

QUESTIONING HIV/AIDS:  
MORALLY REPREHENSIBLE OR SCIENTIFICALLY WARRANTED?

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FOOTNOTE:

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*ABSTRACT*

One expects scientific discourse to be focused dispassionately on substantive issues. Yet doctors, scientists, and others who question whether HIV causes AIDS have been called the moral equivalent of Holocaust deniers; their employers have been urged to dismiss them; laws have been wished by which they could be imprisoned; media have been asked to purge their archives of anything potentially favorable to such doubting.

Evidently those who make these attacks are absolutely convinced that HIV causes AIDS. That raises the question of how much certainty is ever attainable in science, especially over so complex an issue as AIDS. Furthermore, the attackers fail to make a necessary distinction between raising questions and urging action. They have presented a number of flawed arguments, including about the credentials or experience needed to assess evidence. Objectively speaking, both official reports and the peer-reviewed literature afford substantive grounds for doubting that HIV is the necessary and sufficient cause of AIDS and that antiretroviral treatment is unambiguously beneficial.

*INTRODUCTION*

Following the announced discovery in 1984 of HIV as the probable cause of AIDS, this hypothesis soon became the ruling theory--see, for example, *Confronting AIDS*<sup>1</sup>. Doubts about the hypothesis were ignored; for instance, Duesberg's 1989 article<sup>2</sup> has an editorial footnote promising a rejoinder which never came.

For more than two decades, dissenters from HIV = AIDS have published books and articles and maintained a presence on the Internet, but major media have paid little if any attention; thus most people seem unaware that there are any serious doubts about the matter. The media silence was breached briefly in 2000 when President Thabo Mbeki of South Africa convened a group comprising both HIV/AIDS believers and HIV/AIDS skeptics to advise him on the scientific status of the issue. However, the media coverage gave short shrift to the doubters' views by comparison to the believers' Durban Declaration with its 5000 signatures, which asserted that "The evidence that AIDS is caused by HIV-1 or HIV-2 is clear-cut, exhaustive and unambiguous, meeting the highest standards of science. . . . It is unfortunate that a few vocal people deny the evidence. This position will cost countless lives"<sup>3</sup>.

In March 2006, the magazine *Harper's* again brought dissenting views prominently into the public arena through the article, "Out of control", by Celia Farber<sup>4</sup>. This spurred furious rejoinders. A website<sup>5</sup> designed to dispel doubts was set up. Op-ed pieces and non-technical articles continue to reiterate that it is beyond reasonable doubt that HIV causes AIDS, but the just-cited restrained language of the Durban Declaration has been replaced by strident

denunciations, including that public dissent from HIV = AIDS is on a moral par with Holocaust denial. The *New York Times* had an extraordinarily venomous editorial <sup>6</sup> asking, “What is it about South Africa’s devastating AIDS epidemic that President Thabo Mbeki just doesn’t want to understand?” and concluding, “Unless he finally starts listening to sensible advice on AIDS, he will leave a tragic legacy of junk science and unnecessary death”. Similarly unrestrained critiques of doubters have appeared in such a variety of places as Canada’s *Globe & Mail* <sup>7</sup>, *PLoS Medicine* <sup>8</sup>, *Skeptical Inquirer* <sup>9</sup>, and the *London Times* <sup>10</sup>.

### PERSONAL ATTACKS ON THE SKEPTICS

It is widely, perhaps universally recognized that arguments are properly carried on over the substantive matter under contention, and that personal attacks on those who hold other views are not only distasteful but also beside the point, since they do not serve to clarify the matter being argued over. Nevertheless, attacks on persons have become a prime feature of assertions of HIV = AIDS.

