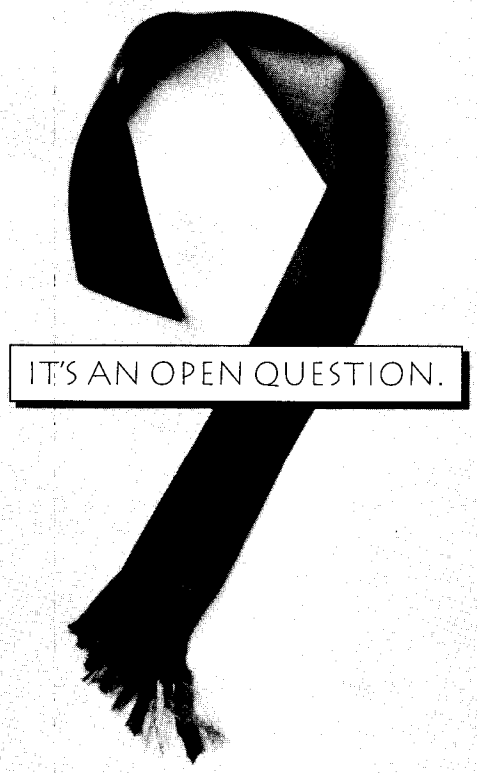
WHAT CAUSES AIDS?



By Charles A. Thomas Jr., Kary B. Mullis, and Phillip E. Johnson

Most Americans believe they know what causes AIDS. For a decade, scientists, government officials, physicians, journalists, public-service ads, TV shows, and movies have told them that AIDS is caused by a retrovirus called HIV. This virus supposedly infects and kills the "T-cells" of the immune system, leading to an inevitably fatal immune deficiency after an asymptomatic period that averages 10 years or so. Most Americans do not know—because there has been a virtual media blackout on the subject—about a longstanding scientific controversy over the cause of AIDS, a controversy that has become increasingly heated as the official theory's predictions have turned out to be wrong.

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Leading biochemical scientists, including University of California at Berkeley retrovirus expert Peter Duesberg and Nobel Prize winner Walter Gilbert, have been warning for years that there is no proof that HIV causes AIDS. The warnings were met first with silence, then with ridicule and contempt. In 1990, for example, *Nature* published a rare response from the HIV establishment, as represented by Robin A. Weiss of the Institute of Cancer Research in London and Harold W. Jaffe of the U.S. Centers for Disease Control. Weiss and Jaffe compared the doubters to people who think that bad air causes malaria. "We have...been told," they wrote, "that the human immunodeficiency virus (HIV) originates from outer space, or as a genetically engineered virus for germ warfare which was tested in prisoners and spread from them. Peter H. Duesberg's proposition that HIV is not the cause of AIDS at all is, to our minds, equally absurd." Viewers of ABC's 1993 *Day One* special on the cause of AIDS—almost the only occasion on which network television has covered the controversy—saw Robert Gallo, the leading exponent of the HIV theory, stomp away from the microphone in a rage when asked to respond to the views of Gilbert and Duesberg.

Such displays of rage and ridicule are familiar to those who question the HIV theory of AIDS. Ever since 1984, when Gallo announced the discovery of what the newspapers call "HIV, the virus that causes AIDS," at a government press conference, the HIV theory has been the basis of all scientific work on AIDS. If the theory is mistaken, billions of dollars have been wasted—and immense harm has been done to persons who have tested positive for antibodies to HIV and therefore have been told to expect an early and painful death. The furious reactions to the suggestion that a colossal mistake may have been made are not surprising, given that the credibility of the biomedical establishment is at stake. It is time to think about the unthinkable, however, because there are at least three reasons for doubting the official theory that HIV causes AIDS.

HIV RESEARCHERS ARE STILL UNABLE TO EXPLAIN HOW HIV DAMAGES THE IMMUNE SYSTEM, MUCH LESS HOW TO STOP IT. THE PRESENT STALEMATE CONTRASTS DRAMATICALLY WITH THE CONFIDENCE EXPRESSED IN 1984. AT THAT TIME RESEARCHERS THOUGHT THE VIRUS KILLED CELLS DIRECTLY BY INFECTING THEM, AND U.S. GOVERNMENT OFFICIALS PREDICTED A VACCINE WOULD BE AVAILABLE IN TWO YEARS. TEN YEARS LATER NO VACCINE IS IN SIGHT, AND THE CERTAINTY ABOUT HOW THE VIRUS DESTROYS THE IMMUNE SYSTEM HAS DISSOLVED IN CONFUSION.

