A Long Wave Event

HIV/AIDS, Politics, Governance and "Security": Sundering the Intergenerational Bond?

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Abstract

There is a disharmonious resonance between the life cycle of the Human Immunodeficiency Virus and that of its human host. In heavily affected countries, many people live long enough to reproduce and then die, leaving behind numerous orphans. This process has implications that we do not understand. While some foresee social disorder arising from legions of poorly socialised and unruly children grown to adulthood, the evidence is far from clear. Those arguments and the evidence are reviewed here, particularly in relation to the links between premature death and electoral processes in Southern Africa.

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[2] My thanks to the following for most useful and informed comments on an earlier draft: Colette Clement, Sarah Knights, Bill Rau, Janet Seeley.

Twenty years or more ago the question of whether or not the HIV/AIDS epidemic was going to have "impacts" was widely disputed. Now we know differently. Those impacts exist, are poorly understood, and may have serious long-term consequences. We can either be aware we need to confront these some time in the future or, better, try to avoid them by taking action now. Acting now and in the near future to avoid impacts will save lives and suffering in other countries. As well as meeting these altruistic goals, such actions may even be in the long term self interest of donor countries. Whether or not these impacts include "security" effects, what these effects might be, whom they might affect, and how and why are all important questions to which we have few answers and little evidence on which to base our answers. My colleague at LSEAIDS, Gwyn Prins, recently reviewed some aspects of the HIV/AIDS and security agenda in these pages[3] and elsewhere in this issue we describe some of the problems of evidence associated with these questions.

Here I do two things: (a) discuss the existing evidence and argument and conclude that we cannot easily draw any clear link between the HIV/AIDS epidemic and "security"; (b) explore the issue of AIDS, politics and "security" from the perspective of the deep relations between the nature of the pathogen, its social effects and the resultant political processes and consider what we might possibly say about issue of HIV/AIDS and "security".

Security is a troubling and greatly evocative word. It can be taken to refer to the individual, communities, states or, most generally, the global community. Most often it is applied to states, and it is mainly in this sense that it is used here. However, such usage has dangers, not least neglect of other possible meanings, and also its linkage to a variety of events, such as an HIV/AIDS epidemic, in which the effects of these events are discussed as though their greatest and perhaps only importance is because they supposedly pose a threat to a particular state or group of states. In so doing, others meanings may be obscured or their importance neglected. There is a danger that this is happening in that some commentators are apt to draw too direct and simple

[3] G. Prins, AIDS and Global Security, International Affairs, 80, 2004, 931-52

a link between HIV/AIDS and security – and that on the basis of little solid evidence[4].

HIV and Humans: a disharmonious resonance

To begin with, we must attend to the evident disharmonious resonance between the life cycle of the virus, the length of infection in the individual human host and the length of a human generation. Put briefly, an infected person has children, these are orphaned and may grow up to become infected, but not before they have themselves had children – who are orphaned in turn. Hence a basic unit of social structure in most human societies, the three generation bond between grandparents, parents and the current generation – and on into the future – is rent asunder. Given mean life expectancies and reproductive cycles, such a bond probably spans about 70 years with variation depending on life expectancy and reproductive outcomes. In the absence of effective, sustainable and available ARV (antiretroviral) treatment regimens, a vaccine or behaviour change, this happens repeatedly. Moreover, this process should be read against the possible threat of developing viral resistance to existing ARV regimens when these are used widely in "resource constrained" – for which read poor and ill-resourced – settings where sustainability is dependent on donor commitment. There are two kinds of resistance, *acquired resistance* which manifests itself in an individual patient and is resistance to their particular drug regimen. Such resistance to individual ARVs or whole classes of ARVs is seen in as many as 20 per cent of patients seen in the UK and the US. In Thailand, recent reports suggest the appearance of widespread resistance to locally produced versions of Lamivudine, Nevirapine and Stavudine[5], [6]. This is not only resistance to the individual drugs but also to whole classes of these drugs. Second, and more worrying, is the possibility of viruses which have acquired resistance to particular ARVs or classes of ARVs being transmitted between

[4] This is most clear in the US administration documents cited below, and also and most recently in Garrett, L., HIV and National Security: Where Are the Links?, US Council on Foreign Relations July 18, 2005

[5] The Nation (Thailand), 15 July 2005

[6] Personal communication from Dr. Wasun Chantratita

people: this is *transmitted resistance*. The current evidence on this is very limited[7],[8],[9],[10], [11][12].

The epidemic is producing very large numbers of orphans in poor and politically fragile societies[13]. Children brought up in difficult circumstances develop a pragmatic and short term survival perspective[14],[15]. Furthermore, behavioural change messages about HIV/AIDS may have the unintended consequence of stigmatising the parental generation who are seen by their children as having acted sinfully and to have breached taboos. In many societies, and perhaps pronouncedly in Africa, respect for the ascendant generation is said to be a central cultural value. In such places and against the background of stigma, the intergenerational structural break may appear as loss of respect for elders in general: this at a time when rapid change is in any case already contributing to that process. In these circumstances, this breach is combined with an un-moderated pragmatic orientation towards the world, a rational orientation for children and young people who in any case are hard-pressed merely to survive from day to day. This may have substantial implications for social and political relations at the household, community, and ultimately the national level when these inadequately socialised people reach adulthood. Some observers of these processes see

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[7] Baggaley, R., Ferguson, N.F, Garnett, G.P., The epidemiological impact of antiretroviral use predicted by mathematical models: A Review, Imperial College, in *Emerging Themes in Epidemiology,* BioMed Central, 2005, *Emerging Themes in Epidemiology* 2005, **2**:9 (10 September 2005)

[8] O'Rourke, M. (2005). A Single Case of Multidrug-Resistant HIV and Rapid Disease Progression, AIDS Clinical Care http://aids-clinical-care.jwatch.org/cgi/content/full/2005/0301/1

[9] Smith, S.M. (2005). New York City HIV superbug: fear or fear not? Retrovirology, 2(14) http://www.retrovirology.com/content/2/1/14

[10] Wainberg, M.A. (2004). The emergence of HIV resistance and new antiretrovirals:are we winning? Drug Resistance Updates, 7, 163-167.

