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**ECHOES OF LYSENKO:
STATE-SPONSORED PSEUDO-
SCIENCE IN SOUTH AFRICA**

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Echoes of Lysenko: State-Sponsored Pseudo-Science in South Africa¹

Abstract

A major factor hampering the rollout of highly active antiretroviral treatment (HAART) for HIV/AIDS in the public health sector is state support of pseudo-science. This paper examines state-sponsored pseudo-science in South Africa with a particular focus on the case of Matthias Rath and his claim that HAART is an ineffective and harmful form of treatment and that multivitamins should instead be used as a substitute to treat and cure AIDS. The paper examines similarities and differences between state support in South Africa for AIDS-denialists such as Rath and state support in the former Soviet Union for Lysenko, a pseudo-scientist who lacked scientific training. In both cases, state support for pseudo-science has had policy implications, and resulted in many deaths.

Introduction

About five million South Africans are infected with HIV and over one million have already died of AIDS (Actuarial Society of South Africa 2003). The provision of HAART in the public sector has the potential to reduce HIV morbidity and mortality substantially, but only if the slow pace of the treatment rollout increases. A recent report by the convener of the Joint Civil Society Monitoring Forum estimates that about 200,000 people are on treatment, of which about 110,000 are treated by state health facilities (Hassan, 2006)². According to the ASSA2003 model, this still leaves a shortfall of about 500,000

¹ Conflict of Interest: The author is the deponent in a court case against the Rath Foundation and its associates and is employed by the Treatment Action Campaign.

² This estimate is preliminary and should be treated with caution.

people with AIDS who do not receive treatment, of whom over 300,000 are likely to die in 2006.³

Rolling out HAART is, of course, a major challenge for the health sectors of developing countries. But this does not explain why South Africa's HAART provision has missed the government's own targets and is so far short of demand (Natrass, 2005; Department of Health, 2003: 52)⁴. There are grounds for suspicion that South Africa's treatment rollout has been stalled and undermined by an absence of political will on the part of the Minister of Health and the South African President, Thabo Mbeki.

One of the ways in which the HAART rollout has been undermined is through fostering of confusion over the science of AIDS and related treatment interventions. This has been achieved directly (for example, through the inclusion of discredited scientists and non-scientists on President Mbeki's 'AIDS Panel' to 'discover the facts')⁵ and indirectly through the failure of government and statutory bodies to act against pseudo-scientists promoting alternative remedies to HAART. It is in this sense that there has been state-sponsored support for pseudo-science. At best, this has sown confusion and at worst, it has resulted in unnecessary deaths and has deflected attention of health officials from building the public health sector and expanding the HAART rollout.

By pseudo-scientists, I mean those who purport to work within the scientific paradigm, but who ignore or misrepresent accumulated scientific knowledge, fail to adhere to established scientific methods of research and who use scientific rhetoric when promoting their alternative remedies. Unlike traditional healers who appeal to knowledge of herbs passed down through the generations, or to the advice of ancestral spirits, pseudo-scientists seek to claim the legitimating mantle of science by arguing that a corrupted scientific establishment has unjustifiably repressed their correct alternative theories. Debate and argument over alternative theories is, of course, the engine that drives scientific discovery and innovation. What distinguishes pseudo-scientists from scientists who are simply proposing new theories or arguing in favour of minority positions is that the pseudo-scientists do not respect the rules that govern scientific research and intellectual engagement – but instead appeal to popular fears and misperceptions

³ ASSA2003 estimates 5.2 million infected of which approximately 530,000 people have progressed to AIDS but do not have access to HAART. Having AIDS is the qualification for accessing HAART according to South Africa's treatment guidelines.

⁴ The Department of Health (2003) commits to treating over 180,000 people by end of 2004/5 financial year and over 380,000 by end of 2005/6 financial year. As of January 2006, not even the former of these targets had been reached.

⁵ The members of this panel can be found at <http://www.polity.org.za/html/govdocs/reports/aids/chapter1.htm>. Last accessed 8/2/2006.

and seek support wherever it is offered in order to advance their own interests. A good example of this is Matthias Rath and his vitamin empire, the Dr. Rath Health Foundation.

There is a vast wealth of evidence from randomised controlled clinical trials as well as operational clinical settings in developed and developing countries that HAART is effective when administered correctly (see, for example, WHO, 2003; Palella *et al*, 1998, 2003; Jordan *et al*, 2002; DHHS, 2005; Mocroft *et al*, 1998; Vittinghoff *et al*, 1999; Badri *et al*, 2004; Severe *et al*, 2005). Yet, as discussed in this paper, the Rath Foundation has mobilised support from the South African National Civics Association (SANCO), the Traditional Healers Organisation (THO) and the National Association of People Living with AIDS (NAPWA) for his alternative vitamin-based therapies. That he has achieved this measure of success is in part a consequence of the nature of HIV disease (HIV-positive people typically experience bouts of illness and health, and these improvements may erroneously be attributed to alternative remedies).⁶ This paper starts off with an overview of the South African government's support for pseudo-scientists who promote alternatives to HAART. It then turns to a discussion of Rath's brand of pseudo-science, and provides evidence for government support for him. The paper then draws parallels with state-sponsored support for Lysenkoism in the Soviet Union. Both Lysenko and Rath were able to present their marginal status in the scientific establishment as evidence of repression by bourgeois (in the case of Lysenko) or commercial (in the case of Rath) interests – thereby appealing to specific nationalist projects espoused by those in political power. One commonality between Lysenko and Rath is that they both received state support, with consequent gross injustices.

