Politics, the media and science in HIV/AIDS: the peril of pseudoscience

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Abstract

The microchip, the computer and the DNA revolution have brought the questions of ethics, counselling and equitable research to the fore. The new world order is a world of: equity; human rights; human dignity; the alleviation of poverty; closing the gap between the 'haves and have nots'. The social and economic impact and implications of these have opened a new dialogue between the professions and the laypersons in order to address matters of rights, ethics and power relationships in health research that is unprecedented in history. The yearning need for science to be understood by the public; the need for scientists to communicate better; the need for the public to make choices about what science has to offer in their daily life; the need for the public to participate and shape the scientific process; the need for science to integrate the wealth of information that is already existent has never been greater than today. Perhaps no examples illustrate these challenges better than the revolution in biology (the Human Genome Project and embryo stem cell research/therapy) and the human immunodeficiency virus (HIV)/AIDS epidemic that is sweeping sub-Saharan Africa [1]. The way we teach, learn and practice science will no longer be the same. It will no longer be business as usual. It is unfortunately also within this context that pseudoscience is likely flourish [2]. © 2002 Elsevier Science Ltd. All rights reserved.

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1. Introduction

In the so-called new South Africa, the lack of a common national vision and the ever persistent racialisation of issues have often led to heated national furores and a failure to act for the common good of our country. The current and continuing human immunodeficiency virus (HIV)/AIDS discourse, often erroneously referred to as a debate, is such an example. The HIV/AIDS controversy has focused sharply on the choices we make and authorities we entrust as South Africans—political, media or scientific; or in the responsible interplay between politics, science and the media—towards finding affordable and accessible solutions to the AIDS epidemic. It is an important discourse that should take place in order to improve on our young democracy and enter this new paradigm in health research—a paradigm of equity, a paradigm from ivory into ebony, a paradigm of multi-stakeholder participation in research.

To partially deal with the current discourse, one must address the following four major areas in order to assess their contributions to the evolution of pseudoscience.

1. What government has done in HIV/AIDS?
2. What we know about HIV/AIDS causation and treatment controversy so far?
3. What role the media play in pseudoscience?
4. The role of politics in pseudoscience.

2. What has government done?

At last the current government under President Thabo Mbeki has a clearly articulated HIV/AIDS strategy embodied in the HIV/AIDS National Plan [3]. It is at last because South Africa:

i) lacked a public health policy between 1981 and 1996—this for an infectious disease borders on irresponsibility by the previous regime;

ii) poorly implemented whatever rudimentary public health policy on HIV/AIDS since 1996;

iii) continued with the migrant labour system in an era of globalisation and integration;

iv) opened its borders to the rest of the world in 1990 (without a public health policy) resulting in the seeding of multiple epidemics of HIV. The government has set-up the following structures: an AIDS Directorate in...
HIV infection and killing of CD4+ lymphocytes, leading to progressive depletion of and selective infection of immune response (reviewed in [4]). The critical distinction here is progressive depletion of and selective infection of CD4+ lymphocytes. While conditions, such as poverty, malnutrition and many chronic infectious and non-infectious diseases may be aggravating or contributing factors, it must be stated categorically that none of these conditions by themselves singly or in combination cause this characteristic progressive depletion of CD4+ cells or selective infection of CD4+ cells. There is no scientific evidence to date that for example the causative agents of tuberculosis or malaria selectively infect CD4+ lymphocytes causing progressive loss that lead to AIDS. Neither is there scientific data to date showing that malnutrition or poverty causes the selective depletion of CD4+ lymphocytes and the clinical syndrome of AIDS. Having said this, one is not saying these conditions may not play a role in the syndrome and its alleviation; one is simply saying currently there is ample scientific data to demonstrate that they do not cause AIDS. The four postulates of Koch that Duesberg raised in 1987, i.e.