First, after spending billions of dollars, HIV researchers are still unable to explain how HIV, a conventional retrovirus with a very simple genetic organization, damages the immune system, much less how to stop it. The present stalemate contrasts dramatically with the confidence expressed in 1984. At that time Gallo thought the virus killed cells directly by infecting them, and U.S. government officials predicted a vaccine would be available in two years. Ten years later no vaccine is in sight, and the certainty about how the virus destroys the immune system has dissolved in confusion.

Second, in the absence of any agreement about how HIV causes AIDS, the only evidence that HIV *does* cause AIDS is correlation. The correlation is imperfect at best, however. There are many cases of persons with all the symptoms of AIDS who do not have any HIV infection. There are also many cases of persons who have been infected by HIV for more than a decade and show no signs of illness.

Third, predictions based on the HIV theory have failed spectacularly. AIDS in the United States and Europe has not spread through the general population. Rather, it remains almost entirely confined to the original risk groups, mainly sexually promiscuous gay men and drug abusers. The number of HIV-infected Americans has remained constant for years instead of increasing rapidly as predicted, which suggests that HIV is an old virus that has been with us for centuries without causing an epidemic.

No one disputes what happens in the early stages of HIV infection. As other viruses do, HIV multiplies rapidly, and it sometimes is accompanied by a mild, flu-like illness. At this stage, while the virus is present in great quantity and causing at most mild illness in the ordinary way, it does no observable damage to the immune system. On the contrary, the immune system rallies as it is supposed to do and speedily reduces the virus to negligible levels. Once this happens, the primary infection is over. If HIV does destroy the immune system, it does so years after the immune system has virtually destroyed it. By then the virus typically infects very few of the immune system's T-cells.

Before these facts were well understood, Robert Gallo and his followers insisted that the virus does its damage by directly infecting and killing cells. In his 1991 autobiography, Gallo ridiculed HIV discoverer Luc Montagnier's view that the virus causes AIDS only in the company of as yet undiscovered "co-factors." Gallo argued that "multifactorial is multi-ignorance" and that, because being infected by HIV was "like being hit by a truck," there was no need to look for additional causes or indirect mechanisms of causation.

All that has changed. As Warner C. Greene, a professor of

medicine at the University of California, San Francisco, explained in the September 1993 *Scientific American*, researchers are increasingly abandoning the direct cell-killing theory because HIV does not infect enough cells: "Even in patients in the late stages of HIV infection with very low blood T4 cell counts, the proportion of those cells that are producing HIV is tiny—about one in 40. In the early stages of chronic infection, fewer than one in 10,000 T4 cells in blood are doing so. If the virus were killing the cells just by directly infecting them, it would almost certainly have to infect a much larger fraction at any one time."

Gallo himself is now among those who are desperately looking for possible cofactors and exploring indirect mechanisms of causation. Perhaps the virus somehow causes other cells of the immune system to destroy T-cells or induces the T-cells to destroy themselves. Perhaps HIV can cause immune-system collapse even when it is no long present in the body. As Gallo put it at an AIDS conference last summer: "The molecular mimicry in which HIV imitates components of the immune system sets events into motion that may be able to proceed in the absence of further whole virus."

But researchers have not been able to confirm experimentally any of the increasingly exotic causal mechanisms that are being proposed, and they do not agree about which of the competing explanations is more plausible. When *The New York Times* interviewed the government's head AIDS researcher, Anthony Fauci, in February, reporter Natalie Angier summarized his view as a sort of stew of all the leading possibilities: "It [HIV] overexcites some immune signaling pathways, while eluding the detection of others. And though the main target of the virus appears to be the famed helper T-cells, or CD-4 cells, which it can infiltrate and kill, the virus also ends up stimulating the response of other immune cells so inappropriately that they eventually collapse from overwork or confusion." No other virus is credited with such a dazzling repertoire of destructive skills.

Perhaps it is the HIV scientists who are collapsing from overwork or confusion. The theory is getting ever more complicated, without getting any nearer to a solution. This is a classic sign of a deteriorating scientific paradigm. But as HIV scientists grow ever more confused about how the virus is supposed to be causing AIDS, their refusal to consider the possibility that it may not be the cause is as rigid as ever. On the rare occasions when they answer questions on the subject, they explain that "unassailable epidemiological evidence" has established HIV as the cause of AIDS. In short, they rely on correlation.

