States, and tens of millions in underdeveloped countries. We cannot afford to allow these people to progress to active disease without making interventions which may delay the onset of disease, just as with the battle against tuberculosis, where the goal was not only prevention of disease transmission, but also improvement in the health of the infected person. As with any other infectious disease, healthy, well-nourished persons control HIV infection better than unhealthy persons exposed to other diseases and environmental stresses, as exemplified in Belle Glade, Florida, where the disease shows a short, fulminating course to death.

Economic breakdown and disease spread

The current relevance of this can be seen in New York City, whose population was just under 9 million persons in 1960. In 1980, with the destruction of infrastructure by Felix Rohatyn's Municipal Assistance Corporation, which stripped the assets of the city to service its public debt, the population was barely over 6 million. Consequently, an epidemic of tuberculosis that broke out among the ghetto population is still under way. By 1986, the population had declined to a little over 5 million and, according to Health Commissioner Dr. Steven Joseph, at least 500,000—10% of the population—are infected with the AIDS virus, a level comparable to central African countries such as Uganda, which some experts predict will cease to exist by the end of the century.

In the case of the 14th-century Black Death, the fundamental dynamic underlying the collapse of Europe was the usurious interest rates charged by the Lombard banks to the feudal estates. To service this debt, the feudal aristocracy was compelled to extract so much of the product of the serfs that not enough remained to enable the laboring population to reproduce itself. As a result, the rural population deserted the land and moved into the cities where lack of infrastructure investment caused conditions of crowding, malnutrition, and poor sanitation and guaranteed the most rapid proliferation of the first communicable disease which came along.

The same policies today are producing the same consequences. As the rural economies of developing sector nations collapse, the rural populations are leaving the countryside and crowding into and around urban centers. In Africa and Ibero-America, this is taking the form of so-called "marginal zones" surrounding major cities, consisting of slums with a higher population density than the city itself, totally lacking basic sanitation and health infrastructure. An epidemic of disease unleashed in these areas would essentially "implode" the contained urban area, under conditions of infrastructure collapse. AIDS would spread quite rapidly in such zones, while the marginal zone then serves as a reservoir to infect the entire city.

Far more lives are threatened by biological holocaust than even by a full-scale thermonuclear war. Even without AIDS, the environmental conditions created by current economic policies, both in the developing and "advanced" sectors, would lead to outbreaks of epidemic disease, causing severe social disruption and enhancing the already ongoing economic collapse. As long as such conditions persist, even were a complete cure for HIV infection developed, it is highly unlikely that it would have any significant impact on the problem: We possess curative treatments for tuberculosis, malaria, and syphilis, all of which are presently increasing worldwide.

Crash research effort

The third part of our strategy must be a massive Apollo-style research program into the fundamental biology of the life process. If we view *mitosis,* the process of cell division characteristic of all higher organisms, as the fundamental negentropic process of the biosphere, we see that the entropic effects of the AIDS virus are most pronounced in relation to that process. Expression of latent HIV infection occurs when infected cells are stimulated to undergo mitosis. Aberrations in mitosis are also at the root of the other major entropic biological processes—cancer and aging; loss of mitotic capacity is characteristic of aging cells, whereas abnormal mitosis is characteristic of cancer cells. Thus a fuller understanding of the phenomenon of mitosis is essential to understanding and overcoming AIDS, cancer, and aging.

The problem with current research is that there are too few resources are being focused too narrowly. Leaving aside the money wasted on miseducation and pseudo-sciences, such as sociology and psychology, the hard scientific research is focused on molecular biological approaches to a vaccine and cure. The problem is, as some of the better molecular biologists will admit, that within the constraints of molecular biology, both a vaccine and a cure may be impossible, because the field itself, which is based on the statistical chemistry of non-living processes, is intrinsically incapable of comprehending the nature of the living process, which it views as statistically improbable.

Without a fundamental understanding of the life process, the path described above will not be difficult, but impossible. Such understanding will not come from the bit-by-bit accumulations of reductionist molecular biology with its transcriptions, translations, and transpositions, and its computer tape model of DNA. This is the approach that has led us to the point, where we can know the entire sequence of nucleotides in the genetic material of the AIDS virus, but really don't know how it causes disease in a living human being.

But, conveniently for CDC bureaucrats and the World Health Organization, this approach allows them to deny the existence of non-sexual, non-needle-transmitted AIDS, in spite of the existence of documented cases, and to deny the relevance of co-factors in the development of the disease. As long as this denial exists, the approach enables genocidal organizations such as the World Bank and International Monetary Fund to pursue economic policies that inevitably create the conditions for the outbreak of pandemic diseases. Finally, it has created an epistemological cul-de-sac, from which biological science must escape if it is going to deal with the crisis of AIDS and the longer-term issues of cancer and aging.

Optical biophysics

The way out of the cul-de-sac is through the application of an approach known as *optical biophysics* to the study of the living process, particularly to the unique processes of cell growth known as mitosis and *meiosis*. It is these harmonically ordered processes which define living matter, and not the simple aggregate of biochemical reactions occurring in a cell.

To understand the issue, one simply has to answer the question, "What is the biochemical difference between a living cell and one that has just died?" One can say, "Well, different chemical reactions are occurring in the two different cells." But, in fact, all the individual chemical reactions characteristic of living cells can be carried out in non-living systems of cell fragments. So what determines that the reactions characteristic of living matter will occur, as opposed to those characteristic of non-living, or dying matter?

The answer appears to lie in the study of the optical and electromagnetic properties of living cells. This represents a Pasteurian optical biophysics approach, which promises to reveal the most fundamental secrets of living processes. Approximately 10 million cells are dying in the human body every second, and with a few exceptions, they are "normally" replaced within that same second. Genetic information theories, hormones, enzymes, and nerve impulse signals are all too slow to coordinate such a turnover. Only bioradiation phenomena are quick enough to "tune" such a living orchestra.

Since research work in optical biophysics has not been in the mainstream of Western programs, the scientists who have gone in this direction have had to resist a tremendous amount of peer pressure. Their work has been without adequate funding and institutional backing, especially since the United States deliberately downgraded biophysics in 1968, in the context of the biological warfare protocols negotiated by Henry Kissinger. Not surprisingly, this has been an area of intensive research in the Soviet Union.

The appropriate American response to this challenge is typified by the Apollo Program of President John F. Kennedy, which mobilized the nation to a great commitment and created the climate of cultural optimism of the early 1960s. America's unique strength is its capacity to undertake such great tasks of technologic mobilization and succeed. This is why Lyndon H. LaRouche, and the National Democratic Policy Committee, have called for the implementation of a Biological SDI, which would create a multidisciplinary scientific mobilization to apply the most advanced technologies of biophysics to AIDS in particular, and to the life process in general.

Absent such a program combined with a real economic recovery, public health measures alone will not stop the disease, and any time they do buy us will be wasted. This program will require billions of dollars to implement, but, like the Apollo Program did, will repay the investment more than tenfold, and reestablish our cultural commitment to growth and development, and provide our only hope of ultimately stopping the AIDS pandemic. If we persist in the present economics and culture of stagnation and decay, then the AIDS virus and many other infectious organisms, will prevail over us.