Mark Wainberg, Director of the McGill University AIDS Center, has labeled as “irresponsible” those journalists who report on scientists who do not share Wainberg’s certainty that HIV causes AIDS <sup>11</sup>. He has said that those who question the theory should be imprisoned on charges of public endangerment <sup>12</sup>. Together with John P. Moore, Wainberg sought the dismissal of an untenured faculty member who published a book denying that HIV causes AIDS <sup>7</sup>. Wainberg, Moore, and others have urged a second university to bar from contact with medical students a researcher who has offered evidence against an HIV-AIDS connection <sup>13</sup>. In 2004, a documentary about clinical trials of HIV drugs using orphans in New York City as subjects had been shown in Britain <sup>14</sup>; a letter demanding retraction of that program was sent to the British Broadcasting Corporation by a group including Moore, Wainberg, and other self-styled “HIV/AIDS activists” <sup>15</sup>.

Moore is a researcher at Weill Cornell Medical School. In addition to his joint actions with Wainberg, he helped organize the AIDStruth website. Readers of this essay are invited to sample items on that website and to note the lack of substantive discussion and the preponderance of *ad hominem* attacks on so-called “HIV denialists”. Commenting on Celia Farber’s article in *Harper’s*, Moore together with Robert Gallo and several other activists wrote <sup>16</sup>:

intellectual dishonesty is the norm for Farber and other AIDS denialists including David Rasnick, Peter Duesberg, Kary Mullis and Harvey Bialy

...

Analogous to holocaust [sic] denialism, AIDS denialism is an insult to the memory of those who have died of AIDS, as well as to the dignity of their families, friends and survivors. As with Holocaust denialism, AIDS denialism is pseudo-scientific and contradicts an immense body of research.

But in contrast to Holocaust denialism, AIDS denialism directly threatens lives *today* by trying to fool laypeople at risk of HIV not to get tested for the virus or not to practice safer sex. It also tries to fool those who need ARVs not to take them.

...

Farber points out that Mullis discovered the PCR and is a Nobel laureate. What she fails to mention is that he has a wide range of odd beliefs. He does not believe in global warming, but does believe he might have been abducted by aliens and is partial to astrology.

Edwin Cameron, a South African judge, devotes several pages of his memoir to defending the equating of HIV/AIDS deniers with Holocaust denialists, concluding eventually that “I compared Holocaust denialism and AIDS denialism because I believed that the comparison between them was valid and true. And illuminating and important. I still do”<sup>17</sup>.

### ON BEING CERTAIN

The HIV = AIDS believers insist that the mainstream consensus is so overwhelming that dissenters must be wrong. History of science is not kind to this argument. As scientific understanding has advanced, sooner or later the most firmly held mainstream views have been modified, indeed often overturned completely. Near the end of the 19<sup>th</sup> century it was the consensus that all the major discoveries had already been made--just before the Second Scientific Revolution turned on their heads the firmly held beliefs about atoms and much else. Medical science firmly believed that schizophrenia could be cured by infecting the sufferer with malaria (Nobel Prize, 1927) or by cutting out bits of brain (Nobel Prize, 1949) before settling--for the moment?--on drugs. Diseases of the ilk of mad-cow disease were firmly believed to be caused by lentiviruses (Nobel Prize, 1976) until the firm belief became that they are caused not by viruses but by prions (Nobel Prize, 1997). The proper, historically informed questions to ask are, How likely is it that HIV/AIDS theory will be significantly modified at some future time? What is likely to stimulate modification? When is that likely to happen?

Those question could only be addressed properly by the usual procedure in science, substantive to and fro over the evidence by people with disparate views and ideas. As already noted, from the very beginning defenders of the mainstream consensus have steadily declined, indeed specifically refused to engage in substantive discussion<sup>18</sup>:

We will not:

Engage in any public or private debate with AIDS denialists or respond to requests from journalists who overtly support AIDS denialist causes. The reasons are:

1. The debate has been settled: HIV causes AIDS . . . .
2. The information proving the above is already in the peer-reviewed science literature . . . .
- ...
4. Our time is better spent conducting research into HIV/AIDS and/or educating the general public . . . .