THE SEEMINGLY CLOSE CORRELATION BETWEEN AIDS AND HIV IS LARGELY AN ARTIFACT OF THE MISLEADING DEFINITION OF AIDS USED BY THE U.S. CENTERS FOR DISEASE CONTROL. AIDS IS A SYNDROME DEFINED BY THE PRESENCE OF ONE OR MORE OF 30 INDEPENDENT DISEASES—WHEN ACCOMPANIED BY A POSITIVE RESULT ON A TEST THAT DETECTS ANTIBODIES TO HIV. THE SAME DISEASE CONDITIONS ARE NOT DEFINED AS AIDS WHEN THE ANTIBODY TEST IS NEGATIVE. TUBERCULOSIS WITH A POSITIVE ANTIBODY TEST IS AIDS; TUBERCULOSIS WITH A NEGATIVE TEST IS JUST TB.

The seemingly close correlation between AIDS and HIV is largely an artifact of the misleading definition of AIDS used by the U.S. government's Centers for Disease Control. AIDS is a syndrome defined by the presence of one or more of 30 independent diseases—*when accompanied by a positive result on a test that detects antibodies to HIV.* The same disease conditions are not defined as AIDS when the antibody test is negative. Tuberculosis with a positive antibody test is AIDS; tuberculosis with a negative test is just TB.

The skewed definition of AIDS makes a close correlation with HIV inevitable, regardless of the facts. This situation was briefly exposed at the International AIDS Conference in Amsterdam in 1992, when the existence of dozens of suppressed "AIDS without HIV" cases first became publicly known. Instead of considering the obvious implications of these cases for the HIV theory, the authorities at the CDC, who had known about some of the cases for years but had kept the subject under wraps, quickly buried the anomaly by inventing a new disease called ICL (Idiopathic CD4+Lymphocytopenia)—a conveniently forgettable name that means "AIDS without HIV."

There are probably thousands of cases of AIDS without HIV in the United States alone. Peter Duesberg found 4,621 cases recorded in the literature, 1,691 of them in this country. (Such cases tend to disappear from the official statistics because, once it's clear that HIV is absent, the CDC no longer counts them as AIDS.) In a 1993 article published in *Bio/Technology*, Duesberg documented the consistent failure of the CDC to report on the true incidence of positive HIV tests in AIDS cases. The CDC concedes that at least 40,000 "AIDS cases" were diagnosed on the basis of presumptive criteria—that is, without antibody testing, on the basis of diseases such as Kaposi's sarcoma. Yet these diseases can occur without HIV or immune deficiency. Perhaps some of the patients diagnosed as having AIDS would have tested negative, or actually did test negative, for HIV. Physicians and health departments have an incentive to diagnose patients with AIDS symptoms as AIDS cases whenever they can, because the federal government pays the medical expenses of AIDS patients

under the Ryan White Act but not of persons equally sick with the same diseases who test negative for HIV antibodies.

The claimed correlation between HIV and AIDS is flawed at an even more fundamental level, however. Even if the "AIDS test" were administered in every case, the tests are unreliable. Authoritative papers in both *Bio/Technology* (June 1993) and the *Journal of the American Medical Association* (November 27, 1991) have shown that the tests are not standardized and give many "false positives" because they react to substances other than HIV antibodies. Even if that were not the case, the tests at best confirm the presence of antibodies and not the virus itself, much less the virus in an active, replicating state. Antibodies typically mean that the body has fought off a viral infection, and they may persist long after the virus itself has disappeared from the body. Since it is often difficult to find live virus even in the bodies of patients who are dying of AIDS, Gallo and others have to speculate that HIV can cause AIDS even when it is no longer present and only antibodies are left.

Just as there are cases of AIDS without HIV, there are cases of HIV-positive persons who remain healthy for more than a decade and who may never suffer from AIDS. According to Greene's article in *Scientific American*, "It is even possible that some rare strains [of HIV] are benign. Some homosexual men in the U.S. who have been infected with HIV for at least 11 years show as yet no signs of damage to their immune systems. My colleagues...and I are studying these long-term survivors to ascertain whether something unusual about their immune systems explains their response or whether they carry an avirulent strain of the virus."

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The faulty correlation between HIV and AIDS would not disprove the HIV theory if there were strong independent evidence that HIV causes AIDS. As we have seen, however, researchers have been unable to establish a mechanism of causation. Nor have they succeeded in confirming the HIV model by inducing AIDS in animals. Chimps have repeatedly been infected with HIV, but none of them have developed AIDS. In the absence of a mechanism or an animal model, the HIV theory is based only upon a correlation that turns out to be primarily an artifact of the theory itself.

