

# The origin of acquired immune deficiency syndrome: can science afford to ignore it?

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There is a crisis of public faith in science and scientists. Recent research shows concern over scientific ethics, transparency and who benefits from research and development, exemplified in the genetically modified organism debate. Scientific discussion of the polio vaccine hypothesis for the origin of acquired immune deficiency syndrome (AIDS) has been systematically suppressed for more than 12 years. The author calls for an international multidisciplinary inquiry into the origin of AIDS, arguing it is essential to human health, prevention of new pandemics, and to protect the integrity of science in the eyes of the public.

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The jury is still out on how humanity came to acquire the disease known as acquired immune deficiency syndrome (AIDS). Indeed, the trial has not even convened. For, despite the fact that AIDS was first identified some 20 years ago, there has been little serious scientific investigation of how the most lethal plague of modern times entered our species.

Today, if a person dies in unexplained circumstances, medical and forensic scientists expend enormous effort to find the cause and trace its origin.

With 57 million humans dead and dying from a disease whose origin is unexplained, how can one account for the lack of international scientific interest in the source of this catastrophe?

That AIDS may have started with an experimental polio vaccine used in central Africa is one of a number of possible explanations. And, as a growing number of authors point out, it is backed by more scientific evidence than competing theories. Instead, the scientific world has dealt with this hypothesis with scornful personal attack, with refusal to discuss or publish, with libel suits and threats. But seldom with science.

Louis Pascal (Pascal 1991) first presented the oral polio vaccine (OPV) hypothesis of the origin of AIDS in 1987. It was circulated to leading researchers and journals in the field. It was ignored or rejected—except by the *Journal of Medical Ethics*, which said it was ‘important and thoroughly argued, and ought to be taken seriously by workers in the AIDS field’ (Gillon 1992, pp. 3–4).

In 1989 two South African scientists, Lecatsas and Alexander, were criticized (Shoub *et al.* 1990) for proposing that simian immunodeficiency virus (SIV) may have passed to humans through the medium of monkey kidney used to produce vaccine (Lecatsas & Alexander 1989; Lecatsas 1991).<sup>1</sup>

From 1991 to 1994, the Americans Elswood and Stricker sought without success to publish a well-referenced paper on the hypothesis in the mainstream scientific literature; ultimately, it was published in a journal

specializing in marginalized ideas (Elswood & Stricker 1994).

In 1992 the American investigative journalist Tom Curtis published a well-researched piece in the magazine *Rolling Stone* (Curtis 1992). He was disparaged by top scientists in both the scientific and general media.<sup>2</sup> He and his journal were sued for libel.<sup>3</sup> The hypothesis was rejected, without serious examination, by leading researchers in America and in the World Health Organization<sup>4</sup> and by various science writers (Cribb 1996).<sup>5</sup> Associated Press of America, which reported the Curtis article, was sued for libel in a litigation that dragged on for years (Court of Common Pleas 1992).

The late Professor Bill Hamilton, a very eminent scientist, sought to publish letters commenting on the OPV hypothesis in *Science* and *Nature*. He was rejected by both (W. D. Hamilton, personal communication 7 February 1995). He, others, and I encountered many open-minded scientists who deem this hypothesis plausible.<sup>6</sup> Yet none so far has dared to investigate it fully, perhaps for fear of the impact on their careers, funding or the condemnation of their peers.<sup>7</sup>

In 1992, the Wistar Institute convened a scientific inquiry into the question of whether human immunodeficiency virus (HIV) might have been passed in one of its early vaccines. Its most important findings have not been adopted.<sup>8</sup>

Ed Hooper, in the course of his investigations for *The river*, was threatened with the law, and has suffered personal attack.<sup>9</sup>

What I have described is *not* in the nature of a conspiracy. But it certainly amounts to a systematic endeavour to suppress public discussion and scientific inquiry into this important hypothesis and to discredit its proponents, over more than 12 years.

There is a striking historical irony. In the 1960s and 1970s, scientists entertained and investigated the hypothesis that polio vaccine contained a monkey virus, SV-40, which was unintentionally injected into tens of millions of people

worldwide (Shah & Nathanson 1976). A virus now linked to various lethal brain, lung and bone cancers (Yamamoto *et al.* 2000; Gamberi *et al.* 2000; Stewart *et al.* 1998).<sup>10</sup>

Yet in the 1990s and 2000s, it has not been possible to explore a parallel hypothesis without incurring abuse, censorship and litigation. What has changed?<sup>11</sup>

We live in an age in which public trust in science is at low ebb.<sup>12</sup> Throughout the Western world, opinion poll after opinion poll shows that the community's faith in, and respect for, science and scientists is diminishing.<sup>13</sup>

The vogue for alternative healthcare, New Age belief systems and pseudosciences is an outcome of the loss of confidence in modern R & D, its practitioners, managers and funding sources.<sup>14</sup>

The polls tell us that, while the public expects science to deliver benefits, it is more informed, critical and suspicious of how scientists conduct their business than in the past (ESRC 1999).