Point 1 underscores how extreme are these dogmatists. As to point 2, dissidents continue to ask--so far to no avail--for the *specific literature citations* of publications that supposedly prove that HIV causes AIDS. Respecting point 4, these activists are spending an inordinate amount of time seeking to discredit skeptics. It is laughable, moreover, to describe propaganda that presents a fixed opinion as “educating the general public”, especially inappropriate coming from people connected with universities: the proper aim of education is to stimulate people to think for themselves, the very opposite of indoctrinating them into a firm belief.

Since the dogmatists have several times compared HIV/AIDS doubters with Holocaust deniers, it seems pertinent to recall the words of Jacob Bronowski about “Knowledge and Certainty” in relation to the Holocaust<sup>19</sup>. As Bronowski squats next to a pond at Auschwitz, he scoops from it a handful of ashes and muses:

Into this pond were flushed the ashes of some four million people. And that was not done by gas. It was done by arrogance. It was done by dogma. It was done by ignorance. When people believe that they have absolute

knowledge, with no test in reality, this is how they behave. This is what men do when they aspire to the knowledge of gods.

For unambiguous certainty that HIV causes AIDS, every AIDS patient would have to be HIV-positive. Indeed, the Durban Declaration makes that the first of its assertions: “Patients with acquired immune deficiency syndrome, regardless of where they live, are infected with HIV”<sup>3</sup>. But that assertion is demonstrably false:

First: Kaposi’s sarcoma (KS) with its purple skin-blotches was an icon of AIDS in the early 1980s, striking some 4000 people by 1986, more than 10% of all AIDS cases. Yet many KS patients are HIV-negative<sup>20</sup>, and for some fifteen years it has been believed that KS is caused not by HIV but by human herpes virus 8: “All types of Kaposi’s sarcoma are due to infection with human herpes virus-8 (HHV-8), which is transmitted sexually or via blood or saliva”<sup>21</sup>.

Second: By the early 1990s, many reports had accumulated of clinically diagnosed AIDS patients who were HIV-negative. These cases were shunted aside by sleight of evidence through the invention of a brand-new disease, “idiopathic CD4-T-cell lymphopenia (ICL)”<sup>22-24</sup> -- pathogenic immunodeficiency of unknown cause, which is precisely the same as the definition of AIDS during the several years before the claimed discovery of HIV.

Note, too, that numerous HIV-positive people have remained healthy for upwards of two decades while eschewing treatment. Many have organized in support groups, for example, Alive & Well in Los Angeles and “HEAL” groups in several countries. The mainstream acknowledges that there are some unknown number--but certainly thousands--of HIV-positive people who do not get ill, the so-called “long-term non-progressors” or “elite controllers”<sup>25,26</sup>.

### *FLAWED ARGUMENTS, AND POTS AND KETTLES*

#### **Knowledge and action**

Raising questions about HIV/AIDS is equated with seeking to dissuade people from practicing safe sex. That is a straw man. Perhaps one can find a doubter or two who has recommended unprotected sex, but no instance springs readily to mind and it is far from the general rule. The skeptics differ over many details, agreeing only on the central claim that HIV has never been proven to be the cause of AIDS. That is a factual claim, not advice as to what human beings should or should not do.

#### **Guilt by association of beliefs**

The comments about Mullis’s “odd” beliefs are not only *ad hominem*, they lack any empirical or logical basis. They imply that a person whose views on one topic are widely regarded as odd will therefore have equally odd views on all other matters. Under that criterion, one would dismiss Isaac Newton’s laws of mechanics because Newton spent most of his time and energy on alchemical studies and biblical exegesis.

#### **Causing harm**

Those who so passionately defend HIV/AIDS theory seek to justify their uncivil tactics by appealing to the oft-cited and widely approved exception to freedom of speech, that it does not extend to shouting “Fire” in a crowded theater--perhaps overlooking that the penalty for doing that comes through the courts and not through character assassination. The attackers argue that, since HIV infection is an invariable precursor to deadly AIDS, it is a danger to public health to spread doubts and thereby encourage some HIV-positive people to avoid treatment. But, again, that displays absolute personal certainty, not the objective strength of the evidence.