a) the micro-organism causing the disease must be found in all cases of the disease;
b) the micro-organism must be isolated from the host and be grown in pure culture;
c) the micro-organism must reproduce the original disease when introduced into a susceptible host and;
d) it must be found in experimental host so infected;

have all been fulfilled in case of HIV/AIDS. The development of the polymerase chain reaction and co-culture techniques have allowed researchers to document and isolate HIV in virtually all cases of AIDS. Case studies from accidental exposure in laboratory workers, occupationally-acquired HIV infection, haemophiliacs, mother-to-child transmission, injection drug use have all elegantly contributed towards the fulfilment of the Koch’s postulates and demonstrated further the chronological association between HIV infection and the development of AIDS. We are currently rehashing a controversy that took place in the developed countries over 10 years ago. In 1994, John Cohen, a leading science journalist conducted a 3 months investigation into the so-called ‘Duesberg phenomenon’ including interviews with Duesberg, some of his so-called supporters and other scientists [5]. John Cohen’s conclusions reported in the journal Science includes:

a) in haemophiliacs (the group Duesberg acknowledges provides the best test case for the hypothesis that HIV causes AIDS) there is abundant evidence that HIV causes disease;
b) HIV now fulfils the classic postulates of disease causation established by Robert Koch;
c) the AIDS epidemic in Thailand, which Duesberg has cited as confirmation of his theories, seems instead to confirm the role of HIV;
d) AZT and illicit drugs, which Duesberg argues can cause AIDS, do not cause the immune deficiency characteristic of that disease [9].
In 1995, the National Institutes of Allergy and Infectious Diseases at NIH assembled a panel of expert to look at “the relationship between HIV and AIDS” (http://www.niaid.nih.gov/publications/hiv aids/all.htm) in particular to address some of the queries raised by Duesberg and his colleagues. Their conclusion: HIV causes progressive immunosuppression and AIDS in people with no other risk factor for immune dysfunction. They also found unquestionable evidence that showed HIV fulfills all of Koch’s postulates and addressed all of Duesberg queries fully. Its Editor, John Maddox in the UK did a similar response in Nature. ‘To suggest that the so-called dissidents’ viewpoint has been suppressed in the scientific community is being economical with the truth’.

All great scientists have one thing in common—the development of a theory/hypothesis that is backed up by experimental data—from Galileo, Einstein, Newton, Jenner, Pasteur, Koch, Watson, Crick, to Milstein. Today most of us walk the world not having seen an electron or experienced the force of gravity, nor seen DNA or a monoclonal antibody and not being able to prove that indeed the earth is round. But because of the overwhelming scientific evidence that continues to emerge we all take these as matter of faith. No scientist would simply believe that these or the scientific method we use are sacrosanct. No doubt someone somewhere in science is looking for alternative evidence to explain the totality of the nature of matter. However, they will only do this by quality experimental proof that is subjected to the highest scientific rigour. Since Duesberg made his important pronouncements in the late eighties in relation to HIV and its relationship or lack thereof to AIDS and his theories that illicit drugs or AZT (which are not major factors in sub-Saharan Africa) or malnutrition are the causes of AIDS, he has yet to provide experimental proof from his own studies for these “brilliant ideas”. Many of us with our open minds are eagerly waiting for this. A logical extrapolation of the dissident’s theory is that poverty or malnutrition causes all that we knew as TB or malaria; or that the TB bacillus causes malaria. This seductive theory is characterised by the illogic of its logic. In the meantime, many scientists have however provided evidence to demonstrate that his theories are not true. It is important to recognise the enormous socio-economic improvement that has occurred in Africa over the last 30 years. Over this period, nutritional status improved; life expectancy increased; neonatal and infant mortality improved; both measures of the quality of life. To postulate today without proof that malnutrition and poverty cause AIDS in Africa seems absurd; but such is the nature of scientific inquiry. How does this dissent’s theory explain the occurrences of AIDS in haemophiliacs, mother-to-child transmission, the US, Europe, Australia and Thailand where poverty and malnutrition are not major issues? All diseases are made worse by poor social conditions. This is so obvious that you would not find a doctor who would say otherwise. However, to conflate this factor with causation by clever wordplay is very dangerous.

