

**Tutorial discussion paper:** Inductive fallacies in arguments based on misleading statistics—  
Samples of manipulating raw statistical data found in *Canadian HIV and AIDS Surveillance Reports*  
—examples of *incomplete evidence, semi-attached figures and pseudo-precision*

The utility of health care policy may not always be the best guide to determine whether the policy is ethical or morally sound. Currently the strategy used worldwide to enhance the amount of money available for the HIV and AIDS industry involves the use of false and misleading statistics. Even though this manipulation of the facts is clearly very *useful* in this regard, two questions remain: is the manipulation of statistics ethical? Is evidence based on the manipulation of statistics legally admissible in a court trial?

To pick a specific example, consider a public service advertising campaign that was launched in 1987 by the US CDC agency (Center for Disease Control), as illuminated by the historian of African affairs, Professor Charles L. Gesheker. The theme of the CDC educational campaign was “If I can get AIDS, anyone can.” It was intended to increase public demand for government to make available increasing amounts of money for pharmaceutical research and product development to combat AIDS. To accomplish this, the claims made in the campaign exaggerated the risks of contracting AIDS through unprotected sex.<sup>1</sup> Professor Gesheker spells out how it was done:<sup>2</sup>

## I.

*Excerpted from Charles L. Gesheker (2007) “Myths and Misconceptions of the Orthodox View of AIDS in Africa,” Ethics and Politics, Vol. IX, no.2: 330-370.*  
<[http://www2.units.it/etica/2007\\_2/GESHEKTER.pdf](http://www2.units.it/etica/2007_2/GESHEKTER.pdf)>--Emeritus Professor of African History, State University of California, Chico.

From 1990 to 1992, CDC sponsored studies revealed that the proportion of heterosexuals (aged 18-49) in high risk American cities who reported having multiple sexual partners **increased** from 15% to 19%, while condom sales **decreased** by 1% in the same period. 65% of the respondents admitted that they used condoms either sporadically or not all. In general, Americans were not practicing safe sex in the early 1990s and teenage premarital pregnancies and venereal diseases were on the rise. Yet AIDS cases continued to decrease sharply in America. Even the fraction of Americans assumed to be HIV-antibody positive declined from an estimated 1 million in 1985 to 700,000 in 1996.<sup>3</sup>

Gesheker reveals similar distortions in Canadian surveillance reports of HIV and AIDS using statistics.

From 1981 through December 31, 1998 there had been a *cumulative* total of 16,236 cases of AIDS reported in Canada.

In 1995 alone, 1637 adult cases of AIDS were reported of which 1491 (91%) were males and 146 (9%) females.

But for 1998, there were only 279 cases—241 males (86.3%) and 38 females (13.7%), a total decrease of 75% in three years.

“The *actual* number of adult female AIDS cases reported in Canada plummeted by 75% from 1995 to 1998. In a country of 32 million people, 15.1 million of them women, there were only 38 female AIDS cases in 1998.

<sup>1</sup> Amanda Bennett and Anita Sharpe, “AIDS Fight is Skewed by Federal Campaign Exaggerating Risks,” *Wall Street Journal* (May 1, 1996) and David R. Boldt, “Aiding AIDS: The Story of a Media Virus,” *Forbes Media Critic* (Fall 1996).

<sup>2</sup> Quoted with the kind permission of the author, Charles Gesheker (2007). For full text see <[http://www2.units.it/etica/2007\\_2/GESHEKTER.pdf](http://www2.units.it/etica/2007_2/GESHEKTER.pdf)>

<sup>3</sup> Joseph A. Catania, et. al., “Risk Factors for HIV and Other Sexually Transmitted Diseases and Prevention Practices Among U.S. Heterosexual Adults: Changes from 1990 to 1992,” *American Journal of Public Health*, Vol. 85, #11 (November 1995), pp. 1492-99.

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“Yet because the *percentage* of women with AIDS went up from 9% in 1995 to 13.7% in 1998 even though the actual number sharply went down, the *Annual HIV and AIDS in Canada Surveillance Report* (April 1999) from the Bureau of HIV/AIDS and STD at the Canadian Laboratory Centre for Disease Control issued an alarmist warning that the risk of AIDS among Canadian women had *dramatically increased* by 25% to now comprise nearly 14% of all diagnosed cases, “the highest proportion observed since monitoring of the epidemic began,” thus re-affirming how statistics are easily misrepresented to advance claims of an ever-expanding AIDS epidemic.

“By 2004, the total number of AIDS cases annually reported in Canada had shrunk to 237, of whom 188 were males and 49 were females. Women account for 20% of all AIDS cases in Canada, but the latest report ignored the fact that the total number of female AIDS cases in Canada had actually **dropped 67%** from 1995 to 2004.