These vigilantes of HIV/AIDS theory also find themselves in glass houses when they hold forth about the potential harm if laypeople accept the doubters’ views. Tangible risks are associated with antiretroviral treatment. The official “HIV/AIDS Fact Sheet”<sup>27</sup> states that “the use of antiretroviral therapy is now associated with a series of serious side effects and long-term

complications that may have a negative impact on mortality rates. More deaths occurring from liver failure, kidney disease, and cardiovascular complications are being observed in this patient population". The largest study published up to 2006 reported that among patients treated with antiretrovirals, AIDS events occurred earlier<sup>28</sup>; there was indeed "a negative impact on mortality rates": death rates did in fact increase<sup>29</sup>.

The manufacturers' pamphlets for antiretroviral drugs list such side effects as "nausea, vomiting, diarrhoea, rapid and deep breathing, stomach cramp, myalgia and paresthesia"; "lactic acidosis and severe hepatomegaly with steatosis, including fatal cases"; "mitochondrial toxicity"; "rapidly ascending muscular weakness"; "pancreatitis"; "peripheral neuropathy". Farber's article<sup>4</sup> centers on a death caused by a drug being tested for prevention of HIV transmission from mother to child. The BBC documentary<sup>14</sup> describes how orphans were subjects in tests of antiretroviral substances whose side effects can be so painful that many children refused to take the drugs; but they were forced to do so, sometimes via a stomach tube that had been surgically installed for that purpose.

Speaking objectively, any claim of potential harm ought to be based on a risk analysis, comparing the probability--following identification as HIV-positive--of becoming ill, and ill to what degree, with the probability of harm, and how much of it, from antiretroviral treatment. The official guidelines for treatment<sup>30</sup> spell out the risks of deferring treatment as follows:

- the possibility that damage to the immune system, which might otherwise be salvaged by earlier therapy, is irreversible;
- the increased possibility of progression to AIDS; and
- the increased risk for HIV transmission to others during a longer untreated period.

The benefits of deferring treatment are given as follows:

- avoidance of treatment-related negative effects on quality of life and drug-related toxicities;
- preservation of treatment options;
- delay in development of drug resistance if there is incomplete viral suppression;
- more time for the patient to have a greater understanding of treatment demands;
- decreased total time on medication with reduced chance of treatment fatigue; and more time for the development of more potent, less toxic, and better studied combinations of antiretrovirals.

However, no statistics are given, no quantitative guidance for deciding when the benefits might outweigh the risks, or vice versa. Under those circumstances, deferring treatment might well seem the more prudent course.

### **Relevant expertise**

Skeptics are often accused of not being qualified to have an opinion on the matter because they have not themselves engaged in HIV/AIDS research. Thus Moore, Robert Gallo, and several other activists wrote that "Duesberg has almost no track record of published AIDS-related research in credible peer-reviewed journals"<sup>16</sup> and the same point is made by others<sup>8,9</sup>. But it is entirely fallacious to claim that one needs to have done research personally in order to understand it and to build on it: Einstein had done none of the work on the photoelectric effect and Brownian motion for whose interpretation he received a Nobel Prize, for example.