[11] Little S.J., et al., Antiretroviral-Drug Resistance among Patients Recently Infected with HIV New England J. Medicine, 2002;347:385-394

[12] UK Group on Transmitted HIV Drug Resistance, Time trends in primary resistance to HIV drugs in the United Kingdom: multicentre observational study, British Medical Journal, November 2005, pp. 1-6

[13] For a global account, see: UNAIDS/UNICEF/USAID, Children on the Brink 2004: A Joint Report of New Orphan Estimates and a Framework for Action, New York UNICEF, 2004.

[14] I am grateful to Dr Roland Msiska for this insight derived from his long term observation of a group of street children in Lusaka.

[15] For an extraordinary, country specific and disturbing account of the traumatising effects of the AIDS epidemic on orphans, see the recent unpublished PhD thesis by Marguerite Daniel, Hidden Wounds and Lost Dreams: orphanhood, exigency and the culture of silence in Botswana, University of East Anglia, Norwich, 2005.

these orphans as a threat to local and international order. Bluntly put, those who are orphaned may be indifferent to prevailing norms and values, or look for salvation in millenarian and fundamentalist beliefs of one kind or another, and may ultimately do this with assistance from a Kalashnikov or a bomb. There is as yet little evidence to suggest that this is happening or that it will happen but it is a view which is held by some of those who determine foreign policy in, for example, the United States. For these reasons, the implications of large scale orphaning and its relation to security do merit examination.

A recent comprehensive and relatively measured report by the South African Institute for Strategic Studies says:

> "The HIV/AIDS epidemic will cause major social changes in Southern Africa, and will most likely change the face of communities and societies in ways that we now find hard to imagine. In particular, the long-term consequences of the trauma many children will experience could be severe if adequate psychosocial care and support are not provided to all children affected by HIV/AIDS in the region. [16]."[17]

There should be no doubt that the HIV/AIDS epidemic is extremely serious. Its impact is also serious and extends over generations and may have global implications. Our response to its challenges raises many important questions with which we must engage when we consider (a) what we believe is actually happening; (b) what evidence we have for those beliefs; and (c) how we develop policies as part of that response. Whatever the uncertainties, when it comes to the implications of the HIV/AIDS epidemic for future politics and governance, we must take heed and we must act on the best information and advice that we can garner.

What is happening?

We first became aware of the HIV/AIDS epidemic in the early 1980s – assumed at that time to be confined to gay men in Europe and North America.

[16] Germann, S., Call to Action: What do we do?, chapter 5 in: Pharoah, R., ed., A Generation At Risk? HIV/AIDS, Vulnerable Children and Security In Southern Africa, Institute For Security Studies, Monograph No 109, December 2004, Pretoria, p. 112.

[17] It is odd that these authors speak about these changes in the future tense when the epidemic is already so old.

That was then: fast forward to now. We see a huge epidemic, indeed what some prefer to call a *pan*demic. It might be more honest to recognise that with viable vaccines at least a decade away – and this pessimistic prediction has already remained fairly constant for a decade or more – we are really living with an *endemic.* In other words, HIV/AIDS is not going away in the near or foreseeable futures. It will be a constant presence in the lifetimes of most of those reading this.

With its awful global reach, present on all continents and reported from every country in the world, resulting in millions of infections and millions of deaths, it is frequently compared to the Black Death. Thus,

> "The Black Death … better informs the discussion of HIV/AIDS, though it claimed its death toll, featuring the elimination of more than a third of the European population, in roughly eighteen months' time. Because the timeline of the Black Death was so short, it is easier to discern the impact the *Yersinia pestis* bacterium had on European societies. Striking similarities between HIV/AIDS and the Black Death can be seen, including the reshaping of the demographic distribution of societies, massive orphaning, labor shortages in agricultural and other select trades, strong challenges to military forces, an abiding shift in spiritual and religious views, fundamental economic transformations, and changes in the concepts of civil society and the roles of the state[18]."

It is not clear whether the comparison is really useful; but when it is associated with a security agenda, it accretes another level of threat which may inadvertently associate it with another aspect of the security agenda, "the war on terror". The combination of AIDS, orphans and terror begins to take on an independent life, perhaps regardless of either the strength of the evidence or the precise value of the parallel. In these circumstances, it becomes of the greatest importance to understand that HIV/AIDS confronts us with a new type of challenge – the challenge of a long wave event and how to begin thinking about such events.

Official statistics as published by UNAIDS, the UN agency charged with coordinating the global response to the epidemic, are astounding and awful.

[18] Garrett, L., HIV and National Security: Where Are the Links?, US Council on Foreign Relations July 18, 2005, p. 9.

Allowing for margins of error - and the pressures for exaggeration and spin born out of the natural demands of advocacy in an ever-more cacophonous arena of demands for humanitarian action in a troubled world[19],[20] - we must not remain unmoved The current situation is summarised in Table 1. Even given the limitations of current disease surveillance methods and epidemic models, these figures are terrifying. Whether or not a society's adult seroprevalence level is above 40 per cent (as in three southern African countries, Swaziland, Lesotho and Botswana), or at 35 per cent, 20 per cent or "only" 5 per cent is of importance – but of only limited importance. These are all appalling levels which bode ill for any society. This is a terrible disease which kills, slowly, again and again. In India, estimates of numbers of people infected top five million, with a range between 2.5 million and 8.5 million[21]. If the UK had a mortal infectious disease epidemic in where prevalence levels were reported by the Health Protection Agency at a fraction of the levels in Africa, India[22], Papua New Guinea, Ukraine, Russia or a host of other countries, something would have to be done! But the global figures do not terrify us enough, we do not comprehend their implications, the reality is geographically distant; their implications are distant in time. We do not attend to their implications. Why is this?

