BOOK REVIEW

**Tinderbox: How the West Sparked the AIDS Epidemic and how the World can finally Overcome it**

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HIV and AIDS are common topics studied by undergraduate biochemistry students. Its mode of transmission and replication of the virus within the body are well understood at this point. Students are often interested in learning about methods of combating the proliferation of AIDS and curing the disease, making this a major area of research many students may be interested in pursuing. However, few undergraduate students today have a historical perspective of how the AIDS epidemic was initially recognized and discovered in the late 1970’s and early 1980’s. And even fewer people know about the history of HIV before it came into the public eye.

The book *Tinderbox: How the West Sparked The AIDS Epidemic And How the World Can Finally Overcome It* (1) takes a different approach in examining the topics of HIV and AIDS. The authors, Craig Timberg and Daniel Halperin, take the approach of examining HIV’s history and its spread, not in the United States as some students may be aware, but from its roots in central Africa. The book is meant for a general audience and does not delve greatly into the biochemistry or molecular biology of the virus. Rather, the book focuses on a broader examination of HIV’s spread from its origins in the jungles of central Africa, to its gradual expansion to larger cities and rapid movement across the world. *Tinderbox* then examines the cultural issues affecting the fight to contain AIDS, particularly in Africa.

Timberg and Halperin use the analogy of a tinderbox to compare how the spread of HIV during the early to mid-20th century required all the components needed to start a fire. A tinderbox usually contains flint, steel, and cloth or some other flammable material to create the spark and fuel for a fire. All of the conditions needed to spread HIV and the AIDS epidemic were in place in central Africa: the critical mass of people and conditions helped to fan the flames and assist in the spread of HIV to the rest of the world. This story is rarely told in our Western view of AIDS, aside from HIV’s relation to the simian variant SIV, which is most commonly observed and studied in chimpanzees. We tend to focus on how AIDS affects our country and our communities and rarely think about its origins or the disease’s effects in other countries.

The conditions which fanned the flame of the AIDS epidemic were spurred by human actions and activity in central Africa, leading to its spread to the western hemisphere. Upon its discovery, the West seemingly stole ownership of AIDS from its origins. HIV and AIDS have been studied so extensively, retroviral drugs and treatments have helped to significantly slow (but certainly not stop) the proliferation of AIDS in the West. However, AIDS continues to threaten central and southern Africans at every class and educational level. According to the authors, many Africans view AIDS as simply a fact of life. And while it may be avoided through preventative measures and behaviors, AIDS continues to move through many African communities more easily and rapidly than in more developed regions of the world. This is partially due to social behaviors that most Western cultures have tried to prevent.

**Transfer and Spread of the Virus**

The most commonly accepted origin of transfer to humans was likely to have occurred in southeast Cameroon where a local hunter killed a chimpanzee for food. During the butchering process, the virus passed from the infected chimp’s blood to the hunter through a cut or open wound. Thus, SIV eventually mutated into what is now recognized as the HIV-1 group M form. This initial event probably occurred within several decades on either side of 1900. Movement of indigenous peoples within most regions of central Africa at this time was uncommon due to the local terrain. So, the spread of HIV remained contained for decades.

During the mid-1800’s, Africa was still a very mysterious continent to the West. Early explorers such as...
Dr. David Livingston recounted their exploits and adventures which then spurred more interest in the African continent. However, while Livingston was willing to learn the languages and respect the local customs and traditions of the African communities he encountered, many who followed were more interested in Africa's vast resources.

Thus, forces began moving into the region that would ultimately assist in the movement of the virus from remote regions into more populated areas. European powers, primarily from Belgium, Germany, and France, established colonies and developed new cities as hubs for commerce and trade. Belgium created a trading post on the Congo River named Leopoldville (for the King of Belgium). This new trading center would eventually become a major city and population center not seen before in central Africa. European traders pressed local Africans into forced service as guides and porters, and moved further upriver into more remote and less traveled regions of central Africa, searching for new sources of rubber and other natural resources. They encountered communities where HIV was present and the locals carrying the virus were pressed into service for the Europeans. As trade routes and trading posts were established, greater movement of people and the virus was inevitable.

These new cities were havens for the spread of diseases. Prostitution developed into a thriving industry for both visiting Europeans and African workers. The spread of sexually transmitted diseases became rampant. Cities such as Leopoldville were incubators for the spread of HIV. In addition to increased foot and river traffic across the continent, new railroads across Africa connected one population center to another.