Still, it is plausible that technicalities of retrovirology and molecular biology and so forth are more readily understood by people with credentials in those fields. The thing to note here is that the credentials of HIV/AIDS skeptics are at least equally relevant as those of HIV/AIDS believers. Of 2500 publicly listed "AIDS rethinkers"<sup>31</sup>, about 300 have appropriate scientific

credentials and roughly another 500 have medical degrees. Among the most prominent dissidents, Peter Duesberg's credentials in molecular biology and retrovirology are unquestionable. Kary Mullis received the Nobel Prize for inventing the DNA amplification technique universally applied in studies of DNA, including the "viral load" measurements made in HIV/AIDS work. The above-maligned David Rasnick is a biochemist who has worked on protease inhibitors, one of the components of the "cocktail" antiretrovirals. Harvey Bialy served as editor of *Nature Biotechnology*. By contrast, a sizable proportion of the most strident HIV/AIDS believers lack relevant scientific credentials and might better be described as mainstream groupies than as HIV/AIDS experts. Thus the AIDStruth website lists about a dozen people of whom only half-a-dozen have the title "Dr"; and not all of these represent qualifications in medicine or in biological science<sup>32</sup>.

### ON GETTING PERSONAL

A doubtless unintended side-effect of attacking HIV/AIDS skeptics is that people who were previously unaware of the existence of dissenting views about HIV/AIDS have come to realize that doubts have been raised; thus even a self-styled "science blogger" had never heard of HIV/AIDS dissent<sup>33</sup> before coming across the Smith/Novella piece<sup>8</sup> in *PLoS Medicine*.

Not only are these attacks counterproductive for that reason, they are also likely to bring sympathy to the dissident cause from people not engaged in the HIV/AIDS matter but who recognize the importance of freedom of speech, and, in the particular realm of science, the need for open discussion and skepticism if scientific knowledge is to progress soundly. Furthermore, even HIV/AIDS believers deplore these personal attacks<sup>34</sup>.

### REASONABLE SCIENTIFIC DOUBTS?

Several questions arise obviously when there are personal attacks rather than substantive arguments: Why not just cite the specific scientific articles that contain the proof? That would surely be less emotionally onerous, and certainly less time-consuming, than seeking ways to assassinate characters. Why the fury? Why make personal attacks on people, often respectably credentialed and substantially accomplished, who are mostly not personally known to the attackers and therefore have not been in any way personally offensive to them? The skeptics are just disagreeing over the interpretation of matters of medical science.

The inference seems clear, that personal attacks are made because the doubters raise issues for which HIV/AIDS theory has no answer, for example:

- How does HIV cause loss of CD4 cells?  
It has become acknowledged that HIV does not kill those cells directly, but via some sort of "bystander" mechanism whose actual nature remains to be discovered.
- Epidemics arise when each infected person infects on average more than one other person within a short space of time. However, studies of transmission of the HIV-positive condition have found a very low probability, on the order of 1 per 1000 acts of unprotected intercourse<sup>35</sup>. How could this lead to an epidemic?  
Gonorrhea and syphilis have transmission probabilities hundreds of times greater, yet they have not produced epidemics of the scale attributed to HIV. Gisselquist and colleagues have shown in numerous articles<sup>36-39</sup> that sexual transmission cannot explain the purported extent of AIDS epidemics in Africa and Asia.
- Why does antiretroviral treatment not improve patients' health?  
The largest and most recently published study found that the standard HAART treatment should, if judged by laboratory measures of CD4 counts and viral loads, stave off immunodeficiency. Yet, as noted above, people treated with HAART tend to have

earlier onsets of AIDS-type events<sup>28</sup>, and “a reduction in the median time to AIDS” to only 2 months after beginning therapy as well as “a significant increase in combined AIDS/AIDS-related deaths”<sup>29</sup>.

Already a few years after introduction of the “cocktail” or HAART treatment, increased CD4 counts and lowered viral loads were seen not to provide clinical improvement in a sufficiently large number of instances that an explanation was called for. Rather than question the HIV = AIDS connection, this was said to be a new--not to say highly implausible--phenomenon, “immune restoration disease”, whereby for some strange and unspecified reason, resuscitation of immune function supposedly worsens clinical outcomes<sup>40,41</sup>.

- Why no vaccine?