Table 1: Global summary of the HIV/AIDS epidemic, end 2004

[19] Barnett, T., Prins, G., Whiteside, A., Aids denial costs lives, Spectator 25 September 2004, pp.20-22

[20] Demographic and Health Surveys (DHS) have run seroprevalence studies in various places using different methods from UNAIDS and the US Bureau of the Census from whence UNAIDS obtains most of its statistics. Their estimates of prevalence have tended to be lower than those reported by UNAIDS.

[21] UNAIDS, India: Epidemiological Fact Sheet, Update 2004, UNAIDS, Geneva, 2004.

[22] For example, the astonishing and deeply troubling film by Sorious Samura shown recently on Channel 4 (UK):, Living with AIDS, 27 June 05

		Estimate	Range
People newly infected with HIV in 2004	**Total**	**4.9 million**	[4.3-6.4]
	Adults	4.3 million	[3.7-5.7]
	Children <15	640,000	[570,000-750,000]
Number of people living with HIV/AIDS	**Total**	**39.4 million**	[35.9-44.3]
	Adults	37.2 million	[33.8-41.7]
	Women	17.6 million	[16.3-19.5 million]
	Children <15	2.2 million	[2.0-2.6]
AIDS deaths in 2004	**Total**	**3.1 million**	[2.8-3.5]
	Adults	2.6 million	[2.3-2.9]
	Children <15	510,000	[460,000-600,000]
Total number of AIDS deaths since the beginning of the epidemic	**Total**	21.8 million	
Total number of AIDS orphans* since the beginning of the epidemic	**Total**	**14 million**	
Projected total number of AIDS orphans by 2010	**Total**	**25 million**	

* Defined as children who lost their mother or both parents to AIDS when they were under the age of 15 .
Source: UNAIDS/WHO (2004a)[23]

[23] UNAIDS/WHO, AIDS epidemic update: 2004, Geneva, UNAIDS, December 2004

There are several reasons why we may not be fearful enough. The first is perhaps scepticism as to the strength of evidence for the epidemic's impact. Is this event actually happening and is it any different from numerous other dramatic crises occurring in the world? The second is that even if we accept that it is happening, we do not really know what to do about it[24]. The third, and fundamental problem is we do not really know how to understand such an event. This is because it falls into a special class of events containing a small number of other slowly unforlding nightmares, one of which is global climatic change. Recent debates around the 2005 G8 meeting in Scotland show how hard it is to shift the US administration when its short and medium term material and political interests are threatened by acknowledgement of the seriousness of *that* possibility even in the face of the strongest scientific evidence and consensus[25], [26]!

A Long Wave Event

This is a *long wave event,* one where troubling and large scale effects emerge gradually over decades. Many abrupt happenings, "disasters", have long term *sequelae*. Long wave events are not the same as these short wave events which have long term effects. The distinction is subtle but important.

Take an infectious disease with a short incubation period and a high rate of mortality – for example cholera. This has long term effects inasmuch as people die and leave others bereft, but the event itself has a short wave form. We know that it is happening soon after it begins, we respond to it as best we can through public health measures and vaccination and treatment of infected and sick people. Similarly with a natural event such as a volcanic eruption or the 2004 Asian *tsunami*. Again, the effects were immediate and the need to respond was instantly apparent. But it is not only "natural" events which fall into this category – indeed, a large and developed body of thought argues that

[24] On these first two, see: Barnett, T. and Whiteside, A., AIDS in the 21st Century: disease and globalisation, 2002, Palgrave Macmillan, London and New York.
[25] National Research Council, Climate Change Science: An Analysis of Some Key Questions Committee on the Science of Climate Change, Washington DC, 2001
[26] Joint science academies' statement:Global response to climate change, URL: http://www.royalsoc.ac.uk/displaypagedoc.asp?id=13057

there is no such thing as a "natural" event[27]: "natural events" are the result of acts of human commission or omission. The *tsunami* created a human disaster because we had not established the necessary monitoring facilities and because the poor live within the flood range more than do the rich; the effects of global climatic change threaten future generations because we cannot achieve the political consensus to do something about it.

However, long wave events can be clearly distinguished from these. Apart from the HIV/AIDS epidemic, some other events seem to fall into this class. They include: global climate change, arsenic poisoning from deep bore wells in Bangladesh, and possibly the epidemic of obesity in some societies. There are undoubtedly others: indeed these form the research agenda of the recently established MacKinder Centre for the Study of Long Wave Events at the London School of Economics. The point about such phenomena is that while they are not necessarily easy to identify at one point in time, they do share the following distinguishing features:

- We are usually unaware of their starting points;
- By the time we become aware of their presence, dynamic and effects, it takes a long time to slow down the process or to stop it – and in many cases the event may turn out to be unstoppable;
- Engagement with their implications and long term ramifications requires different and long term thinking from that which is familiar to us from experience with short wave events;
- A central reason these events are difficult to halt is that it is enormously hard to get people in positions to act to recognise them, mobilise resources for what they are, and take appropriate action. Such events fall outside the normal time horizons of politicians and business strategists for whom the "long term" usually means five years; long wave events are likely to cover many decades and probably much longer;

[27] Blaikie, P.M., Cannon, T., Davis, I., Wisner, B., At Risk: Natural Hazards, People's Vulnerability and Disasters , London, Routledge, 2003

- Managing the consequences of long wave events makes novel demands and our existing experience is not necessarily a good guide to how we should respond;
- Most political and administrative capacities are not established to deal with such events;
- When "discovered", they are thought of and reacted to as "emergencies", creating a probability that actions taken for good in the short term will make the situation worse in the long term.

HIV/AIDS is just such an event because of the peculiar and particular characteristics of the disease pathogen – HIV.

The distinctiveness of HIV

The relation between the epidemic, its social effects (for example large scale orphaning) and possible political outcomes directs us to the pathogen. There is a direct route from the characteristics of the pathogen through the course of the disease to its effects on human life cycle and intergenerational relations.

HIV is a retrovirus: a fairly small group of viruses where the core is composed of RNA (ribonucleic acid) rather than the more common DNA (desoxyribonucleic [or deoxyribonucleic] acid) found in other life forms. The significance of this is that multiplication requires that it colonise host cells. In this case it is the cells of the human immune system. The virus converts these into "factories" producting more viral particles. In the process the host cell is destroyed and many tens of millions of viral particles are expelled into the body of the infected person.