Overview of the South African government's support for AIDS-denialists

The response of the South African government to the HIV epidemic has been controversial. President Thabo Mbeki and Minister of Health Dr Mantombazana Tshabalala-Msimang, since 1997, have courted pseudo-scientific theories about AIDS. These include the Virodene saga in which Mbeki promoted the research of an unpromising drug containing a toxic solvent for which a trial had been conducted without ethical approval, the establishment of the Presidential AIDS Advisory Panel in 2000 containing approximately equal numbers of AIDS denialists and “orthodox” scientists, and the distribution of AIDS-denialist material (anon. 2002) condemning the use of antiretroviral therapy to African

⁶ See Gardner (1957: 186-219) for a discussion of how those promoting non scientifically tested remedies are able to delude themselves and others about their success.

National Congress branches (Van der Vliet, 2004; Heywood, 2004, 2005). The Minister of Health and some of the officials working in her department frequently warn about the toxicity and side-effects of antiretrovirals and never point out its benefits. Instead the Minister has on various occasions encouraged taking traditional medicines, vitamins or garlic and other food substances to treat AIDS and as alternatives to antiretroviral treatment.⁷

The Minister of Health has appeared in a documentary produced by Tine van der Maas, a retired nurse who sells nutritional supplements to patients as alternatives to HAART (Van der Maas *et al* 2005). The Minister has also reportedly allowed Van der Maas access to public sector HIV patients (Cullinan 2005b). The documentary shows Van der Maas's sick patients doing well weeks after she treats them. No proper diagnoses are done of patients and so one cannot tell what Van der Maas has allegedly cured them of, although she (and her mother) speculate about their illnesses. In the scenes where the Minister appears, her behaviour is supportive of Van der Maas.

Van der Maas, a former nurse but clearly without formal training in scientific method, provides to her patients a concoction containing very large amounts of raw garlic as well as a product called “Africa's Solution” which contains hypoxis, an extract from African potato that has been shown to be dangerous for people with HIV (Bouic *et al*, 1996). She claims this concoction treats AIDS, diabetes, epilepsy and numerous other conditions. No documented evidence of this is provided and she does not properly monitor her patients. On the contrary, Van der Maas has stated “when you do not hear from patients, they usually are doing well” (Tine van der Maas. 2005. pers. comm. May). She claimed to keep records of 40,000 patients but when she was pushed to provide evidence for their existence she claimed that burglars had urinated on them (Brits 2005). Journalists investigating Van der Maas have located very few of her patients (Kerry Cullinan of Health-e. 2005. pers. comm.). Liz McGregor, author of *Khabzela*, a biography of a well-known South African disc jockey who died of AIDS after refusing to take HAART, reports that Van der Maas had been sent to assist him with her (unsuccessful) alternative remedies by the Minister of Health (McGregor, 2005: 15, 207-222). Van der Maas has claimed that she runs her programme without a profit motive but this has been disputed by a former colleague of Van der Maas (*ibid*: 227).

⁷ There are many such instances, see Fitzpatrick (2005), Pressly (2005). For example, the Director-General of Health states “If you to take ARVs ... they are available, but you have got other alternatives too” (Bodibe 2005). See also 15 September 2005, answer to question No. 102 in National Assembly. Annexure to TAC's founding affidavit in TAC and SAMA v. Rath and Others.

The following section describes the case of Matthias Rath – arguably the most damaging example of state-supported pseudo-science to date. It then compares and contrasts state-supported AIDS-denialism with the Lysenko affair in the Soviet Union.

Matthias Rath and his claim that multivitamins reverse the cause of AIDS

Matthias Rath is a German pharmaceutical proprietor⁸ who claims that multivitamins treat or cure a number of diseases including cancer,⁹ heart disease,¹⁰ diabetes,¹¹ asthma,¹² and most recently AIDS.¹³ He campaigns vigorously against proven medicines for these diseases, referring to the pharmaceutical industry as “*Business with Disease*”.¹⁴ The following is representative of Rath’s rhetoric:

‘Never before in the history of mankind was a greater crime committed than the genocide organized by the pharmaceutical drug cartel in the interest of the multibillion-dollar investment business with disease. Hundreds of millions of people have died unnecessarily from AIDS, cancer, heart disease and other preventable diseases and the only reason that these epidemics are still haunting mankind is that they are the multibillion-dollar marketplace for the pharmaceutical drug cartel.’¹⁵

Rath’s products primarily consist of multivitamins. They are prescribed in doses far in excess of recommended daily allowances (Ntsholo 2005).¹⁶ He sells his

⁸ See www.drrathhealthalliance.com. Rath’s flagship product *Vitacor Plus* is sold for \$29.95 for a month’s supply at <http://www.drrathhealthalliance.com/products/vitacorplus.html>. Last accessed 23/1/2006.

⁹ http://www4.dr-rath-foundation.org/NHC/cancer/cellular_solutions.htm. Last accessed 23/1/2006.

¹⁰ http://www4.dr-rath-foundation.org/NHC/cardiovascular_disease/cellular_solutions.htm. Last accessed 23/1/2006.

¹¹ http://www4.dr-rath-foundation.org/NHC/diabetes/cellular_solutions.htm. Last accessed 23/1/2006.

¹² <http://www4.dr-rath-foundation.org/pdf-files/cellularhealthseries.pdf>. Last accessed 23/1/2006.

¹³ http://www4.dr-rath-foundation.org/THE_FOUNDATION/press_release20050615.htm. Last accessed 23/1/2006.

¹⁴ <http://www4.dr-rath-foundation.org/> Last accessed 23/1/2006.

¹⁵ http://www4.dr-rath-foundation.org/open_letters/img-nyt0506/speech_drrath.htm. Last accessed 23/1/2006.