No vaccine against HIV exists despite continued expressions of hopes stretching back to the vaccine promised, within a couple of years, in 1984. After more than twenty years of effort, there is not even agreement over what biological properties an effective vaccine would have. No one has identified what keeps healthy HIV-positive people healthy<sup>42</sup>.

A significant reason for doubt is the fact that official estimates of HIV and AIDS numbers and rates are not to be relied on. James Chin, epidemiologist for California and later the World Health Organization, has described UNAIDS figures as politically but not substantively correct<sup>43</sup>. News reports in the second half of 2007 confirmed this as estimates of HIV infection in India were reduced from 5.7 to 2.5 million<sup>44</sup>. A book review in the *International Journal of STD and AIDS* acknowledges “major failings of HIV epidemiology during the first quarter century of its existence”<sup>45</sup>.

But well beyond reasons for doubt, there are real grounds for positively denying that HIV causes AIDS:

- KS was a very icon of AIDS in the 1980s, yet (as noted earlier) it occurs in patients diagnosed clinically as suffering from AIDS but who are HIV-negative.
- Again, as mentioned above, HIV-negative AIDS has been explained away as a separate disease, ICL.
- Two decades of data from HIV tests in the USA show that positive HIV-tests do not correlate with AIDS geographically, chronologically, in their relative impact on men and on women, or in their relative impact on black and on white Americans<sup>46</sup>. If two things are not correlated, then one is not the cause of the other.

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#### POTENTIAL CONFLICT OF INTEREST

I am the author of the cited book, *The Origins, Persistence and Failings of HIV/AIDS Theory*, which claims to show that HIV is not the cause of AIDS.

#### REFERENCES

- <sup>1</sup> Institute of Medicine. *Confronting AIDS: Directions for Public Health, Health Care, and Research*. Washington (DC):National Academy Press; 1986.