In light of the importance of the correlation argument, it is astonishing that no controlled studies have been done for three of the major risk groups: transfusion recipients, hemophiliacs, and drug abusers. Two ostensibly controlled studies involving men's groups in Vancouver and San Francisco purportedly show that AIDS developed only in the HIV-positive men and never in the "control group" of HIV negatives. These studies were designed not to test the HIV theory but to measure the rate at which HIV-positive gay men develop AIDS. They did not compare otherwise similar persons who differ only in HIV status, did not control effectively for drug use, and did not fully report the incidence of AIDS-defining diseases in the HIV-negative men. The research establishment accepted these studies uncritically because they give the HIV theory some badly needed support. But the main point they supposedly prove has already been thoroughly disproved: AIDS *does* occur in HIV-negative persons.

According to the official theory, HIV is a virus newly introduced into the American population, which has had no opportunity to develop any immunity. It follows that viral infection should spread rapidly, moving from the original risk groups (gays, drug addicts, transfusion recipients) into the general population. This is what the government agencies confidently predicted, and AIDS advertising to this day emphasizes the theme that "everyone is at risk."

The facts are otherwise. AIDS is still confined mainly to the original risk groups, and AIDS patients in the United States are still almost 90-percent male. Health-care workers, who are constantly exposed to blood and bodily fluids of AIDS patients, have no greater risk of contracting AIDS that the population at large. Among millions of health-care workers, the CDC claims only seven or eight (poorly documented) cases of AIDS supposedly developed through occupational exposure. By contrast, the CDC estimates that accidental needle sticks lead to more than 1,500 cases of hepatitis infection each year. Even prostitutes are not at risk for AIDS unless they also use drugs.

Far from threatening the general heterosexual population, AIDS is confined mainly to drug users and gay men in specific urban neighborhoods. According to a 1992 report by the prestigious U.S. National Research Council, "The convergence of evidence shows that the HIV/AIDS epidemic is settling into spatially and socially isolated groups and possibly becoming endemic

within them." This factual picture is so different from what the theory predicts, and so threatening to funding, that the AIDS agencies have virtually ignored the National Research Council report and have continued to preach the fiction that "AIDS does not discriminate."

Not only is AIDS mostly confined to isolated groups in a few U.S. cities, but HIV infection is not increasing. Although a virus newly introduced to a susceptible population should spread rapidly, for several years the CDC has estimated that a steady 1 million Americans are HIV positive. Now it appears that the figure of 1 million is finally about to be revised—downward. According to a story by Lawrence Altman in the March 1 *New York Times*, new statistical studies indicate that only about 700,000 Americans are HIV positive, and the official estimate will accordingly be reduced sometime this summer.

While HIV infection remains steady at this modest level in the United States, World Health Organization officials claim that the same virus is spreading rapidly in Africa and Asia, creating a vast "pandemic" that threatens to infect at least 40 million people by the year 2000, unless billions of dollars are provided for prevention to the organizations sounding the alarm. These worldwide figures, especially from Africa, are used to maintain the thesis that "everyone is at risk" in the United States. Instead of telling Americans that AIDS cases here are almost 90-percent male, authorities say that worldwide the majority of AIDS sufferers are female. With the predictions of a mass epidemic in America and Europe failing so dramatically, AIDS organizations rely on the African figures to vindicate their theory.

But these African figures are extremely soft, based almost entirely on "clinical diagnoses," without even inaccurate HIV testing. What this means in practice is that Africans who die of diseases that have long been common there—especially wasting disease accompanied by diarrhea—are now classified as AIDS victims. Statistics on "African AIDS" are thus extremely manipulable, and witnesses are emerging who say that the epidemic is greatly exaggerated, if it exists at all.

In October 1993, the *Sunday Times of London* reported on interviews with Philippe and Evelyne Krynen, heads of a 230-employee medical relief organization in the Kagera province of Tanzania. The Krynens had first reported on African AIDS in 1989 and at that time were convinced that Kagera in particular was in the grip of a vast epidemic. Subsequent years of medical work in Kagera have changed their minds. They have learned that what they had thought were "AIDS orphans" were merely children left with relatives by parents who had moved away and that HIV-positive and HIV-negative villagers suffer from the same diseases and respond equally well to treatment. Philippe Krynen's verdict: "There is no AIDS. It is something that has been invented. There are no epidemiological grounds for it; it doesn't exist for us."

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Krynen's remark calls attention to the fact that AIDS is not a disease. Rather, it is a syndrome defined by the presence of any of 30 separate and previously known diseases, accompanied by the actual or suspected presence of HIV. The definition has changed over time and is different for Africa (where HIV testing is rare) than for Europe and North America. The official CDC definition of AIDS in the United States was enormously broadened for 1993 in order to distribute more federal AIDS money to sick people, especially women with cervical cancer. As a direct result, AIDS cases more than doubled in 1993. Absent the HIV mystique, there would be no reason to believe that a single factor is causing cervical cancer in women, Kaposi's sarcoma in gay males, and slim disease in Africans.