¹⁶ See <http://www.drrathhealthalliance.com/products/vitacorplus.html>, <http://www.drrathhealthalliance.com/products/epican.html>,

products on the internet at high prices relative to many multivitamin supplements.¹⁷ He appears to make considerable profits. A German court found that his net income was *at least* 15,000 Euros per month.¹⁸ He travels extensively, runs a number of operations in different countries, including the Netherlands, South Africa and the United States, and runs numerous advertisements including full-page advertisements in the *New York Times*.¹⁹

It appears that Rath began operating in South Africa in 2004 (although it is possible that his South African enterprise predates this). He set up a section 21 company called the Rath Health Foundation Africa and placed adverts in national newspapers. He has distributed pamphlets, posters and newsletters in large numbers in Cape Town, particularly Khayelitsha (the site of South Africa's first public sector antiretroviral treatment programme), as well as other parts of the country. Many of these are translated into multiple official languages. They essentially state that vitamins reverse the course of AIDS and that antiretrovirals make AIDS worse. For example, a newsletter published by Rath and circulated widely in Cape Town states:

‘Anti-retroviral (ARV) drugs are no answer to the AIDS epidemic. None of them can claim to prevent or cure AIDS. Even worse, all ARVs are severely toxic and attack the immune system of patients already suffering from immune deficiency. As a result the immune system of AIDS patients taking ARV drugs is further weakened. This explains the frequent outbreak of tuberculosis and other infectious diseases in patients taking ARVs (Rath Health Foundation Africa, 2005: 2).’²⁰

His pamphlets exaggerate the value of micronutrients. A typical headline in his pamphlets is “Clinical Proof: Micronutrients reverse the course of AIDS.”²¹ Here are other Rath claims:

<http://www.drrathhealthalliance.com/products/drrathsvitacforte.html>.

¹⁷ The author has compared Rath's *Vitacor Plus* to multivitamins available in South African pharmacies. Even the high-end range multivitamins are typically about half the price of *Vitacor Plus*. Furthermore, Rath's sales websites encourage patients to purchase multivitamin programmes which entails taking two or three of his products for over \$50 per month.

¹⁸ When, in 2003, a German court fined Rath 45,000 Euros for misleading advertising, it stated: “The defendant lives in normal above-average economic circumstances and has a monthly net income of *at least* 15,000.00 Euro” [emphasis added]. Certified translation of Magistrates Court Tiergarten judgment against Dr. Matthias Wilfried Rath., Ref. no. 333 Cs 45/02. Copy obtainable from the author upon request.

¹⁹ The author has a copy of an invoice for just under \$100,000 from the *New York Times*.

²⁰ It is important to note that HAART actually reduces the incidence of TB and other opportunistic infections.

²¹ Rath Health Foundation Africa, 2005, pamphlet distributed in Khayelitsha. Annexure NG22 in the founding affidavit of current litigation by the Treatment Action Campaign against Rath. See

‘Dr Rath is the world renowned scientist and physician who led the breakthrough in the natural control of several of today’s most common diseases.’²²

‘Today, 15 June 2005 is an historic day for the people of South Africa, Africa and the entire world. For the first time in history dozens of patients have gathered in Cape Town to document with their own lives, that the course of AIDS can be reversed naturally.’²³

‘Thus, with micronutrients alone, the AIDS patients could reverse the symptoms of AIDS and lead almost normal lives again.’²⁴

Cloaking his pseudo-science in the language of African development, Rath writes:

‘Over the past decades the pharmaceutical multinationals - the drug cartel - has turned South Africa and the entire African continent into a dumping ground for their toxic ARV drugs. AZT and other ARV drugs are 'chemo' drugs that are being used on AIDS victims because the 'chemo' market with cancer is about to collapse globally.’²⁵

‘These are truly historic times and the people of Africa have every reason to celebrate. Billions of rands currently being wasted on purchasing toxic ARV drugs can now be released to combat the primary cause of death in Africa: poverty and malnutrition. We, the people of South Africa, are in this struggle firmly on the side of our government, a government that has become the beacon of hope for the entire developing world.’²⁶

Rath's pamphlets and posters also contain attacks on his opponents, who he generally accuses of being fronts for, or infiltrated by, the pharmaceutical industry.²⁷ The fact that Rath sells pharmaceutical products is ignored.

<http://www.tac.org.za/Documents/RathCases/NathanGeffenFoundingAffidavit.doc>.

²² *Ibid.*

²³ http://www4.dr-rath-foundation.org/THE_FOUNDATION/press_release20050615.htm. Last accessed 23/1/2006.

²⁴ *Ibid.*

²⁵ Rath Health Foundation, http://www4.dr-rath-foundation.org/THE_FOUNDATION/youcan2005dec/02.html. Last accessed 27/1/2006.

²⁶ *Ibid.*

²⁷ Rath, M., 2005, http://www.dr-rath-foundation.org.za/open_letters/open_letter_2005_05_06.htm. Last accessed 25/1/2006.

As noted in the introduction, Rath has formed alliances with the THO and SANCO. Many of his advertisements in South Africa are placed in the name of his foundation and these two organisations.²⁸ The Treatment Action Campaign (TAC) litigated against Rath seeking an interdict against continued defamation. The THO, which was not cited in TAC's court papers, requested to join Rath as co-defendants which they then did. Opposing protests were held outside the court and Rath was supported by the THO, SANCO and NAPWA demonstrators.²⁹ SANCO members run Rath's programmes in townships. Rath has also employed several outspoken AIDS-denialists (that is, those who deny the link between HIV and AIDS and oppose the use of HAART) such as the American David Rasnick³⁰, a South African lawyer (Anthony Brink) and Professor Sam Mhlongo of the Medical University of South Africa.³¹

Rath has run an experiment in Khayelitsha, giving high-dose vitamins, packaged in bottles with his branding on them, to people with HIV. The experiment contained no control group, received no ethical committee approval and breached numerous ethical norms (London 2005). Rath claimed that none of the patients on the trial had previously received antiretrovirals. The sample size was reported by Rath as 15 and then later 18. He published the results of the trial as newspaper advertisements in the *Mercury* and subsequently the *New York Times*, *International Herald Tribune* and the *Namibian*.³² The advertisements claim that micronutrients reverse the course of AIDS without the need for antiretrovirals. They contain anonymous anecdotal testimony by patients on the trial. No peer-reviewed journal has published his results and given the severe flaws of the methodology, none are likely to.