- <sup>2</sup> Duesberg PH. Human immunodeficiency virus and acquired immunodeficiency syndrome: correlation but not causation. *Proc Natl Acad Science U S A* 1989;86:755-764.
- <sup>3</sup> [www.aidstruth.org/the-durban-declaration.php](http://www.aidstruth.org/the-durban-declaration.php), accessed 22 September 2007.
- <sup>4</sup> Farber C. Out of control: AIDS and the corruption of medical science. *Harper's*, March 2006, 37-52.
- <sup>5</sup> [www.AIDStruth.org](http://www.AIDStruth.org).
- <sup>6</sup> Anon. Firing an AIDS fighter. *New York Times*, 14 August 2007 (posted at AIDStruth.org).
- <sup>7</sup> Wainberg M, Moore J. AIDS and the dangers of denial. *Globe & Mail* (Canada), 4 July 2007 (posted at AIDStruth.org).
- <sup>8</sup> Smith TC, Novella SP. HIV denial in the Internet era. *PLoS Medicine* 21 August 2007; <http://journals.plos.org/plosmedicine/browse.php>; go to August 2007 issue, to article, then see "CONTRIBUTE: Read other responses" for several critical and several supportive comments.
- <sup>9</sup> Natrass N. AIDS: denialism vs. science. *Skeptical Inquirer* 2007;31 (#5, September/October):31-37.
- <sup>10</sup> Smith T. The fanaticism of denial that must be exposed. *Times* (London) 14 September 2007 (posted at AIDStruth.org).
- <sup>11</sup> Anon. Irresponsible reporting. *McGill Reporter*, 21 October 1999, kaleidoscope.
- <sup>12</sup> Seen and heard in two films: Scovill R. *Questioning AIDS in South Africa*, 2000, and *The Other Side of AIDS*, 2004. Both films are available on DVD at [www.theothersideofaids.com](http://www.theothersideofaids.com) and [www.aliveandwell.org](http://www.aliveandwell.org).
- <sup>13</sup> Copies of the relevant e-mails were provided to the present writer by the targeted researcher.
- <sup>14</sup> BBC Two (UK television). Guinea pig kids, 30 November 2004; can be viewed at [www.helpforhiv.com/videos.htm](http://www.helpforhiv.com/videos.htm) (accessed 23 September 2007).
- <sup>15</sup> [www.aidstruth.org/Complete-BBC-complaint.pdf](http://www.aidstruth.org/Complete-BBC-complaint.pdf).
- <sup>16</sup> [www.aegis.org/files/tac/2006/errorsinfarberarticle.html](http://www.aegis.org/files/tac/2006/errorsinfarberarticle.html), accessed 2 April 2006.
- <sup>17</sup> Cameron E. *Witness to AIDS*. London: I. B. Tauris; 2005, p. 148.
- <sup>18</sup> [www.aidstruth.org/answering-aids-denialists.php](http://www.aidstruth.org/answering-aids-denialists.php), accessed 22 September 2007.
- <sup>19</sup> Bronowski J. *The Ascent of Man*. Boston: Little, Brown; 1973. P. 374, film clip 186 from the video series.
- <sup>20</sup> Moore PS, Chang Y. Detection of herpesvirus-like DNA sequences in Kaposi's sarcoma in patients with and those without HIV infection. *New England Journal of Medicine* 1995;332:1181-1185.
- <sup>21</sup> Schöfer H, Sachs D. Kaposi's Sarcoma, chapter 13 in *HIV Medicine*, 4th ed., 2006 ([www.hivmedicine.com/textbook/ks.htm](http://www.hivmedicine.com/textbook/ks.htm), accessed 31 October 2007).
- <sup>22</sup> Fauci A. CD4+ T-lymphocytopenia without HIV infection--no lights, no camera, just facts. *New England Journal of Medicine* 1993;328:429-431.
- <sup>23</sup> Ho DD, Yunzhen C, Zhu T, Farthing C, Wang N, Guiling G, Schooley RT, Daar ES. Idiopathic CD4+ T-lymphocytopenia--immunodeficiency without evidence of HIV infection. *New England Journal of Medicine* 1993;328:380-385.
- <sup>24</sup> Smith DK, Neal JJ, Holmberg SD, and the Centers for Disease Control Idiopathic CD4+ T-Lymphocytopenia Task Force. Unexplained opportunistic infections and CD4+ T-lymphocytopenia without HIV infection. *New England Journal of Medicine* 1993;328:373-379.
- <sup>25</sup> Cohen J. New clues found to how some people live with HIV. *Science* 1995;270:917-918.
- <sup>26</sup> Sulis E, Lusso P, Contu L. Prolonged asymptomatic HIV-1 infection. *New England Journal of Medicine* 2000;342:1221-1222.
- <sup>27</sup> National Institutes of Health. *HIV/AIDS Fact Sheet*, updated October 2006; [www.nih.gov/about/researchresultsforthepublic/HIV-AIDS.pdf](http://www.nih.gov/about/researchresultsforthepublic/HIV-AIDS.pdf), accessed 26 September 2007.