The word on the lips of the public today with respect to science is *ethics*. Public concern about the ethical practices of science is as deep as its concern for human and environmental safety.<sup>15</sup>

At the root of public unease lies the fact that so much research now takes place behind locked doors and razor wire. Much research is commercial-in-confidence, intended to benefit powerful global corporations.

The scientific community, in its struggle to maintain funding and to engage the private sector, is pawning one of its most priceless attributes, namely its reputation for dedication to the public interest, at least in the eyes of the public. And that's what counts.

This is not to say that what science does is wrong. Merely that the public now believes that scientists are serving, secretly, large global corporations whose interests do not necessarily match, and may conflict with, those of the local community (Swift 2000).

Gene technology is the epitome of this trend. There is widespread fear, suspicion and concern and an almost universal cry from the public that 'we have not been told what it all means'.<sup>16</sup>

The better-informed public points out that scientists have been swift to sell the purported glories of transgenics and loath to acknowledge possible risks or downsides.<sup>17</sup> Still less have scientists bothered actually to ask the public what it is that *it* wants from the technology. So nobody should be astonished that the public is in revolt.

The treatment by science of the OPV/HIV hypothesis is a fresh case in which the medical research community has, apparently, acted more from a concern for its own prestige than for the public good and the right of the public to know and discuss the facts.

In my book I presented 17 arguments favouring the hypothesis and 14 arguments against it. I also proposed an easy way to falsify the hypothesis. The proper course is to examine and test the idea on its merits, and to do so using scientific data, not recourse to law (Cribb 1996, pp. 235–239).

So far there has been no serious attempt to test this hypothesis scientifically or even, as Brian Martin has argued, to determine on which theory the burden of proof truly lies (Martin, this issue). Until this is done the public has a right to suspect that science is refusing to face unpalatable possibilities. Let me illustrate this.

Humans, hominids and other primates have some two million years of predatory interaction.<sup>18</sup> Yet adherents of the 'monkey hunter' theory insist the transfer occurred in recent times, through hunting a particular species of chimpanzee, *Pan troglodytes troglodytes*, which is confined to a home range in Cameroon/Gabon (Gao *et al.* 1999).

Virtually all of the world's earliest cases of HIV/AIDS occurred hundreds of miles or more to the east in the Congo Basin, the Great Lakes region or else in the Congo capital, Kinshasa.

On 30 August 1854, in London's Soho district a horrific cholera outbreak erupted that claimed scores of lives until some brilliant sleuthing by a local doctor, John Snow, traced the cause to a public water pump—and ended it by removing the handle.

It was caused by a leaky sewer passing within 3 ft of the well that fed the pump with drinking water. Though he knew little of microbes or epidemiology, Snow deduced the source of the cholera 'poison' by marking cases on a map of Soho. This showed that the vast majority of cases occurred within a 500-yard radius of the public pump at the corner of Broad Street and Cambridge Street (see Howell & Ford (1985, pp. 138–164) for a lively account of this episode).

The cholera victims of the Broad Street pump did not die in Hamburg, in Warsaw, or in Minsk 1000 miles away. They died in London, within yards of the source. Likewise, it is probable that the earliest AIDS cases arose in the towns and districts where the disease first entered humans—and not hundreds of miles distant, across one of the greatest rivers on Earth, as today's 'monkey hunter' theorists propose.

Ed Hooper has shown there is a powerful coincidence both in place and time between polio vaccination events and early cases of HIV/AIDS (Hooper 2000, pp. 592–596). Richard Middleton has shown there is a powerful coincidence between the 1950s vaccination areas and a sixfold increase in Kaposi's sarcoma in central Africa in the 1960s.<sup>19</sup>

Adherents of the monkey hunter theory have sought to distance it in place. Their recent work represents an attempt to distance it in time (Korber *et al.* 2000; the authors argue for an HIV crossover date of *ca.* 1931). Both are based narrowly on the discipline of genetics, and lack balancing input from other branches of science.

I have dwelt on the loss of public faith in science. Unless scientists are prepared to go into this issue objectively and transparently, it will damage the standing of science in the eyes of the community.

Bill Hamilton once said: 'In the face of overbearing professional mystique, disregard and now, even litigation, the public becomes justified in its disillusion with science, and in some of its deepest fears' (Cribb 1996, p. 210).