The human host's immune system fights back and over a median period of about 8 years[28] there is a continuing battle between host immune system and viral population. An infected person has greatly varying viral load over this period. This influences their infectiousness to other people, their susceptibility

[28] Median survival from seroconversion 8.6 years (95%CI 5.6 ->12 years), this was reported in a presentation by J Whitworth, LA Shafer, C Mahe, L Van der Paal, Survival since onset of HIV infection in relation to background mortality in the Masaka natural history cohort, at a conference Empirical Evidence for the Demographic and Socio-Economic Impact of AIDS, Durban, March 2003.

to other infections and their state of health. A key feature of the virus, its translation of RNA to DNA, means it is particularly liable to errors in transcription of the genetic code, resulting in a high frequency of "mistakes". These mistakes mean that within the human host, the virus is mutating and over time these mutations accumulate. The result is increased size of the pool of viral variation within an individual. It is this which enables the virus to outwit the human immune response and also in some cases ARV treatments. Because of the typically slow progress from infection to death, this group of viruses are described as *lenti*viruses, slow acting viruses. Viral mutability and the further possibility of recombination of mutated viruses with each other – both in individual people and in cases of re-infection of an already infected person, with a new viral clade – have serious implications, Particularly worrisome is possible development of either acquired or transmitted viral resistance where supplies of medication are interrupted and/or treatment compliance falls below 95% for other reasons.

The relatively long period that it takes for the HIV to prevail over the host immune system has social and economic implications. For much of the time, an infected person is in reasonable health and able to function at some socially and economically satisfactory level. They are also, of course, capable of sexual relations, and particularly infectious in the period after an initial viraemic episode (about 2-12 weeks from infection) and before terminal increased viral load sets in – anything between a few months to many years after infection. Depending on the social, cultural and economic environment, the reproductive rate[29] of each initial infection can be greater or smaller. It is important to note that the sexual nature of transmission and the long viral life

[29] An epidemic is a rate of disease that reaches unexpectedly high levels, affecting a large number of people in a relatively short time. Whether and how an epidemic develops is linked to the reproductive rate of the pathogen. The gradient, final height and rate of decline of the curve is determined by the average number of secondary cases generated by one primary case in a susceptible population and the period over which this takes place. This is also known as "the basic reproductive number" and represented by the symbol R_0 (Anderson and May, 1992). In order for an epidemic to be maintained, R_0 has to equal 1, in other words each person who gets better or dies has to infect one other person. At this point the disease is endemic but stable. When $R_0 > 1$, each person infects more than one other person, the number of cases will rise. When $R_0 < 1$, then the epidemic will be disappearing. The reproductive rate is the number of secondary cases resulting from each primary case. Where this is 0 or <1 infection does not become epidemic. Where it is >1 epidemic development is likely. The larger the R_0 number, the steeper the epidemic curve.

cycle (combined with high mutation potential) means that infection is likely to occur at an early stage in an individual's life, perhaps even soon after sexual debut, and not necessarily result in illness until children have been conceived and born. Thus, in each individual infection, a host – woman or man - may remain alive long enough to reproduce and leave behind offspring who, if not infected at birth[30], can be infected in the future. Hence there is a pathological harmony between the viral and human life cycles. The full wave length of the HIV epidemic curve is probably up to 50 and perhaps 120 years long[31]. Unlike most other infections, this passes from generation to generation and so the "normal" epidemic sigmoid curve instead of merely reaching a peak, in the absence of marked changes to rates of transmission, receives an additional boost as each new generation becomes available for infection.

Such pathological harmony between virus and host reproductive cycles has potentially significant social and economic results. And this is all the more the case when we consider that each succeeding generation is likely to be born into a higher HIV prevalent environment than its parents; the situation is exacerbated further as its orphan status – with sub-optimal socialisation, early deprivation, poorer life chances – means that in all probability its likelihoods of contracting HIV is increased. Basia Zaba's simulation of the life-time risk of infection among young women in a range of seroprevalent environments[32] shows that in countries where adult seroprevalence is in the range 15-40 per cent, a young woman aged 15 has a 50-95 per cent chance of contracting HIV infection and dying of AIDS. Even at the relatively "low" adult seroprevalence level of 5 per cent, a young woman's lifetime risk of contracting HIV is around 20 per cent. The risk for young men is higher still. This has to be seen further against the declining life expectancy in countries with generalised AIDS epidemics. In several countries in southern Africa, after decades of improvement, life expectancy at birth has now declined from around 60 years

[30] Of children born to HIV+ mothers, about 25 per cent are HIV+ after the first two years and are actually carrying the virus rather than antibodies to it.
[31] This was suggested by Professor Roy Anderson of Imperial College in a plenary address to the XIII World Conference on AIDS, Durban, 2000.
[32] UNAIDS, Report on the Global AIDS Epidemic, June 2000, Geneva, UNAIDS, 2000, p. 26

to below 50 years and in some cases barely above 35 years[33]. Tragic as this is, more significant is what Alex de Waal has described as "expectancy of adult life"[34]. People who grow up in harsh circumstances and surrounded by premature death may soon become convinced of the inevitability of their own fate. The expectation that one may not live beyond 25 or 30 years no doubt alters one's perspective on the future and whether there is one at all – and thus also on the present. In other words it dramatically discounts the returns on any investments, whether financial, business or personal. Why take out an insurance policy, why invest in land, why put money into your children's education, why do anything but live for the present when there is every chance that you are either infected or will become infected? This is hardly a recipe for "behaviour change"[35]. The future may look very much like this to current orphans in many places where there is a generalised AIDS epidemic. And it is important always to consider that seroprevalence rates are not the same as AIDS epidemics – they are a peek into AIDS in the future. The worst is yet to come.

What does this do to human societies?