- <sup>28</sup> Antiretroviral Therapy Cohort Collaboration. HIV treatment response and prognosis in Europe and North America in the first decade of highly active antiretroviral therapy: a collaborative analysis. *Lancet* 2006;368:451-458.
- <sup>29</sup> Dore GJ, Cooper DA. HAART's first decade: success brings further challenges. *Lancet* 2006;368:427-428.
- <sup>30</sup> Panel on Antiretroviral Guidelines for Adult and Adolescents. Guidelines for the use of antiretroviral agents in HIV-infected adults and adolescents. Department of Health and Human Services. October 10, 2006; 1-113. Available at [www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf](http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf). Accessed 31 October 2007.
- <sup>31</sup> <http://aras.ab.ca/rethinkers.php>.
- <sup>32</sup> [www.aidstruth.org/about.php](http://www.aidstruth.org/about.php), accessed 23 September 2007.
- <sup>33</sup> Hank Campbell, [www.scientificblogging.com/hank/the\\_least\\_known\\_war\\_in\\_science\\_does\\_hiv\\_cause\\_aids](http://www.scientificblogging.com/hank/the_least_known_war_in_science_does_hiv_cause_aids), accessed 23 September 2007.
- <sup>34</sup> Matt Mills, [www.xtra.ca/public/viewstory.aspx?AFF\\_TYPE=3&STORY\\_ID=3323&PUB\\_TEMPLATE\\_ID=7](http://www.xtra.ca/public/viewstory.aspx?AFF_TYPE=3&STORY_ID=3323&PUB_TEMPLATE_ID=7), accessed 23 September 2007; more than two dozen comments, chiefly supportive, had been appended by end of September.
- <sup>35</sup> More than a dozen reviews and individual studies, all of which report transmission probabilities on the order of 1 per 1000 for Africa, Thailand, and the United States, are cited at pp. 44-45 in Bauer HH. *The Origins, Persistence and Failings of HIV/AIDS Theory*. Jefferson (NC): McFarland; 2007.
- <sup>36</sup> Gisselquist D, Rothenberg R, Potterat J, Drucker E. HIV infections in sub-Saharan Africa not explained by sexual or vertical transmission. *Int J STD & AIDS* 2002;13:657-666.
- <sup>37</sup> Brewer DD, Brody S, Drucker E, Gisselquist D, Minkin SF, Potterat JJ, Rothenberg RB, Vachon F. Mounting anomalies in the epidemiology of HIV in Africa: cry the beloved paradigm. *Int J STD & AIDS* 2003;14:144-147.
- <sup>38</sup> Gisselquist D, Potterat JJ, Brody S. Running on empty: sexual co-factors are insufficient to fuel Africa's turbocharged HIV epidemic. *Int J STD AIDS* 2004;15:442-452.
- <sup>39</sup> Gisselquist D. How much do blood exposures contribute to HIV prevalence in female sex workers in sub-Saharan Africa, Thailand and India? *Int J STD AIDS* 2007;18:581-588.
- <sup>40</sup> Davaro RE, Himlan PH. Immune restoration disorders following HAART. *AIDS Reader* 9(#3, May-June 1999):167-169.
- <sup>41</sup> DeSimone JA, Pomerantz RJ, Babinchak TJ. Inflammatory reactions in HIV-1-infected persons after initiation of highly active antiretroviral therapy. *Annals of Internal Medicine* 2000;133:447-454.
- <sup>42</sup> Bauer HH. Stagnant science: why are there no AIDS vaccines? (an essay review of Cohen J, *Shots in the Dark: The Wayward Search for an AIDS Vaccine*; Thomas P, *Big Shot: Passion, Politics, and the Struggle for an AIDS Vaccine*; Wong-Staal F, Gallo RC (eds.), *AIDS Vaccine Research*) *J Sci Exploration* 2007;21:365-371.
- <sup>43</sup> Chin J. *The AIDS Pandemic: The Collision of Epidemiology with Political Correctness*. Oxford (UK): Radcliffe; 2007.
- <sup>44</sup> Herman S. India lowers estimate of HIV, AIDS infections. 17 August 2007; [www.voanews.com/english/2007-08-17-voa62.cfm](http://www.voanews.com/english/2007-08-17-voa62.cfm), accessed 18 August 2007.
- <sup>45</sup> Potterat JJ. Attractive theory is not enough. (review of Bauer HH, *The Origins, Persistence and Failings of HIV/AIDS Theory*; Epstein H, *The Invisible Cure: Africa, the West, and the Fight against AIDS*; Chin J, *The AIDS Pandemic: The Collision of Epidemiology with Political Correctness*) *Int J STD & AIDS* 2007;18:645-646.
- <sup>46</sup> Bauer HH. *The Origins, Persistence and Failings of HIV/AIDS Theory*. Jefferson (NC): McFarland; 2007: see Chapter 9, summarizing data documented in earlier chapters.