Separate investigations conducted by the news agency Health-e and the TAC have indicated that a number of patients on Rath's trial died including Marietta Ndziba who was at the forefront of Rath's advocacy and gave testimony to the benefits of Rath's vitamins on his South African website, in his newsletter and at a press conference. Health-e interviewed two women still alive on Rath's trial

²⁸ See annexure NG25 in TAC and SAMA v. Rath and Others, Cape High Court. There are many other examples. Originally Rath only had the support of the Khayelitsha branch of SANCO, but recently other sections of SANCO appear to have joined his campaign.

²⁹ See <http://www.tac.org.za/Documents/DefamationCase.html> for TAC's court papers.

³⁰ Brink states he is a Rath employee in an affidavit in TAC's defamation case against Rath. Rasnick is identified as a researcher with Rath's South African Foundation on http://www.dr-rath-foundation.org.za/open_letters/img-nyt0506/drrasnick.htm. Last accessed 23/1/2006.

³¹ See http://www.dr-rath-foundation.org.za/open_letters/open_letter_2005_05_06.htm. Last accessed 23/1/2006.

³² See NG27 in TAC and SAMA v. Rath and Others, Cape High Court. The advertisements are materially identical to http://www.dr-rath-foundation.org.za/open_letters/open_letter_2005_05_06.htm. Last accessed 23/1/2006.

and used in his advocacy materials who stated that they had been taking antiretroviral treatment all along.³³

Harvard researchers have found evidence in a double-blind placebo controlled study that multivitamins help slow the progression of HIV-disease (Fawzi *et al*, 2004). However, the benefit was small compared to antiretrovirals³⁴ and the study participants were Tanzanian women (recruited while pregnant) and therefore it is not clear that the results can be generalised to populations with better food security. When Rath used the results of this trial to promote his vitamins as an alternative to HAART (Rath 2004), the Harvard Study authors condemned Rath's misinterpretation of their research (Harvard School of Public Health, 2005). Not only did Rath misinterpret the findings to suggest that vitamins were an effective alternative to HAART, but his products do not contain the same set of multivitamins or dosages as the study. In any case, it is policy for multivitamins to be made available to people with HIV in the public health system, so it is not clear why Rath should believe there is a need to intervene with his own multivitamins.

Rath characterises AIDS as a disease that can be resolved solely through nutritional supplement intervention. It is undisputed that nutrition is important in the management of HIV. There is also a complex interplay between HIV and nutritional status (see, for example, Deschamps *et al.*, 2000; Berhane *et al.*, 1997; Beach *et al.*, 1992; Maas *et al.*, 1998). Undernourishment exacerbates HIV-disease. But there is no evidence that maintaining good nutrition reverses or stops the progression of HIV to AIDS.

A consensus statement emanating from a World Health Organisation consultation on nutrition and HIV in Durban in 2005 states

'Adequate nutrition cannot cure HIV infection but it is essential to maintain the immune system and physical activity, and to achieve optimal quality of life ... The life-saving benefits of ARVs [HAART] are clearly recognized. To achieve the full benefits of ARVs, adequate dietary intake is essential' (World Health Organisation, 2005).

Critically, it states

³³ <http://www.health-e.org.za/news/article.php?uid=20031317>. Last accessed 23/1/2006.
http://www.tac.org.za/ns02_11_2005.htm. Last accessed 23/1/2006.

³⁴ There was no reversal of disease-progression, that is, CD4 and viral loads continued to decline in the multivitamin arm. Progression to AIDS or death was high in both the placebo and vitamin arms (31% v. 24%).

‘There is a proliferation in the marketplace of untested diets and dietary therapies, which exploit fears, raise false hopes and further impoverish those infected and affected by HIV and AIDS’ (*ibid*).

Rath has a number of rulings and warnings against him. The Advertising Standards Authority of South Africa (ASASA) has ruled that he can no longer advertise unless he submits his advertisements to ASASA’s advisory committee for approval.³⁵ The British Advertising Standards Authority has also ruled against his advertisements³⁶ and the US Food and Drug Administration has issued a caution against him for misleading advertising on the internet.³⁷ He has two German court judgments against him for misleading advertising, including his claim that he is a world renowned scientist,³⁸ and a Dutch court interdicted him from continuing to make false libelous statements about a competitor.³⁹ He has been criticised in public statements by UNAIDS, South African Medical Association, Southern African HIV Clinicians Society, Congress of South African Trade Unions (COSATU), the University of the Witwatersrand and others.⁴⁰ Rath’s reaction to criticism is to allege that his accusers are fronts for the pharmaceutical industry. This allegation has been made against UNAIDS,⁴¹ TAC,⁴² COSATU,⁴³ ASASA⁴⁴ and others. He is also suing over 20 people and organisations in South Africa for defamation.⁴⁵

³⁵ ASASA., 2005, Dr Rath Health Foundation/TAC & Another/ 1861. Available at http://www.tac.org.za/newsletter/2005/ns07_09_2005.htm. Last accessed 23/1/2006.

³⁶ Advertising Standards Authority., 2000, Non-broadcast adjudication, 8 November. This ruling can be found on www.asa.org or as one of the annexures in the founding affidavit of TAC and SAMA v. Rath and Others, Cape High Court.

³⁷ <http://www.fda.gov/cder/warn/cyber/2002/CFSANvitacor.htm>. Last accessed 23/1/2006.

³⁸ Certified English translations of these can be found as annexures in the founding affidavit of TAC and SAMA v. Rath and Others, Cape High Court.

³⁹ The case was brought by Numico against Rath for making “improper allegations”. The court ruled in Numico’s favour on 15/11/2000.

<http://www.numico.com/NR/rdonlyres/072AFAE0-2610-4B45-8ABC-EED69364E343/273/CaseDrRath151100.pdf>. Last accessed 23/2/2006.

⁴⁰ See <http://www.tac.org.za/Documents/RathCases/RathsWrongs.htm> for a partial list of statements condemning Rath. Last accessed 23/1/2006.