Finally, the same report noted with great alarm that while “the rising trend [rate of female AIDS] was seen in all age groups, it is most striking in the 15-29 year age group where the proportion of AIDS diagnoses attributed to females increased from 9.9% before 1994 to 45% in 2004.” It failed to mention that the actual number of female AIDS cases among all Canadian women, ages 15-29, had dropped 70%, from 30 cases in 1995 to just nine in 2004.<sup>4</sup>

## II.

### Discussion exercise:

**(i) Consider the following hypothesis that was printed in 2009 in a leading medical journal, highlighted in the box:**

In the article, "AIDS: Lessons Learnt and Myths Dispelled," *The Lancet* (Vol. 374, July 18, 2009), the authors stated that:

"Furthermore, AIDS remains the leading cause of death in African-American women in the USA." (p. 261)

**(ii) Consider the following statistical evidence:**

According to the CDC publication *Deaths: Final Data for 2007*, Vol. 58, #19 (May 20, 2010), a total of 141,276 black women died in the United States from all causes in 2007.

Major cardiovascular diseases accounted for 49,353 deaths (35%), cerebrovascular diseases accounted for 9,536 (6%), diabetes mellitus accounted for 6,966 (5%), chronic lower respiratory diseases accounted for 3,694 (3%), septicemia accounted for 3,462 (2.8%), influenza and pneumonia accounted for 2,657 (1.8%), while HIV disease accounted for 2,284 or 1.5% of all deaths among black American women in 2007.

In 2007, the total black American female population was 20,257,139 and HIV disease accounted for approximately 1.5% of all deaths in that cohort for 2007.

**(iii) Does this evidence strengthen, weaken, or have no bearing on the credibility of the hypothesis in the box?**

[Credit: Charles L. Gesheker—Ed.]

<sup>4</sup> *HIV and AIDS in Canada: Surveillance Report to December 31, 2004* (April 2005).

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### III.

#### Statistical inferences in *The Lancet* illustrating the efficacy of male circumcision for risk reduction HIV transmission

*Excerpted from*

#### The Deception and Dishonesty of African HIV/AIDS and Sexuality Statistics

Charles L. Gesheker, Professor Emeritus of African History  
 California State University, Chico Chico, California 95929 USA  
 Rethinking AIDS Conference November 7, 2009 Oakland, California  
 ©Charles Gesheker <charles.gesheker@rethinkingaids.com>

For over 25 years, the media has bombarded the public with stories purporting to tally AIDS cases and AIDS deaths in Africa, or to acclaim the benefits from various kinds of interventions, the latest being male circumcision. In this paper, I examine the empirical basis for a few recent studies and the methodology the researchers used to gather data and interpret its meaning, and then used those statistical results to request increased amounts of funds. The HIV/AIDS industry has peddled numerous theories about what is making Africans sick. While their hypotheses are often inconsistent with one another, most are based on thin evidence and fat speculation.

To know what's behind African mortality and morbidity, one must compare the state of African political economies in the first two decades of post-colonial independence (1957-1980) with what has happened since the early 1980s. In the 1960s, Africa was a net exporter of food. In 2008, the continent imported 24% of its food as hunger and famine became recurrent phenomena with severe emergencies in southern and central Africa, the Sahel and the Horn. The structural adjustment policies of the 1980s (that coincided with the onset of the "age of AIDS") caused decreased agrarian investments, rising unemployment, reduced social spending, diminished agricultural credits, and lower crop yields.

Africa was at a crucial point in its post-colonial history when westerners starting working on AIDS and its origins in Africa.

According to Oxfam, the number of sub-Saharan Africans living on less than \$1 a day nearly doubled from 160 million to 311 million between 1981 and 2001–5. In Central Africa, 55 percent of the people are undernourished.<sup>5</sup> "By the start of the 1980s, virtually every African country was manifesting signs of acute economic distress, reflected in a mounting and unsustainable debt burden, a permanent trade deficit and an acute fiscal crisis which meant that the state was unable to maintain basic infrastructure or fund essential social services."<sup>6</sup> The effects of structural adjustment policies in creating poverty are undeniable: the human costs were grave, the economic gains were slow in coming, and the decline of quality of life in Africa was palpable. Plainly stated, I reject the conventional HIV/AIDS assumptions and suggest that other things, aside from HIV or AIDS, are what continue to make Africans sick in the first place.

HIV/AIDS skeptics are obliged to read entire reports or research results and flag their errors, exaggerations, outright falsehoods and other malignancies. Here is the lead editorial from the October 3, 2009 issue of *The Lancet*:

"'Breakthrough'; 'landmark'; 'an important day for the planet.' Such were some of the reactions to the news released on September 24th that, for the first time, an HIV vaccine has shown a modest degree of efficacy in a phase 3 clinical trial...[In 1984, Margaret] Heckler declared that a vaccine would be available within 2 years. A quarter of a century on, it seems as though the journey is only now just beginning. The development of an effective and practical HIV vaccine will take *more*

<sup>5</sup> "Causing Hunger: An Overview of the Food Crisis in Africa," Oxfam Briefing Paper 91 (2006), p. 1.