If AIDS is iatrogenic, through an honest mistake, science may be forgiven. But if it seeks to bury the idea, first, it will fail and second, it will destroy public trust. As Hamilton once foretold: 'Th(is) hypothesis is certainly not going to go away'.<sup>20</sup>

I here call for an independent, international, multidisciplinary investigation of the origin of AIDS, which treats the various theories on their merits and actively seeks valid data to sustain or refute them. And I echo Bill Hamilton's call to investigate why this hypothesis has been so poorly

treated, and the pressures now accumulating upon scientists to marginalize or avoid such research.<sup>21</sup>

Why is it important to know the origins of AIDS? First, because the source of no great human catastrophe should go uninvestigated. It is essential we understand how to avoid such calamities in future.

Second, because understanding an origin sometimes reveals ways to solve the problem. The Soho pump illuminates this principle. Some scientists have already suggested the OPV hypothesis could assist in developing an effective AIDS vaccine (Bagasra 1999).

Third, because we must improve the safety of biologics worldwide. The one clear finding from this issue so far—that primate tissues be banned for making vaccine—has yet to be adopted.

Fourth, because other dangerous monkey viruses, as yet unknown to science, undoubtedly exist. Acknowledging the possibility that AIDS is iatrogenic will compel a far more cautious approach to animal organ grafts and other trans-species experiments.<sup>22</sup> Surely, we need not risk another 50 million deaths to grasp this?

And finally, for the sake of the integrity of science. For the preservation of trust in it, in the eyes of the community. For its ability to do great good for humanity far into the future.

#### ENDNOTES

<sup>1</sup>Alexander, J. J. Media interview, 7 January 1992.

<sup>2</sup>See *Science*, 20 March 1992, p. 1505; *Science*, 30 October 1992, p. 738; *Science*, 26 November 1993, p. 1369.

<sup>3</sup>United States District Court for the Eastern District of Pennsylvania, Civil Action no. 92-CV-7431, 1992, *Hilary Koprowski v. Straight Arrow Publishers Inc.*, Jann S. Wenner and Tom Curtis.

<sup>4</sup>A senior WHO AIDS spokesman told Curtis: 'The origin of the AIDS virus is of no importance to science today. Any speculation as to how it arose is of no importance' (Curtis 1992).

<sup>5</sup>Among them distinguished names such as Lawrence Altman, Laurie Garrett, Tony Gould and Arno Karlen.

<sup>6</sup>Besides Hamilton, Lecatsas and Alexander, sworn affidavits testifying to the plausibility of the OPV/HIV hypothesis were also submitted by J. Melnick, D. D. Ho, P. Marx and R. B. Middleton to the Court of Common Pleas (Court of Common Pleas 1992).

<sup>7</sup>W. D. Hamilton, 23 February 1994, correspondence with D. Koshland, Editor of *Science*. 'Here in my own department I am finding people far better qualified to investigate than I am who say things like "Well, I can see the theory may have a case, but I'm afraid I can't touch any of that: our grant comes from the Medical Research Council" or "Labs that could test what you want in Britain ... all get money from the MRC or drug companies".' Hamilton categorized this situation in science as 'terrible for all mankind'.

<sup>8</sup>Basilico, C., Buck, C., Desrosiers, R., Ho, D., Lilly, F. & Wimmer, E. 1992 *Report from the AIDS/Poliovirus Advisory Committee*, 18 September 1992. Philadelphia: Wistar Institute. Its principal findings were (i) that the OPV/HIV hypothesis is possible but unlikely, (ii) that early Wistar vaccine lots used in Africa should be tested for the

presence of SIV or HIV, and (iii) that the use of monkey kidney as a culture medium for live poliovirus vaccines should be discontinued.

<sup>9</sup>In January 1995 Hooper received the following letter from an attorney representing one of the scientists involved in the original vaccine trials: 'This letter is to put you on notice on behalf of all I represent that any publication that is scientifically unsound and therefore obviously defamatory in nature will be promptly pursued in the appropriate courts against you and your publisher'.

<sup>10</sup>Carbone, M., cited in *New Scientist*, 24 August 1996, p. 16. Polio vaccine linked to cancer.

<sup>11</sup>See comment by J. Alexander in Cribb (1996), p. 228: 'Science in the 1960s was gentler, kinder and more honest. There is too much at stake today. There is so much money and politics involved in the whole issue of AIDS. It's a great big power-game, with scientists hanging onto their reputations ... some are turning into pop-stars. Also sections of the medical profession feel threatened by such theories, because they are no good for the image of medicine. It has become a very jittery profession.'