⁴¹ http://www.dr-rath-foundation.org.za/open_letters/open_letter_2005_05_06.htm. Last accessed 23/1/2006.

⁴² *Ibid*.

⁴³ http://www4.dr-rath-foundation.org/THE_FOUNDATION/youcan2005dec/02.html

⁴⁴ Advertisement placed in *Sowetan* 11/3/2005. Also see http://www.dr-rath-foundation.org.za/open_letters/open_letter_no_censorship.htm which is not as strongly worded as the *Sowetan* advertisement. Last accessed 23/1/2006.

⁴⁵ Hassan, F. 2006. Report of litigation against and by Matthias Rath for TAC NEC, 2006. pers. comm., 18 January.

State support for Rath

There have been several incidents which provide evidence of the Minister of Health's support for Rath's activities.

In an answer to a question in Parliament on 15 June 2005, the Minister stated that she had a meeting alone with Rath on 16 April. She added that they “discussed his concern for people infected with HIV and suffering from the impact of AIDS”. She also stated that she would “only distance myself from Dr Rath if it can be demonstrated that the vitamin supplements that he is prescribing are poisonous for people infected with HIV.”⁴⁶

The Minister was quoted in a *Business Day* interview stating “They [Rath's South African organisation] ... are not undermining government's position. If anything they are supporting it. Our own programme talks about vitamins and micronutrients ... ” (Kahn, 2005).

The Minister addressed a meeting held in Khayelitsha, Cape Town on 16 April 2005. During question time, numerous members of the Khayelitsha community asked the Minister, in one way or another, to condemn the activities of Rath. She refused to do so (Kamkam 2005).⁴⁷

Rasnick and Mhlongo presented their denialist views and findings of the Rath clinical trial at the National Health Council in Midrand on 23 September 2005, at the invitation of the Minister of Health.⁴⁸

Furthermore some of Rath's publications claim government support. For example, “The Dr. Rath Health Foundation Africa has the support of our Minister of Health and our Government. The vitamin programmes used are qualified as food and nutrition. As opposed to toxic ARV drugs, these programmes are safe because they are natural. Don't fall for the dirty tricks of the Drug Cartel: trust our Government and those who support it.” Government has not denied or condemned these statements (Rath Health Foundation Africa, 2005).

Rath has also attacked the leaders of COSATU , the ANC's alliance partner, stating “For example, `leaders' of the Congress of South African Trade Unions (COSATU) have invested tens of millions of rands from the pension funds of

⁴⁶ 15 June 2005, answer to question No. 59 in National Assembly. Annexure to TAC's founding affidavit in TAC and SAMA v. Rath and Others.

⁴⁷ Community Health Media Trust also has video footage of the interaction between the Minister and the audience.

⁴⁸ Achmat, A., 2005, Affidavit in case TAC and SAMA v. Rath and Others.

millions of COSATU members into pharmaceutical multinationals and drug companies via its investment arm. Did these COSATU 'leaders' duly inform their members about the fraudulent nature of the pharmaceutical 'business with disease'? Many COSATU members are AIDS victims themselves – did they give their approval to take their money for helping to spread ineffective and toxic drugs? This information answers the question for millions of COSATU members, why some individuals in the present COSATU leadership consistently attack their own government on its steadfast position to provide effective and safe solutions to the AIDS epidemic ... COSATU is compromised by the interests of the drug cartel ...” (Rath Health Foundation Africa, 2006: 2). Government has not come to COSATU's defence.

TAC and Medecins Sans Frontieres lodged separate complaints against Rath and his associates with the Medicines Control Council (MCC) and the Department of Health in early 2005. However, no public action has yet been taken against Rath. After months of correspondence (much of it unanswered by government) attempting to get action taken, TAC, with the South African Medical Association, has proceeded with litigation against the Minister of Health, Rath and others.⁴⁹

In addition, government has been one of the main funders of NAPWA, an organisation that openly supports Rath and that has admitted receiving funds from his South African organization (*Mail & Guardian*. 2005).⁵⁰ Rath also donated money to the Medical Research Council (MRC), a statutory body. The donation was advertised on their website. However, when the TAC requested why this had occurred, the MRC responded that the money had been returned (MRC, 2006, pers. comm.). Anthony Mbewu, the head of the MRC recently spoke to the Parliamentary Health Portfolio Committee about the importance of nutrition multivitamin supplements in slowing the progression to AIDS whilst casting doubt on the value of HAART in resource-poor settings:

‘Little is known about the length of survival of patients on antiretroviral therapy in resource poor settings. Data from ACTG studies in the USA, using regimens similar to those we use in South Africa suggest that median survival once started on ARVs is likely to be of the order of several years but this is very tentative (Mbewu 2005).’

⁴⁹ <http://www.tac.org.za/Documents/HealthMinisterCase.html>. Last accessed 25/1/2006.

⁵⁰ NAPWA also wrote a letter of support for Rath included in the papers of the interdict against defamation court case between TAC and Rath heard in the Cape High Court in 2005.

This statement is highly misleading because there is a great deal of scientific evidence on the efficacy of HAART – some of it coming from sites in South Africa, not just the United States (for example, Badri, 2004; Coetzee 2004 *et al*).

Criticisms of Rath by some government officials

It is important to note that government is not uniform in its support for Rath. Many civil servants and ANC politicians oppose Rath, and are uncomfortable with the courting of AIDS-denialists by the President and Minister of Health. For example, a nutritional expert in the Department of Health told a Health-e reporter that Rath's products were in breach of the Medicines Act (Bodibe 2005), and the Western Cape Provincial Government released a statement on 23 March 2005 condemning people creating confusion about HAART (Western Cape Provincial Government, 2005). Although this statement did not refer to Rath directly, it is reasonable to assume it was aimed at him. One senior Western Cape provincial civil servant spoke out against Rath. He has since resigned. Another senior ANC member in the Western Cape spoke out against Rath but was instructed to apologise (Cullinan 2005a).