<sup>6</sup> Paul Nugent, *Africa Since Independence: A Comparative History*. (New York: Palgrave Macmillan, 2004), p. 326.

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basic research, *more* collaboration, *more* money, and *more* trust and goodwill from *more* volunteers. But the latest findings present a tantalizing hope that such efforts could one day pay off [*emphases added*].<sup>7</sup>

What did this earth-shaking, promising trial actually find? Leave aside all the flaws, inconsistencies and disclaimers about HIV tests, none of which were raised in discussion by the researchers:

- 1) **Intervention group** of Thai volunteers - 8197 **received vaccines** over the 3-year period, at the end of which 51 were HIV+ (or 6/10 of 1%) 2) **Control group** of Thai volunteers - 8198 **received placebos** over the 3-year period, at the end of which 74 were HIV+ (or 9/10 of 1%) This is an absolute difference of 3/10 of 1%. But hold on. Do not divert your glance from these HIV/AIDS magician's numbers. It is the **relative reduction**, i.e. the difference between 51 and 74, which amounts to a planet-saving 31% reduction!
- 2) On October 20, 2009, an Associated Press medical writer, Marilynn Marchione claimed "last month researchers announced that a two-vaccine combination cut the risk of becoming infected with HIV by more than 31% in a trial of more than 16,000 volunteers in Thailand."<sup>8</sup>

Finally, I want to examine briefly the statistics from investigations regarding male circumcision and alleged HIV protection. The first two randomized trials were based in Uganda and Kenya. The research results were reported in the British medical journal *The Lancet* in February 2007. According to the researchers, their studies showed that the circumcision of heterosexual men could reduce their risk of HIV infection by 50 to 60 percent.<sup>9</sup>

The results of the Ugandan and Kenyan trials were released to the media to coincide with UN World AIDS Day (December 1, 2006), two months *before* the studies were published in *The Lancet*. As one journalist wryly observed, "This unusual move produced worldwide publicity that was heavy on eye-catching headlines and light on details, because - in the absence of the published studies themselves - few journalists took the time to dig beyond the press releases made available to them."<sup>10</sup> A related issue that raises scientific concerns is the African trials' short duration, with initial results presented as definitive less than two years into the studies.

It is crucial to look closely at how the HIV/AIDS researchers arrived at their conclusions.

In Uganda, researchers started with 4,996 men and randomly divided them into two groups, medically circumcising one group (2,474 men) and leaving the other group intact (2,522 men). After 24 months, both groups were tested for HIV infection. Of the circumcised men, 22 tested positive, while 45 in the uncircumcised group tested positive. In other words, 67 out of 4996 (or 1.3%) were HIV-positive while the remaining 98.7 percent remained HIV-negative.

Researchers simply derived the 50 percent "risk prevention" figure from the difference in results between the two groups, i.e., the difference between 22 and 45. Hence, male circumcision was said to reduce heterosexual male acquisition of HIV from heterosexual women by 50%.

In a similar fashion, the Kenyan trials began with 2,784 men and randomly divided them, with 1,391 undergoing circumcision and 1,391 left intact. Two years later, testing showed 22 new

<sup>7</sup> "A (Prime) Boost for HIV Vaccine Research?" *The Lancet* (Vol. 374, Oct 3, 2009), p. 1119.

<sup>8</sup> Marilynn Marchione, "New Results Show Experimental AIDS Vaccine Only Marginally Effective," *Chico (Calif.) Enterprise-Record* (October 20, 2000).

<sup>9</sup> Ronald H. Gray, et al., "Male Circumcision for HIV Prevention in Men in Rakai, Uganda: A Randomized Trial," *The Lancet* (Vol. 369, February 24, 2007), pp. 657-666; and Robert C. Bailey, et al., "Male Circumcision for HIV Prevention in Young Men in Kisumu, Kenya: A Randomized Controlled Trial," *The Lancet* (Vol. 369, February 24, 2007), pp. 643-656.

<sup>10</sup> Gussie Fauntleroy, "The Truth About Circumcision and HIV," *Mothering Magazine* (July-August 2008), p. 45.

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infections among the circumcised men and 47 among those left intact. Astonishingly, neither group of researchers ever attempted to determine the HIV-status of any of the men's female partners, a glaring omission that effectively negates whatever statistical significance their findings are alleged to show.

After *The Lancet* articles appeared, I examined the studies' methodology and statistical relevance. The extremely small number of new infections in each group raised questions about extrapolating them to larger populations. In the Ugandan trial, a mere 8/10 of one percent of the circumcised men tested positive after two years, while 1.7 percent of the uncircumcised men tested positive.