3.2. What lessons have we learned from the experience with anti-retrovirals?

The enormous impact of anti-retrovirals on HIV/AIDS supported by outstanding scientific and clinical evidence only serves to confirm the viral aetiology of AIDS. There is no doubt that the introduction of anti-retrovirals has made a great impact on the natural history of the HIV/AIDS epidemic. However, they are not a panacea for the management of AIDS. Anti-retrovirals have increased life expectancy and improved the quality of life of many AIDS sufferers in the developed world and given hope to what appeared a lost cause. That is why today in these countries AIDS is seen as a controllable epidemic. By acting on HIV to bring about improvement in clinical symptoms and immune status, this supports the viral aetiology of AIDS. Currently good scientific evidence exists to show that AZT and nevirapine reduce mother-to-child HIV transmission. The benefits of treatment appear to outweigh the risks. This impact would have greater benefits to developing countries that bare the brunt of this epidemic. It does not mean however, that there are no moral or ethical dilemmas with regards to equity, sustainability and affordability in this treatment [6]. These dilemmas are what government should address with speed and clarity.

4. The role of our media

With so much positive going in South Africa in terms of government activities to the HIV epidemic and with so much information available on HIV/AIDS why do the media of our country fail to highlight these positive initiatives and report accurately on the history and nature of this controversy? This controversy is at least 13-year-old. Our media have not yet learned to share a common vision of the new South Africa; our media has a tendency to confuse their role as an independent critic of society and they are by default role in opposition. With poor journalistic skills and a hopeless leadership, the media has through poor instigative journalistic skills and poor understanding of the complexities of the science continued to add to the confusion rather than illuminate the dark shadows in the discourse. In this controversy, they are failing in their role as sources of information and education to the public. As a result, most South Africans are left confused, bewildered and with no hope; but with the knowledge that only scandals, such as Sarafina and the quackery of Virodene are what our government and science system are about. I do not wish to be interpreted as saying these public issues are not important, but what I do wish to say is that so many good things being done by South Africans are not treated as newsworthy. These distortions and misrepresentations or misinterpretations of facts are what fuels the development of pseudoscience. Finally, the media has also failed to see the big picture—the picture of an international holistic strategy that links the whole HIV/AIDS epidemic to national socio-economic and national development.
The emphasis here is about solutions rather than causation. The World Bank, WHO/UNAIDS, EU, IAVI and the MRC (SA) have championed and shaped this holistic developmental approach over the past 2 years. These discussions have resulted in policy changes in the World Bank, WHO/UNAIDS, EU and the programmes of the MRC with regards to approach to the HIV/AIDS epidemic. This holistic developmental approach that takes into account the high impact socio-economic diseases, such as AIDS, TB, malaria and conditions, such as poverty and malnutrition has been established through workshops in these institutions. The media has failed to be an instrument of proper information and education of the people with regard to this shift in approach to the epidemic. Consequently, South Africa’s people are made to lose hope and trust on a government that is working hard to address with urgency such moral, ethical, social and developmental issues located within the HIV/AIDS epidemic. These media failures in this HIV/AIDS controversy have again shown its lack of vision, focus and leadership in reporting and interpreting the new society.

5. The role of politics in pseudoscience

When science cannot be separated from ideology or when scientific truth becomes amalgamated with an ideology it becomes pseudoscience. When eminent scientists misrepresent, distort, refuse to acknowledge scientific findings to promote or draw attention for publicity because of failed career ambitions or other agendas—that is pseudoscience. When politicians, journalists and the nations intelligentsia control the flow of information, distort or misrepresent the facts of science for a short-term ideological gain—that is pseudoscience; when powerful persons in society contaminate causation and cofactors of HIV/AIDS through a mixture of pseudoscientific statements or clever wordplay—that is pseudoscience; when powerful nations/institutions impose their own ethical standards in science on weaker nations/institutions in order to get their interests/agenda fulfilled at the expense of the weak and powerless—that is pseudoscience; when science is being used by the powerful to promote ignorance or confuse rather than assuage ignorance—that is pseudoscience. All these approaches diminish the authority, value, integrity and independence of science in society [2].