Rath's foundation managed to distribute his materials to the pigeon hole of every Member of Parliament. It was an action that resulted in considerable adverse publicity for him. Former Education Minister, Kader Asmal, who is a Member of Parliament and senior member of the ANC responded to Rath's materials in writing, telling him to go away using the Afrikaans swear word “*Voetsek*”. Asmal's attack was widely reported and welcomed in the media, with the consequence that Rath is now suing him for defamation. However, the ANC has not defended Asmal publicly (Michaels 2005).

Other events that, with further investigation, might indicate state support of Rath

There are other events that have occurred which point to state support for Rath although in these cases evidence is not clear cut. During a highly publicised court case between TAC and Rath in 2005, protestors from the opposing sides faced each other outside the Cape High Court. The placards of the Rath protestors indicated support for the Minister of Health, while in court Christine Qunta, who has close ties to the ruling party and is the deputy-chair of the South African Broadcasting Corporation (SABC) board, came to watch proceedings. The TAC was subsequently notified that her legal firm would represent Rath.

In a further incident, Rath's employee, Anthony Brink, has written that President Mbeki, a few years ago, asked Sam Mhlongo (who also works with Rath) to establish an opposition to TAC (Brink, 2004). The President's office appears to have denied this, though the President himself has not commented directly (*Mail & Guardian*. 2005). Although Brink is an unreliable source, it is likely he or Mhlongo have influence with the President. Alistair Sparks, in his book *Beyond the Miracle*, writes “Mbeki himself confirmed that the first person to draw his attention to these dissident websites was ... Anthony Brink... Brink came upon the writings of the AIDS dissidents in 1996, and after much surfing and reading became convinced they were right and that the drug AZT in particular was dangerously toxic... This prompted a response defending the drug from Desmond Martin, president of the Southern African HIVAIDS Clinicians Society. After more exchanges, Brink contacted President Mbeki and sent copies of the debate between himself and Martin. 'That was the first time I became aware of this alternative viewpoint,' Mbeki told me.” (Sparks, 2003: 286).

Lysenkoism in the Soviet Union

State support of Rath has some similarities with the Lysenko affair in the former Soviet Union. Trofim Lysenko (1898-1976) was a pseudo-scientist who, with the support of Stalin rose to the top of Soviet biology, becoming the president of VASKhNIL, the All-Union (Lenin) Academy of Agricultural Sciences, in 1938. He retained this position until 1956, lost it for a few years and then regained it in 1961 with Khrushchev's support. He lost the position again in 1962, but maintained much of his power. After Khrushchev's fall, Lysenko lost power in 1965 following an investigation of his activities (Soyfer, 1994: 223-294).⁵¹

Lysenko was born into a Ukrainian peasant family and lacked scientific training. Nevertheless he promoted two major pseudo-scientific theories. In 1925 he began exposing plants to low temperature in order to accelerate their development and flowering, a process known as vernalisation (*ibid*). While this was not necessarily a pseudo-scientific project, Lysenko exaggerated and falsified his data in order to make pseudo-scientific claims about the success of vernalization. Lysenko, however, is more notorious for his pseudo-scientific opposition to Mendelian genetics on the grounds that it was “bourgeois” science, and his support for Lamarckism, a discredited form of evolution.

⁵¹ See also, ‘Turning the pages back...’ 1976
<http://www.ukrweekly.com/Archive/1996/469612.shtml>. November 20. Last accessed 26/1/2006.

Lamarck was an 18th century scientist who proposed a theory of evolution, for which some, not unjustifiably, have called him the “father” of evolution (Gardiner, 1957: 140-51). He hypothesised that inheritance is acquired by organisms passing environmentally acquired characteristics to their offspring. The classic example is giraffes. Lamarckists would claim that giraffe necks became longer because adult giraffes stretched their necks to reach higher leaves. This act of stretching gets passed onto their offspring in the form of a longer neck. This is incompatible with the discovery of the genetic mechanism of inheritance by Mendel in the 1860s.

Given the state of knowledge of natural selection and genetics throughout the twentieth century, Lamarckism as an explanation for evolution is absurd but it dominated Soviet biology for a generation.⁵²

Tragically, Lysenko's shrewd political manouvering and ruthlessness resulted in him finding favour with Stalin who proceeded, starting in the mid-1930s, to purge geneticists in the Soviet Union (Soyfer, 1994: 60-158). Lysenko and his supporters organised the arrests of thousands of scientists, many of whom were tortured, died in labour camps or were executed, particularly during the late 1930s but also following Lysenko's domination of power in 1948. In 1940 he had one of the world's top biologists, Nikolai Vavilov, arrested. He also organised the arrest of many of Vavilov's colleagues and supporters. His theories were put into practice on Soviet collective farms resulting in crop failures and, as argued by some writers (Soyfer, 1994; Gardiner, 1957), famine-related deaths.

After World War II Lysenko's career suffered a setback. Andrei Zhdanov, close associate of Stalin, organiser of the Cominform and Stalin's post World War II purger of writers and artists, and his son Yury exposed Lysenko's lies. Ordinarily, a target of Zhdanov's anger would have meant, at best, the end of a career. But Stalin continued to support Lysenko resulting in Yury Zhdanov publishing a written apology to Stalin for insulting Lysenko. (Soyfer, 1994: 168-182, 190-191)

Lysenko's power reached its zenith at the August 1948 VASKhNIL Session. The meeting was packed with Lysenko's supporters and he delivered a speech explaining his Lamarckist ideology (Lysenko, 1948). Another purge of geneticists ensued.

⁵² Some inherited characteristics do have environmental origins. They are usually undesired (for example, alcohol foetal syndrome, child substance addiction). However, such examples are exceptional. Lamarckism is not adequate or plausible as a mechanism for evolution.