The general situation with regard to the pathological harmony between pathogen and human society is outlined schematically in Figure 1. This illustrates the ways in which a generalised epidemic adversely affects the potential and actual capacity for a society and economy to reproduce itself in a variety of ways including via transmission of knowledge and education, through maintenance of social and cultural patterns and via the peopling of institutions whether government organs or community infrastructure in general. Figure 1 shows the following:

1. The resonance between the viral life cycle and the human generational cycle. Here we see that generation 1 reproduces itself and acts as a host for the HIV pathogen. As this generation dies it leaves orphans.

[33] United Nations Department of Economic and Social Affairs, Population Divisions, World Population Prospects: 2000 revision, New York, 2000

[34] De Waal, A., How will HIV/AIDS transform African governance*?* African Affairs, London, 2003; Vol. 102, pp. 1-23

[35] On this see Barnett, T. and Parkhurst, J., Sex, Abstinence and Behaviour Change, Lancet Infectious Diseases, forthcoming 2005

2. These orphans enter a world where the risk of infection with HIV has increased as the general epidemic curve rises. In addition, as orphans, this generation is also possibly more socially, culturally and economically exposed to infection.
3. Thus the pattern repeats itself, the second generation reproduces, but so also does the pathogen, and a third generation of orphans is produced. This generation faces an increased risk of infection for the same reasons as did its parents – but the risk is increased as general seroprevalence rises and social exposure to sexually transmitted infections (including HIV) also increases as a result of less adequate socialisation, reflecting in part the decreased expectancy of adult life of parent generation.
4. While ARV roll out increases national seroprevalence rates by keeping HIV+ people alive, it also reduces overall *levels* of viraemia in those who are HIV+ to below measurable levels. This is the good news; but in the background is the possibility of increased viral resistance to these medications as ARV roll out occurs under sub-optimal circumstances with poor compliance[36] and inadequate health systems. We can only speculate about the significance of this development. So far experience is very limited[37].

[36] Paterson, DL, Swindells S, Mohr J, et al. Adherence to protease inhibitor therapy and outcomes in patients with HIV infection. Ann Intern Med. 2000. 133(1):21-30.
[37] Keynote Address by His Excellency Mr. Festus G., President Of The Republic Of Botswana At the Opening Session of The International AIDS Society Conference On HIV Pathogenesis and Treatment, Rio De Janeiro, Brazil 24-27th July 2005, released Sunday 24th Of July 2005

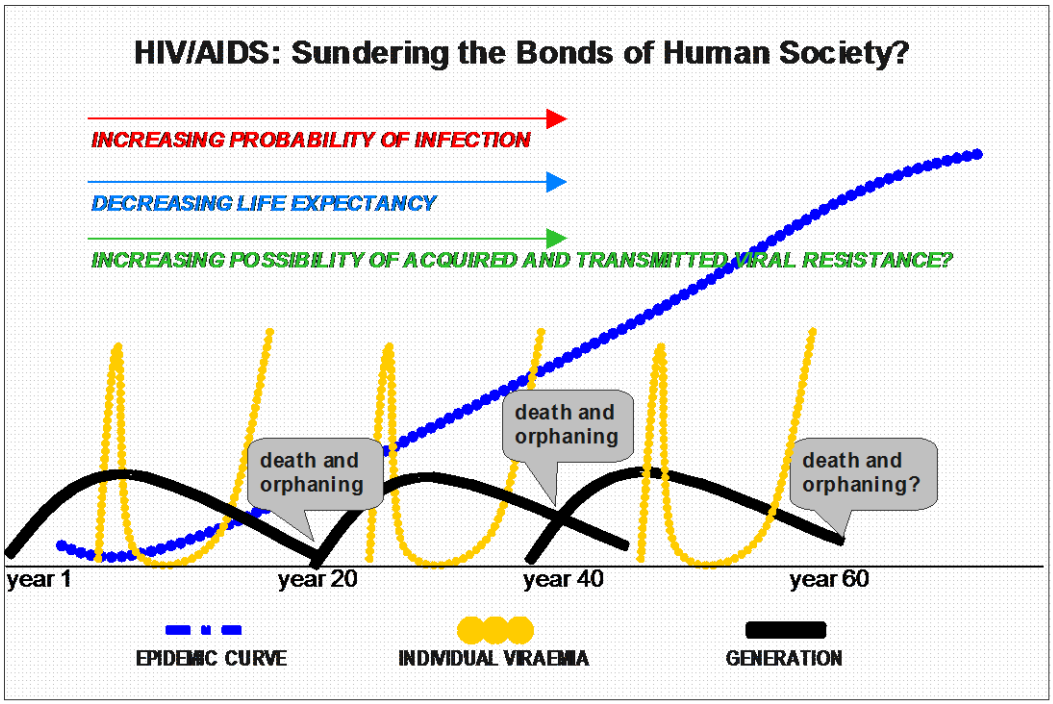
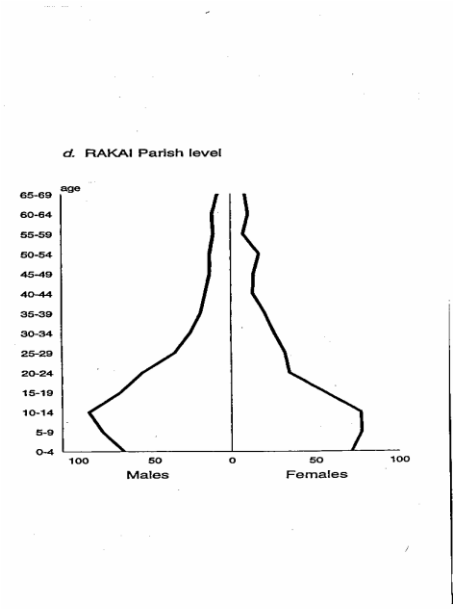