Perhaps no science is a better illustration of the influence of ideology than genetics [7]. Genetics is not just pure science without consequences for human society—genetics is also business just like the HIV/AIDS field. DNA technology today is being used to construct biological weapons, which were tabooed. Politics have suddenly changed and biological weapons are in vogue. One has to remember that Japanese researchers murdered more than 10,000 persons when testing their biological weapons in 1932–1945 [8]. The Americans gave them indemnity in return for their laboratory journals. Geneticists also give a particular view about human nature and make promises on how to optimise human society. Whenever politics takes centre stage, manipulating science for its ends, opts for the wrong scientific advice, erodes the independence and rigour of the scientific methods in any country, the consequences have been dire [8].

History is replete with examples of these dangers of politics meddling in science. In 1924, the US Congress passed legislation that decreased Jewish immigrants from Poland on the wrong advice that “genetically inferior people, who would make bad American citizens, were more frequent in southern and eastern Europe than northern Europe” by the famous Cold Spring Harbor geneticist Harry P. Laughlin [9]. Before 1945, almost all geneticists were against race mixing. The manipulation of German scientists by the Nazis led to the sterilisation of about 350,000 “inferior” people most of them labelled “feeble minded”; to the discrimination and murder of many Jews and Gypsies on scientific grounds. German scientists were at the forefront of eugenics [8,9]. Similar but less advanced sterilisation policies were practised in the US and Scandinavia by politicians manipulating science [10]. In apartheid, South Africa politicians collaborated with some scientists to develop a Biological warfare programme through which those that were against apartheid would be selectively targeted by poisoning or chemical sterilisation. Africa’s inability to have a strong SET base can be squarely placed on unwise political choices. Some of Africa’s best scientists are haunted by the spectre of exile life having been driven out of their countries by political interference or the amalgamation of political ideology with science. Scientific and political controversy around genetics is not new but continue to fascinate the public.

The first details of human genome have been completed. Genetic profiling would in the near future affect public health policy, social dialogue and information access. The social implications of this breakthrough are incalculable and so are the economic benefits. The Chinese who have a population of approximately 1.5 billion people with only 100 surnames, see this as follows “good genes equal a good economy”. The Icelandic population which by geography and record keeping have a well-kept database of medical, genealogical and genetics of its people are currently using this finding to set a blueprint for how genetic profiling can improve the quality of life and reduce healthcare cost. The British are also generating a genetic database but because of societal and ethical constraints they are following a different route.

The religious nature, the ethically dilemmas and the racial baggage of America’s history have brought this issue to a stop at the moment in the USA. All these are clearly controversial and full of ethical dilemmas. There is, however, no doubt that individual genetic profiles will become the basis of individually tailored made treatment. It will also become the basis of many individual choices and how society in the form of institutions, parents, lawyers make decisions or these choices, e.g. designer babies, educational choices; judgements based on DNA, adoption choices, etc.
The questions that arise out of this are: who owns this powerful information? Who should have access to it and who would be allowed to use it and under what circumstances? Should insurance companies, employers, couples, mothers to be or couples who wish to adopt a child have access to this?

It will soon be impossible to enter school or university without presenting ones relevant genotype. If you marry, if you apply for a job or enter a political career, your genotype has to be presented. There will be flood of revelations that some persons who were great writers, intellectuals, poets or politicians, Nobel Prize winners and entrepreneurs of the past had indeed bad genotypes. The implications for society are at times too gustly to contemplate: PW Botha.

Scientific and political controversy around HIV/AIDS is nothing new. In late 1980s, French and US scientists were locked in ugly battle for patents and the potential spinoffs thereof and as to who had isolated the HIV first. After much deliberations and scrutiny of the scientific literature, laboratory notes and notebooks, President Ronald Reagan and President Francois Mitterrand through the advice of their scientists signed an agreement that credited Drs. Robert Gallo and Luc Montagnier as the co-discoverers of the causative agent of AIDS. In South Africa, AIDS is seen as a source of moral authority and power, e.g. the Democratic Party is using the programme of AZT for pregnant women in the Western Cape to encourage the development of pseudoscience in a country where the balance between ignorance and literacy are at knife-edge and in societies where denial, chauvinism, fear and ignorance are rampant [11].

The media and the political discourse are in danger of encouraging the development of pseudoscience in a country where the balance between ignorance and literacy are at knife-edge and in societies where denial, chauvinism, fear and ignorance are rampant [11].

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References