Lysenko became well-known in the West following the 1948 VASKhNIL Session. Many pro-Stalin communists supported him, although Dominique Lecourt (1977) wrote a Marxist anti-Stalinist critique of Lysenkoism. Lysenko lost power in 1965, but his effect on Soviet science lingered. A Soviet book on Soviet Agriculture published in 1977 creates a fantastical picture of the successful growth in Soviet crop production and does not mention the failures, some of which were at least partially due to Lysenko (Morozov, 1977). Soyfer (1994: 96) points out that Gorbachev sought scientific advice from a once Lysenko supporter, Maltsev, as late as 1987. He cogently argues that the after-effects of Lysenko's influence continued until after the fall of the Soviet Union.

Despite the repression inflicted by Lysenko, there were Soviet scientists who denounced him, some of whom even survived his purges. Vavilov appeased Lysenko for much of the 1930s, possibly to attempt to protect those working for him. But once he became convinced that Lysenko had to be stopped, he made one of the most poignant attacks on Lysenkoism

‘We shall go to the pyre, we shall burn, but we shall not retreat from our convictions. I tell you, in all frankness, that I believed and still believe and insist on what I think is right, and not only believe – because taking things on faith in science is nonsense– but also say what I know on the basis of wide experience. This [genetics] is a fact, and to retreat from it simply because some occupying high posts desire it, is impossible.’ (*ibid*: 136)

Vavilov died in prison in 1943.

Discussion

Support of pseudo-science by leading politicians in modern states is not unique to South Africa (see, for example, Wheen, 2004). However two features render the Lysenko affair more serious than usual. First, the political leadership of the Soviet Union directly interfered in the conduct of science and allowed pseudo-scientific theories to inform critical aspects of Soviet policy. Second, many people died as a consequence of Lysenko's actions including his rivals and possibly ordinary Soviet citizens who endured malnutrition or starvation as a result of implementing his theories.

These two features can be generalised as (1) state support for pseudo-science such that it influences policy and (2) deadly consequences to the state's own citizens because of this state-support for pseudo-science.

This paper has provided details on South African government support for pseudo-science. It is also likely that many have died as a result of the state's delay in implementing a mother-to-child HIV transmission reduction programme until it was forced to do so by court order in 2002, the late and slow implementation of HAART in the public sector, and the confusing messages from the President and Minister of Health that have undermined prevention efforts and programmes aimed at encouraging people to get tested and treated. Therefore state support of AIDS-denialism in South Africa contains the above two features and is comparable to Lysenkoism.⁵³

There are many differences between the South African and Soviet cases. Lysenkoism resulted in much greater repression of scientists. No South African scientists have been imprisoned, harmed or directly had their careers destroyed as a result of state-support for AIDS-denialism. The scientific consensus is still dominant in almost all South African academic institutions, though it is under threat at the MRC and possibly also the MCC. Lysenko was consistently supported by the Soviet media, with some exceptions, while the South African media has consistently supported the scientific consensus, albeit with many exceptions. Political opponents of Lysenko were suppressed while political opponents of AIDS-denialism operate successfully in South Africa. Furthermore, the scientific consensus has made gains in policy-making, albeit delayed and poorly implemented ones.

These differences are probably a consequence of constitutionally guaranteed political freedoms in South Africa, including the vote in a multiparty system, right to assembly and academic freedom. Compared to the Soviet Union under Stalin, South Africa has an independent judiciary and numerous civil society organisations critical of government HIV policy, including the TAC which has been particularly successful so far at countering AIDS-denialism and pseudo-scientific attacks on the efficacy of HAART. Unlike the Soviet Union, South Africa has a free press which has not shirked from criticising government's HIV policies. It also has democratic institutions and bodies that have helped counter AIDS-denialism such as the Human Rights Commission, NEDLAC, Competition Commission, Gender Commission, Broadcasting Complaints Commission as well as private institutions such as the Advertising Standards Authority.

But there are also concerning similarities. The current leadership of the ANC has been intolerant of internal dissent over HIV/AIDS policy. Very few ANC politicians have spoken out against the denialists. At the ANC National

⁵³ It is possible that these two features of Lysenkoism are emerging in the United States. See Mooney (2005).

Executive Committee meeting in early 2002 AIDS-denialist voices, led by the late Peter Mokaba, overwhelmed dissenters expressing the scientific consensus (Heywood, 2004). Hardly any government officials speak on HIV thereby rendering the Minister of Health's pseudo-scientific views much more vocal.

Witch-hunting has also occurred. For example Cabinet held back an MRC report describing the rise in adult mortality due to HIV (Dorrington *et al*, 2001). The report was then leaked and the MRC board conducted an investigation, apparently unsuccessful, into how it was leaked.

There are also striking similarities in rhetoric between Lysenkoism and AIDS-denialism. Lysenko created a dichotomy between “bourgeois” genetics and his own theories, which he portrayed as proletarian and revolutionary. Stalin supported this dichotomy. The emphasis on nature being malleable to human will fitted his conception of Marxism and he appeared to sympathise with Lamarckism as far back as 1906 in his book *Anarchism or Socialism?* (Soyfer, 1994: 200). Likewise AIDS-denialists in South Africa, as well as the Minister of Health and the President, have described a dichotomy between interventions referred to on the one hand as “Western”, such as antiretroviral treatment which they argue is pushed upon Africa by pharmaceutical companies and their lackeys, and on the other hand African interventions such as traditional medicine (Mbeki, 2000, 2001).⁵⁴

Both dichotomies are false but both were calculated to garner political support. For example, Vavilov was a loyal supporter of the Soviet Union who enhanced its prestige among international scientists. But Stalin, Lysenko and the Soviet media painted a picture of Lysenko rising because of his peasant roots to overcome the dogmas of the bourgeois geneticists, represented primarily by Vavilov. The collective farmers implementing Lysenko's methods were encouraged to think of themselves as scientists. Stories were told in the Soviet press of Lysenko's advice, implemented by simple peasants, resulting in improved harvests. Lysenko made grossly exaggerated predictions of harvest growth if his methods were implemented, while Vavilov and the geneticists admitted truthfully that their research would take years to achieve even modest results. Lysenko's message was definitely more palatable, for both Stalin and many citizens, during a time when food shortages had been caused by Stalin's collectivisation policies and then World War II.