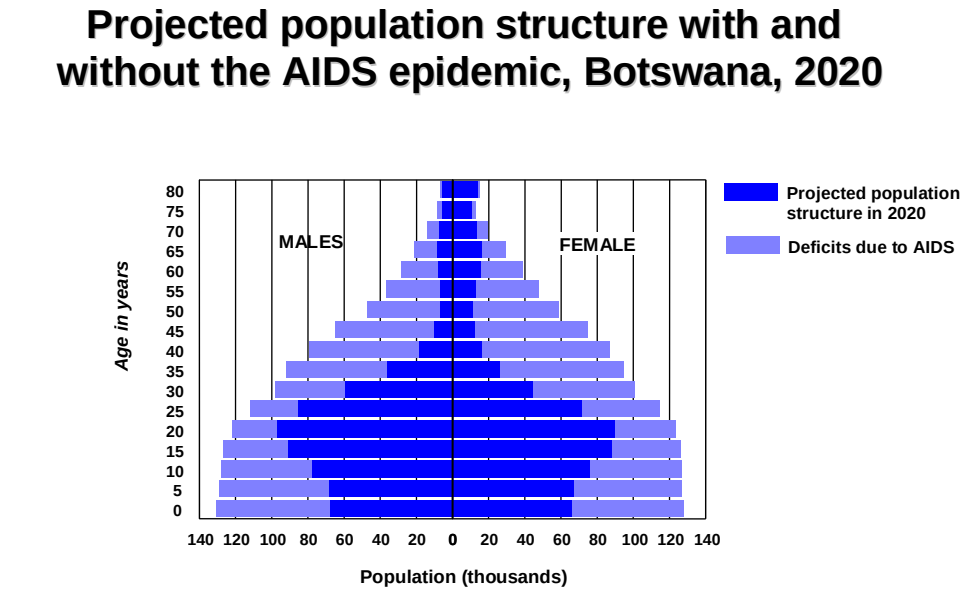
Figure 1: HIV/AIDS: Sundering the Bonds of Human Society?

In addition to these processes of disruption, epidemic associated mortality affects the demographic structure of a society. These effects are not uniform and will vary from place to place. For some parts of Africa we have evidence of what had happened to population as a result of AIDS deaths. In heavily affected regions of Uganda the effects of AIDS could be observed in Rakai District as long ago as 1993 – reflected in the census data as shown in Figure 2. Figure 3 shows a simulation of Botswana's population with and without AIDS mortality in 2020.

Figure 2: The effect of HIV/AIDS on population in Rakai, Uganda, 1993[38].



[38] Low-Beer, D., Stoneburner, R.L. and Mukulu, A (May 1997), Empirical Evidence for the severe but localised impact of AIDS on population structure, Nature Medicine, Vol. 3 No. 5 pp. 553 – 557.



Source: *US Census Bureau, World Population Profile 2000*

Figure 3 Projected population structure with and without the AIDS epidemic, Botswana 2020

Of course, initial population structure without AIDS will play a part in any outcome. For example whereas the typical base structure in Africa and central Asia is characterised by high birth rate and relatively low life expectancy, producing a typical demographic triangle, in other regions, such as in Ukraine, Belarus and Russia, the base demographic picture is quite different as is the economic and political base. No doubt increased AIDS related mortality will have different social and economic consequences as between these two regions[39] [40]. Thus generalisation must be drawn with great care: an AIDS epidemic encounters pre-existing histories, cultures and social structures. Over generalisation can all too easily lead to hasty conclusions about state breakdown, security threats &c. In fact the long wave of the event, like any wave, crashes more or less intensely depending on the depth of the water.

[39] UNDP, HIV/AIDS in Eastern Europe and the Commonwealth of Independent States: reversing the epidemic - facts and policy options United Nations Development Programme, Bratislava, New York and Moscow, February 2004.

[40] Sharp, S., Modelling the Macroeconomic Implications of a Generalised AIDS Epidemic in the Russian Federation, Masters Thesis, Department of Economics, University of Colorado, May 2002, Boulder.

Some societies have deeper, calmer water than do others, they are richer, better organised, or in other respects more resilient.

Politics and governance effects

With these provisos, we can however speculate as to the political and governance implications of HIV/AIDS epidemics. National strategic planners have been thinking about the likely security implications of the epidemic for some years – with more or less apocalyptic predictions. In the aftermath of 11 September 2001, some political analysts suggested that the projected 42 million children who will cumulatively have been orphaned by AIDS by the year 2010 are likely to be source of political and social unrest, even a source for terrorist recruitment[41], [42], [43],. In 2003, the Pretoria-based Institute for Security Studies predicted that the "severe social and economic impact of HIV/AIDS, and the infiltration of the epidemic into the ruling political and military elites and middle classes of developing countries may intensify the struggle for political power to control scarce state resources. Such dynamics, even singularly, have the potential to lead to political instability." [44] Some of the more extreme predictions have come from within US administrations, thus:

> "AIDS, other diseases, and health problems will hurt prospects for transition to democratic regimes as they undermine civil society, hamper the evolution of sound political and economic institutions, and intensify the struggle for power and resources."[45]

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[41] Steven L. B. Jensen, "Fatal Years: How HIV/AIDS is Impacting National and International Security–A Desk Review of the Literature and Analytical Approaches" (Geneva: UNAIDS Security and Humanitarian Response Unit, March–April 2004).

[42] Martin Schönteich, "The Impact of Communicable Disease on Violent Conflict and International Security," Presentation at the Demographic Association of Southern Africa Annual Workshop and Conference, University of the Western Cape, September 24–27, 2002;

[43] P. Fourie and M. Schönteich, "Africa's new security threat: HIV/AIDS and human security in Southern Africa," *African Security Review,* 10.4, 2001, pp. 35–36

[44] Robyn Pharaoh and Martin Schönteich, "AIDS, Security, and Governance in Southern Africa: Exploring the impact," Occasional Paper No. 65 (Pretoria: Institute for Security Studies, January 2003), cited in Garrett, op. cit.