Likewise, in Kenya, the claim of a 50 to 60 percent rate of risk reduction was based on 1.5 percent of circumcised men becoming infected, compared with 3.3 percent of those left intact. All told in the Kenya study, 2.4% of all men tested HIV-positive, while 97.6% remained HIV-negative.

These were microscopically small studies. But in the research world of AIDS in Africa, such numbers become "mutant statistics" which take on a life of their own and may have a remarkably long shelf life. The more they're repeated, the longer the shelf life. This is extremely important because policy decisions affecting millions of lives are based on sensational figures that may not reflect the reality on the ground.

Finally, the very latest study from Uganda sought to determine if there was any association between male circumcision and reduced risk of HIV infection among heterosexual female partners.<sup>11</sup> They found none.

The investigators identified 922 uncircumcised HIV-positive males, aged 15-49 who were asymptomatic for AIDS, and had CD4 cell counts above 350.

In the intervention group, 474 men were immediately circumcised. In the control group, 448 men were delayed circumcision for 24 months. The researchers randomly selected 92 HIV-negative women who were sexual partners of men in the intervention group (92 couples). Of those 92 women, after 24 months, 17 (18%) had become HIV positive.

They also randomly select 67 HIV-negative women who were sexual partners of men in the control group (67 couples). Of those 67 women, only 8 (12%) became HIV positive. In other words, among the female sexual partners of the circumcised males, a *higher* percentage of those women became HIV-positive! The researchers conceded that "the trial was stopped early because of futility [since] circumcision of HIV-infected men did not reduce transmission to female partners over 24 months..."<sup>12</sup> The research team found that consistent condom use was actually higher in the intervention group (50%) where there were more sero-conversions to HIV than in the uncircumcised control group (36%).<sup>13</sup> That conundrum aside, the investigators reflexively concluded, "condom use after male circumcision is essential for HIV prevention."<sup>14,23</sup>

They expressed concern that "circumcised HIV-uninfected men might use their circumcised status to negotiate unsafe sex."<sup>15</sup> One can only imagine what the researchers would say if someone asked them to speculate on what an actual dialogue might sound like in the "negotiation" for sex between the circumcised male and his unwitting female partner. This farce typifies how conventional HIV/AIDS researchers reduce African sexuality to lust and exoticism.<sup>16</sup>

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<sup>11</sup> Maria J. Wawer, et al., "Circumcision in HIV-infected Men and Its Effect on HIV Transmission to Female Partners in Rakai, Uganda: A Randomized Controlled Trial," *The Lancet* (Vol. 374, July 18, 2009), pp. 229-237.

<sup>12</sup> *Ibid.*, p. 229.

<sup>13</sup> Wawer, et al. op. cit. p. 236.

<sup>14</sup> Wawer, et al. op. cit., p. 229.

<sup>15</sup> Wawer, et al. op. cit., p. 235.

<sup>16</sup> For a general overview, see Curtis Keim, *Mistaking Africa: Curiosities and Inventions of the American Mind* (Boulder: Westview Press, 1999); for a useful but incomplete critique of the racism of conventional AIDS research in Africa, see Eileen Stillwaggon, *AIDS and the Ecology of Poverty* (New York: Oxford University Press, 2006), especially Chapter 7,

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## IV.

<b>Discussion exercise: contrasting factual statements and value judgments</b>
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The following texts are transcribed verbatim from *The Daily Graphic* (Accra) boxed inserts  
Tuesday November 26, 2013 edition,

Page 10 in the OPINION section

Under the headline “The case for a technical director for the Black Stars”

**Fact Sheet:**

- The coach of the Black Stars, Kwasi Appiah, has done a lot for Ghana Football.
  - We should go for a technical director if the times and competition demands that.
  - We need to do things differently if we are aiming to achieve different results.
- 

Page 71 in the NEWS section:

Under the headline: “5 Akuapem divisional chiefs revoke oath”

**Fact Sheet:**

- The chiefs and people of Akwapem have performed rituals to reverse a curse that caused deep rift among them.
  - The reversal of the curse was one of the conditions agreed on in the Koforidua Peace Accord signed by the chiefs on August 27, 2013.
  - The chiefs first poured libation and slaughtered a white sheep at a durbar held at the Millennium Palace of the Lartehene before sacrificing a bull in front of the palace in the full glare of the public.
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“Racial Metaphors: Interpreting Sex and AIDS in Africa.” [reprinted as “Racial Metaphors: sources of the behaviour modification strategy for fighting AIDS in Africa,” in *Reclaiming the Human Sciences and Humanities through African Perspectives*. Chapter 55. Eds. Helen Lauer and Kofi Anyidoho, 2011, Accra: Sub Saharan Publishers.] See also *AIDS in Africa: The Plague That Wasn't* by Charles L. Gesheker, in press.