<sup>12</sup>See *UK House of Lords Select Committee on S & T, Third Report, 23 February 2000*: 'Society's relationship with science is in a critical phase. Science today is exciting, and full of opportunities. Yet public confidence in scientific advice to Government has been rocked by BSE; and many people are uneasy about the rapid advance of areas such as biotechnology and IT—even though for everyday purposes they take science and technology for granted. This crisis of confidence is of great importance both to British society and to British science.'

<sup>13</sup>*Ibid.* 'There is, however, an apparent crisis of trust. While people appear to have an appetite for popular science, the paradox is that this is accompanied by increasing scepticism about the pronouncements of scientists on science-related policy issues of all types.'

<sup>14</sup>Pockley, P. 1995 Science versus counter-science: an agenda for the new battleground. T. G. H. Jones Memorial Lecture, Department of Chemistry, University of Queensland, Brisbane, Australia, 12 October 1995.

<sup>15</sup>Evidence for this has emerged in several qualitative and quantitative analyses of public opinion conducted in Australia for the CSIRO, e.g. Market Attitude Research Services, January 1998 and June 2000. On comparable issues, this research strongly mirrors findings from Europe and North America, making it possible such views are general in the Western world. This remains to be confirmed.

<sup>16</sup>On the need for more open consultation see: OECD 2000 GM food safety: facts uncertainties and assessment. *OECD Edinburgh Conf. on the Scientific and Health Aspects of GM Foods, February/March 2000*. See also: Anonymous 2001 *Elements of precaution: recommendations for the regulation of food biotechnology in Canada*, ch. 9, pp. 211–218. Toronto: The Royal Society of Canada.

<sup>17</sup>The better informed the public is about science, the more suspicious it tends to be. See Gaskell, G., Bauer, M. W., Durant, J. & Allum, N. C. 1999 Worlds apart? The reception of genetically modified foods in Europe and the US. *Science* **285**, 384–387.

<sup>18</sup>F. Thackeray (Transvaal Museum), personal communication 27 July 2000: 'There is a case from studies of stable carbon isotope ratios of very small samples of

hominid tooth enamel from Swartkrans, suggesting that both early *Homo* and *Australopithecus robustus* were omnivores' (see Lee-Thorp, J., Thackeray, J. F. & Van der Merwe, N. 2000 The hunters and the hunted revisited. *J. Hum. Evol.* **39**, 565–576). Both australopithecines and early *Homo* were eating plants and animal protein in the Pleistocene between 1.7 and 1.5 million years ago. The hominids may have had various sources of protein including the meat of ungulates, at least some of which may have been scavenged from leopards and other carnivores. Certainly, leopards would have been eating baboons, and to my mind it is not impossible that hominids would have scavenged meat or bone collagen from primates killed by carnivores.

<sup>19</sup>Middleton, R. B. 1997 Affidavit, Court of Common Pleas, County of Philadelphia, 28 April 1997. It states: 'A comprehensive study of 500 malignant cases in Africa before 1950 revealed that only 10 (2%) were Kaposi's sarcoma. By 1961 the epicenter of the incidence of KS was in Eastern Zaire, exactly the same area where the polio vaccine trials were conducted, where more than 10% of all malignancies were KS (an apparent 500% jump from 1956–1961). In 1962 it was reported more than 12% of all malignant tumours in Zaire were KS, a 600% increase from pre-1957 studies.' Middleton also pointed out how KS rates diminished steeply with distance from the epicentre, and that the pattern, not surprisingly, replicated that for the spread of HIV/AIDS.

<sup>20</sup>W. D. Hamilton, correspondence with D. Koshland, Editor of *Science*, 23 February 1994.

<sup>21</sup>W. D. Hamilton, personal communication to J. H. J. Cribb, 7 February 1995, in which he says: 'There should be an investigation by an international committee mostly composed of non-medical people concerning how a rather obvious and plausible theory came to be scorned and restricted from publication for so long, especially when important consequences regarding mankind's worst epidemic, and even more important consequences for others possibly even worse that may be following, hang in the balance. As a corollary it should be studied why the hypothesis had to be promoted mainly by outsiders to science and medicine. The pressures towards investigation (and non-investigation) that emanate from huge drug companies and their influence in slanting research in subtle ways should also be examined, as should the role of journals and peer review in potentially obstructing publications of controversial kinds.'

<sup>22</sup>For instance, Simian parvovirus was not in fact discovered until 1994, two years after experiments in which baboon organs were transplanted into humans. It is also noteworthy that it was subsequently found that the human recipients were infected by baboon retroviruses present in the donor organs. See Allan, J. S. (and 10 others) 1998 Amplification of simian retroviral sequences

from human recipients of baboon liver transplants. *AIDS Res. Hum. Retroviruses* **14**, 821–824.

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