[45] National Intelligence Council, Global Trends 2015: a dialogue about the future with non-government experts, URL: http://www.cia.gov/cia/reports/globaltrends2015/

This particular report concluded that the prospects for transition to democratic regimes were compromised by HIV/AIDS. It suggested that epidemic impacts may "serve to undermine civil society, hamper the evolution of sound political and economic institutions, and intensify the struggle for power and resources."[46] And it was just such an assessment which prompted the then CIA Director George Tenet to state in February 2003 that:

> "The national security dimensions of the virus are plain: It can undermine economic growth, exacerbate social tensions, diminish military preparedness, create huge social welfare costs, and further weaken already beleaguered states. And the virus respects no border."[47]

All of this is crude and unsupported analysis. It is based on no evidence and little theory whatsoever and necessarily arrives at its conclusions through the prism of post 9/11 expectations of potential threats to the security of the USA. However, rather than rushing to premature conclusions as to "threats to national security" or "state breakdown" as a result of HIV/AIDS (rather than because of other factors) it is necessary to take a closer look at the processes and structures within AIDS affected countries to see what we may discern about an unclear future. Such a review should however be made in relation to the perspective on pathogen-host relations outlined above.

What do we know about politics, governance and AIDS?

We have surprisingly little hard information about the effects of HIV/AIDS on governance and politics in even the most severely affected countries. One of the few solid pieces of indicative evidence and analysis is to be found in a 2004 report by Kondwani Chirambo[48]. He makes the following observations

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[46] Global Trends 2015, op cit.

[47] Curt Anderson, "CIA Director says AIDS Threatens Stability, Economic Health Worldwide," *Associated Press,* February 11, 2003, cited in Garrett, op. cit.

[48] Chirambo, K., AIDS and Electoral Democracy:Applying a new lens to election coverage, IDASA Institute for Democracy in Southern Africa, June 2004

about the influence of HIV/AIDS on politics in southern Africa. Noting the importance of elections as core mechanisms of any system claiming democratic credentials, he suggests that illness and death associated with HIV could already be affecting electoral systems in Southern Africa. Looking at data from Zambia's 1991, 1996 and 2001 elections and from sero-prevalence data available since 1985, Chirambo provides perhaps the most convincing if only correlational analysis of the effect of AIDS on an electoral system. The study indicates that between 1964 and 1984 there was a total of 14 bye-elections as a result of death of the incumbent member. This number increased to 59 during the period 1984-2003 – when the HIV epidemic first took off in that region. And we may want to note that in its earliest phases in Africa, HIV infections tended to cluster in wealthier, more mobile men rather than in other sections of the population – wealth, or at least higher spending power which is not the same thing, and mobility being characteristic of politicians the world over. Of these 59 deaths, 39 occurred between 1993 and 2003 – the period of high HIV and AIDS prevalence. Of the 39 MPs who died in this time, 15 were in the age range 25-49 and 12 were between 50 and 60 years old. Only four were listed as having died from road accidents. Similar trends are observed in Zimbabwe, increased numbers of by-elections as a result of incumbents' deaths due to illness. In the period between the 2000 parliamentary elections and 2004, Chirambo reports Zimbabwe as holding 14 by-elections. Eight of these were as a result of "illness". The 2002 general elections in Lesotho cost R118 million. Since then, the country has already held six by-elections, three as a result of MPs dying of unspecified illnesses. AIDS seems a likely common factor.

In the region's core, South Africa, competing with India as the country with the largest number of HIV infections, a very serious conclusion might be drawn from this kind of analysis. Could it be that HIV and AIDS are eroding the South African electoral base and its supply of parliamentarians? Evidence for this supposition can be found in a recent publication[49] which suggests that

[49] Strand, P., Matlosa, K., Strode, A., Chirambo, K., HIV/AIDS and Democratic Governance in South Africa: Illustrating the Impact on Electoral Processes, IDASA, Pretoria, 2004.

increasing death rates in the voting age group could explain the downward trend in voter turnout over the last three elections in South Africa and also be a contributor to political power shifts.

Unusual levels of mortality among the electorate are reflected on the voters' roll via the population register. This shows that between 1999 and 2003 almost 1.5 million of South Africa's registered voters were removed from the voters' roll because they had died. This out of a total of 20,674,926 registered voters. In the same time period the number of deaths among registered voters increased by 66 percent. In some municipalities mortality increased by more than 300 percent in mortality over the four years for women between 30 and 39 years of age. In Limpopo Province it increased by 160 percent. Mortality in age group 30 to 49 increased at a higher rate than in the other age groups. And the effects? Difficult to arrive at a sure conclusion, but it is reported that of the leading political parties in South Africa, the ANC and Inkatha Freedom Party (IFP) acknowledge HIV/AIDS as having put some strain on their party structures, creating increased need for replacement of cadres who have succumbed to illness or died. Although no severe "functional defects" have arisen in the party structures, the loss of seniority and experience nevertheless is reported to have reduced parties' capacities and 'intellectual memory'[50]

None of the above shows dramatic disruption, nor does it show failed state syndrome. But considered against the background provided above, it should give pause for thought. We must not forget that although the HIV epidemic is in its third decade, we are still not seeing the full and cumulative social and economic impacts of the elevated seroprevalence levels we now read and digest (if we do read them) with hardly a blink. Let me repeat them: 25 per cent, 30 per cent, 35 per cent, 40 per cent: these are *not* the impact of the epidemic, they are precursors to that impact. In that light we should think very carefully about whether the evidence from southern Africa also provides a hint of what lies ahead in terms of political and governance effects. Of course

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[50] Strand et al, op. cit. p. 17.

many worst case scenarios can be envisaged. For example differential seroprevalence rates as between constituencies and even different allocations of ARVs could affect voting outcomes. There is certainly strong and current rumour from Zimbabwe that MDC members have less chance of accessing ARVs than do Mugabe supporters.

Even in less than perfect democratic systems, more frequent elections – as recorded in parts of southern Africa, combined with a hollowed out electorate, as suggested for South Africa, means less experienced and less sophisticated electors and legislators. Declining adult life expectancy, increasing numbers of orphans, poorer socialisation, second and third generation orphans, and the orphans of orphans of orphans, all of these could constitute tipping points in already explosive local mixtures. What are the possible outcomes? The answer to this question lies not only in the internal operations of individual states but also in regional and global forces.