⁵⁴ See also Mbewu comments above, references to Minister of Health's comments and Rath's comments above.

The pseudo-scientific critique of HAART is similarly without merit as the effectiveness of HAART cannot reasonably be contested on the basis of whether its development is “western” or “African”, but only on the basis of evidence. Even so, the antagonism created between African interventions and science is without foundation. Some antiretrovirals were tested partly in Africa, especially South Africa. Seminal research on HIV has been done, and continues to be done, in Africa by black scientists. Operational data on HAART from Africa is adding to the growing body of evidence of how best to implement it. It makes no sense to describe science, as it is conducted nowadays, as “western”. The scientific method is an enterprise conducted globally and contributed to by people from a myriad of backgrounds.

It is true that the primary motive of pharmaceutical companies is profit and that this often does not coincide with the best interests of patients. But those using pseudo-scientific arguments to promote their own AIDS treatments fail to point out that they are subject to the same problem. To protect patients from industry abuse, there is a regulatory framework in place. It is also crucial for patients to become familiar with HIV treatments so that they can monitor industry practices – using science, not pseudo-science – and make considered decisions about medicines. In the United States, various patient advocacy groups, such as ACTUP, Project Inform and Gay Men's Health Crisis have been established to do this. In South Africa, groups like the TAC and Medecins Sans Frontieres do it.

Furthermore many (though not all) of the AIDS-denialist interventions cannot in any reasonable sense be described as more African than the provision of HAART. Rath is German, the Van der Maas's are Dutch and their former colleague, Kim Cools, is Belgian (McGregor, 2005). Rath's pharmaceutical products are imported. Although Rath has entered an alliance with the THO, it is unclear how traditional healers will benefit if Rath's products are used as a treatment for HIV.

It is possible that Rath and the Minister of Health have obtained the support of a group of traditional healers by appealing to their dissatisfaction with the medical establishment and the legislative environment governing their practices. For example, the *Witchcraft Suppression Act*, which was passed in 1957, effectively banned traditional healing and halted its development. While the scientific method for testing medicines was being developed and the concept of phased clinical trials was introduced to determine the safety and efficacy of a medicine for a particular ailment, traditional medicine was ignored and suppressed. The dissolution of African society structures during colonialism and apartheid also undermined the development of traditional medicine and possibly resulted in useful knowledge accumulated over generations being lost. Health-care, on the

other hand, under apartheid excluded blacks from the same services as whites and many blacks continue to experience the historical indignities still found in the public health system, exacerbated by today's severe resource shortages. Furthermore, science under apartheid was given a bad name by racial pseudo-science and detrimental research by scientists such as Wouter Basson. Therefore by creating a dichotomy between African solutions and western interventions, pseudo-scientists like those associated with Rath, are able to generate sympathy among many traditional healers and African nationalists and antagonism towards the public health-care system and science.

But President Mbeki and Minister Tshabalala-Msimang's support of pseudo-scientists, the Minister's promotion of traditional medicine as an alternative to proven HAART and the alliance of the THO with Matthias Rath are counter-productive for traditional medicine. They will not further the development of traditional medicine or provide sustainable benefits for their patients that can compete with evidence-based medicines.

To promote a substance for the treatment of a particular disease, South African law requires MCC registration. MCC registration in turn requires evidence of safety and efficacy, ideally from randomised controlled clinical trials. It is likely that there are traditional medicines, either as they are currently prescribed by some traditional healers or in a pharmacologically modified form, that have a demonstrable therapeutic effect on some illnesses. The challenge is to provide funding to research and find such medicines and to protect traditional healers and their communities from unfair exploitation, such as biopiracy.

This is the position of the TAC. It is an approach, if adopted by government and the THO, that will develop traditional medicine and benefit communities. Some traditional healers have realised this. Indeed, at the last court hearing in 2005, traditional healers who turned out to support TAC outnumbered those supporting Rath.

State support of AIDS-denialism in South Africa continues to cost lives, undermine appropriate medical care, science and traditional medicine. A major challenge for civil society and researchers is to propose realisable mechanisms for reducing the risk and damage of state-supported pseudo-science.

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The **Democracy in Africa Research Unit** (DARU) supports students and scholars who conduct systematic research in the following three areas: 1) public opinion and political culture in Africa and its role in democratisation and consolidation; 2) elections and voting in Africa; and 3) the impact of the HIV/AIDS pandemic on democratisation in Southern Africa. DARU has developed close working relationships with projects such as the Afrobarometer (a cross national survey of public opinion in fifteen African countries), the Comparative National Elections Project, and the Health Economics and AIDS Research Unit at the University of Natal.

The **Social Surveys Unit** (SSU) promotes critical analysis of the methodology, ethics and results of South African social science research. The SSU seeks to integrate quantitative and qualitative research. Our core activities include the overlapping Cape Area Study and Cape Area Panel Study. The Cape Area Study comprises a series of surveys of social, economic and political aspects of life in Cape Town. The Cape Area Panel Study is an ongoing study of 4800 young adults in Cape Town as they move from school into the worlds of work, unemployment, adulthood and parenthood. Linked to the panel study is an ethnographic study of childhood and adolescence in post-apartheid Cape Town. The SSU also conducts research into inequality, diversity and social policy.

The CSSR maintains a close working relationship with the University of Cape Town's **DataFirst resource centre**. DataFirst provides training and resources for research. DataFirst's goals are: 1) to act as a portal to digital resources and specialised published material available to users internationally; 2) to facilitate the collection, exchange and use of datasets on a collaborative basis; 3) to provide basic and advanced training in data analysis; and 4) to develop and operate a web portal to promote the dissemination of data and research output via the internet.