The HIV paradigm is failing every scientific test. Research based upon it has failed to provide not only a cure or vaccine but even a theoretical explanation for the disease-causing mechanism. Such success as medical science has had with AIDS has come not from the futile attempts to attack HIV with toxic antiviral drugs like AZT but from treating the various AIDS-associated diseases separately. Predictions based on the HIV theory have been falsified or are supported only by dubious statistics based mainly on the theory itself. Yet the HIV establishment continues to insist that nothing is wrong and to use its power to exclude dissenting voices, however eminent in science, from the debate.

Like other leaders of the scientific establishment, *Nature* Editor John Maddox is fiercely protective of the HIV theory. He indignantly rejected a scientific paper making the same points as this article. When Duesberg first argued his case in 1989 in the prestigious *Proceedings of the National Academy of Science*, the editor promised that his paper would be answered by an article defending the orthodox viewpoint. The response never came. The

editors of the leading scientific journals have refused to print even the brief statement of the Group for the Scientific Reappraisal of the HIV/AIDS Hypothesis, which has over 300 members. The statement notes simply that "many biomedical scientists now question this hypothesis" and calls for "a thorough reappraisal of the existing evidence for and against this hypothesis."

Such a reappraisal would include the following elements:

Genuinely controlled epidemiological studies of all the major risk groups: homosexuals, drug users, transfusion recipients, and hemophiliacs. The studies should employ an unbiased definition of AIDS. Too often we have been told that HIV always accompanies AIDS, only to learn that this is so because AIDS without HIV is named something else. The studies should be performed by persons who are committed to investigating the HIV theory rather than defending it. There is reason to suspect that properly controlled studies of transfusion recipients and hemophiliacs in particular will show that the incidence of AIDS-defining diseases is independent of HIV status.

An audit of the CDC statistics to remove HIV bias and thereby allow unprejudiced testing of the critical epidemiological evidence for the theory. Every effort should be made to determine how many AIDS patients were actually tested for antibodies and the testing method that was employed. Because even the most reliable antibody test generates many false-positive results, researchers should try to validate the tests by examining random samples of AIDS patients to determine whether significant amounts of replicating HIV can be found in their bodies. Statistics have been kept as if the purpose were to protect the HIV theory rather than to learn the truth.

Research focusing on the cause of particular diseases rather than the politically defined hodgepodge of diseases we now call AIDS. The cancer-like skin disease called Kaposi's sarcoma (KS) is one of the best-known AIDS-defining conditions, but leading KS and HIV experts Marcus Conant and Robin Weiss now say that dozens of non-HIV KS cases are under study in the United States and that KS is becoming much less frequent in gay male AIDS patients than it formerly was. Conant, Weiss, and other AIDS researchers now frankly attribute KS to an "unknown infectious agent" rather than to HIV, but KS is nonetheless still called AIDS when it occurs in combination with HIV. Duesberg attributes KS in gay males to the use of amyl nitrates (poppers) as a sexual stimulant. His theory is eminently testable, and it ought to be given a fair chance. Another example: Hemophiliacs in the age of AIDS are living longer than they ever did in the past, but they still often die of conditions related to receipt of the blood concentrate called Factor VIII. Research published in *The Lancet* in February confirms earlier reports that symptoms diagnosed as AIDS are best treated by providing a highly purified form of Factor VIII. Researchers should study the role of blood-product impurities in causing disease in hemophiliacs, without the distortion that comes from arbitrarily assuming that HIV is responsible whenever an HIV-positive hemophiliac becomes ill.

A critical re-examination of the statistics for AIDS and HIV in Africa and Asia. Researchers should perform new, controlled studies of representative African populations to test the relationship of confirmed HIV infection to the incidence of AIDS-defining diseases. It will not do to rely upon "presumptive diagnoses" or extrapolations from single antibody tests that are now well known to generate many false positives.

The HIV establishment and its journalist allies have replied to various specific criticisms of the HIV theory without taking them seriously. They have never provided an authoritative paper that undertakes to prove that HIV really is the cause of AIDS—meaning a paper that does not start by assuming the point at issue. The HIV theory was established as fact by Robert Gallo's official press conference in 1984, before any papers were published in American journals. Thereafter, the research agenda was set in concrete, and skeptics were treated as enemies to be ignored or punished. As a result, the self-correcting processes of science have broken down, and journalists have not known how to ask the hard questions. After 10 years of failure, it is time to take a second look. ®

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