A recent scenario exercise by UNAIDS and Shell[51] looked to understand African futures with HIV/AIDS. As with all scenarios and given normal distributions, there were three predictable outcomes (although some African participants evidently would have liked to include more): an optimistic, a pessimistic and a middle of the road. In the pessimistic, Africa goes down the tubes and all the bad things currently going on are exacerbated by an out of control AIDS epidemic; in the middle scenario, "Africa goes it alone" and manages to avoid the worst but the situation is bad, and mortality and suffering are high; in the best case, global assistance and African political leaders' wisdom saves the continent from the worst, and while having (as we already know) dreadful effects, Africa is saved and saves itself from disaster.

All too predictable, but of interest in relation to the questions we have posed about politics, governance and security. First of all, of course, there is no

[51] UNAIDS and Royal Dutch Shell, AIDS in Africa: Three Scenarios to 2025, Geneva, UNAIDS, 2005, URL: http://www.unaids.org/en/AIDS+in+Africa_Three+scenarios+to+2025.asp

"African" or any other political and governance effect of AIDS. There is likely to be a diversity of outcomes on that continent as elsewhere. As with the demographics, the starting point is important. Possibilities include failed state syndrome where hollowing out of effective democratic processes as currently found in South Africa, Botswana and a few other countries, leads to disorder, regional secession, warlordism and the kinds of political developments already apparent in parts of the continent (and not only in Africa) without HIV/AIDS. Could the breakdown of intergenerational links and of political trust and systems lead to these effects in South Africa and Botswana? Well, the Prime Minister of the latter foresees serious possibilities. He is on record as saying:

> "The impact of HIV/AIDS on the population, the economy, and the very fabric of our society undermines not only development, but poses a serious threat to our security and life as we know it."[52]

In South Africa, the government of President Mbeki seems to have left it until demands for AIDS treatment become such an urgent political issue they can produce violence. The evidence for this is the shooting with rubber bullets of ten people in Queenstown on 13 July 2005[53]. These people were protesting for ARV treatment. In such circumstances, issues of trust between government and electorate, hollowing out of the electoral process and of the legislature, demands for AIDS treatment, external influences, and the long term demographic and intergenerational breach effects described above could all come together to produce odd and unexpected political results. But perhaps not state breakdown in many cases – or at least not as a result of AIDS. Perhaps more likely among the possible responses is a form of authoritarian government – partly as defence of established interests, partly in

[52] Economic Commission on Africa, 2004. Statement by H.E. Festus G. Mogae, President of Botswana.
http://www.uneca.org/adf2000/daily_updates/speeches_and_press_releases/120700stat.

[53] Treatment Action Campaign Newslletter, Forty Injured, Ten Shot at Peaceful Protest to Demand Treatment, 13 July 2005, Cape Town, various sources, including: http://outfm.org/News/20050712%20tac%20activist%20shot.html;

response to an attempt to do something, partly because the last fifty years has stamped authoritarianism into the political culture of much of sub-Saharan Africa. The middle UNAIDS scenario comes out with something like this.

A recent revealing visit to a small African community where AIDS deaths were familiar in the early 1980s and where we are now seeing the second and third generation of orphans may show a particular possibility. The parish council chairman is in his early thirties. An orphan at seven, he brought himself and his younger siblings up together with one older brother. He is a serious man and he has a mission. He makes it his responsibility to stop the present generation of young people from becoming infected. If he finds them working in bars or as fishermen he takes action to compel them back to school. Not much room for "human rights" based approaches here but probably good public health nonetheless! According to him this is an effective strategy. And who can condemn him for these actions when between 70 and 90 per cent of children in the local schools are orphans? In a society where candidates for political office are being winnowed by the epidemic, how many, like this man, might enter local and national politics with commendable intentions and will, but take actions which would produce despair in most human rights activists? What if the survivors of this epidemic, the orphans or orphans of orphans are indeed the main actors on the future national stage? What if they enter it with desperate aims to achieve something to deal with the dreadful effects of this epidemic? What if state structures are so weakened by the epidemic? What if millenarian and syncretistic religious ideologies gain ground[54]? And a dozen other "what ifs". Among these and crucial to future thinking are two questions: (a) whether or not sustainable ARV treatment can be made available over the long term (b) whether the next generation of such drugs able to confront viral resistance can be made readily and cheaply available rather than be subject to lengthy bargaining to achieve this necessary end.

While the label "fascist" may seem odd, Karl Polanyi's description of the harbinger ideas of fascism seems somehow apposite to describe aspects of

[54] The role of syncretist African Zionist churches in Southern Africa in relation to the HIV epidemic is an important area for further research.

this possibility. They include: “spread of irrationalistic philosophies, racialist aesthetics, anticapitalist demagogy, heterodox currency views, criticism of the party system, widespread disparagement of ‘regime’ or whatever was the name given to the existing democratic set up”[55]. Poor countries are not immune to fascism and the BJP movement and its incumbency in government in India certainly trod a narrow line in this respect[56]. Fascism can be built on the basis of diverse ideological and cultural traditions. But probably as important in all of this is not what happens *within* a country as a result of HIV – which in most cases will be only a tipping point factor. Rather it is the stance of the external world to those countries with serious current HIV epidemics and looming AIDS epidemics. It is with these long wave events that we must all engage strategically. This is the real security issue. ‘Security’ in a globalized world is more than the defence of a ‘homeland’. Suggestions either that AIDS is a threat to “national security” or that it necessarily leads to political and governance problems are facile and may be self-fulfilling. We can speculate but we just do not have the evidence on this, either way, for sub-Saharan African countries or anywhere else for that matter. Such simple-minded perspectives may move national security organs. They fail to engage with the key problem of the 21st century: living together on one small, diverse and increasingly crowded planetary homeland. Grasping the real nature of the HIV/AIDS long wave and finding meaningful data are necessary ways toward assessing what all of this means.

[55] Polanyi, K., 2000, The Great Transformation, Boston, Beacon Press, p. 245.
[56] See Corbridge, S. and Harriss, J., Reinventing India: Liberalization, Hindu Nationalism and Popular Democracy, Polity Press, Cambridge, 2000