Timberg and Halperin describe efforts by early AIDS researchers such as William Hamilton, an evolutionary biologist, and molecular biologist Michael Worobey to trace HIV back to its geographical origins by collecting DNA samples from chimpanzee populations in the Congo and Cameroon. Hamilton unfortunately died from malaria during this quest, but Worobey was eventually able to positively link HIV-1 to SIV infected chimpanzees in central Africa.

Odd medical cases were also encountered in hospitals during the 1950’s in Leopoldville (later renamed Kinshasa). These cases often described patients with symptoms of seemingly innocuous diseases that eventually led to deaths. A very similar pattern would later be observed again across the world in more developed countries during the late 1970’s and early 1980’s. Forensic examination of long stored tissue samples from this era positively established the presence of HIV-1 in Kinshasa in the mid-1950’s.

During the late 1950’s and early 1960’s, Africa’s independence movement coincided with another surge of population movement into already overcrowded cities. With Congolese independence in the 1960’s, there was a need for an educated workforce, and an influx of Haitians came to the region seeking opportunities. Many become carriers of the virus. These workers had jobs that paid well enough to allow them to travel much more than local Africans. Ultimately, Haitians were found to be prominent carriers of HIV and AIDS during the early 1980’s, both in the US and Europe. As more diverse and transient populations moved into central Africa, HIV was transferred from local carriers to these visitors. With the increased mobility of late 20th century travelers, the movement of HIV was inevitable. The HIV-1 group M strain would eventually move across the globe to major population centers such as San Francisco, New York, Moscow, Bangkok, and Rio de Janeiro.

**Politics and the Fight Against AIDS**

During the late 1970’s and early 1980’s, patients dying from normally non-fatal illnesses were identified in particular populations. In 1981, a report from the US Center for Disease Control identified a group of victims in Los Angeles who died from a rare form of pneumonia, Pneumocystis carinii. As more of these deaths were reported in the US amongst certain populations, it became known by several disparaging names, including “gay-related immune deficiency,” or GRID.

However, new cases were identified in cities across the globe, affecting those who shared needles, and hemophiliacs were confirmed as HIV positive - the blood supply had been infiltrated. Babies from HIV infected mothers were found to be carriers. AIDS began to gain greater attention from Western governments. Funding for research increased for finding a cause and relieving the epidemic.

**Transmission of the HIV Infection**

The most direct route of HIV infection is by transfer of bodily fluids, particularly through sexual activity or blood transfusions. HIV is a relatively fragile virus that cannot survive outside the body for any extended period of time. The primary efforts at stemming the spread of AIDS in at-risk groups focused on encouraging monogamous relationships between sexual partners and the use of condoms to prevent the transfer of the virus. Treatments for those infected with the virus focused on antiretroviral drugs such as AZT and combination therapies, but these would be years in the making.

Back in African hospitals, the number of patients with AIDS was increasing, even in isolated communities and villages far away from larger populous areas. The authors explain that many villagers, usually men, left their small communities for larger cities to find work. Those that returned infected with HIV transferred it to the local community.
Social customs also play a role in the spread of the disease. Timberg describes a trip from his home in Johannesburg to Francistown, known to have one of the highest adult HIV infection rates (40%) in Botswana. He interviews a young bartender, Brian Khumalo, who describes a young woman in the bar who is new to the city. “She will be with me tonight, with my best friend tomorrow, and I will be with somebody else.” In part, the acceptance of AIDS is due to very active AIDS treatment programs for those already infected with HIV. Antiretroviral drugs are readily available in clinics in Botswana and South Africa. However, this has had very little impact on the rate of HIV infection.

**Slowing the Spread of AIDS**

Halperin’s work has convinced him that two factors hold the key to stemming the rate of infection in African societies. Western influences in the region attempted to control polygamy through religious conversion, but with limited effect. Also, modern campaigns to control the spread of HIV tended to revolve around the use of condoms, HIV testing, and the hope of an eventual vaccine. Some modifications to polygamous lifestyles have been observed. Many people who have multiple partners have tried to keep their circle of partners more exclusive in order to help prevent possible infection.

The second factor Halperin suggests that could help stem the transfer of HIV is male circumcision. In cultures where circumcision is more commonly practiced, the rate of HIV infection drops dramatically. HIV is able to survive outside the body underneath the foreskin, which then allows for easy transfer of the virus. Studies of African heterosexual men who have undergone circumcision have shown dramatically lower rates of HIV infection (3, 4, 5). And now the Center for Disease Control (CDC) appears to be preparing recommendations supporting male circumcision as a means for preventing HIV infection as well as other sexually transmitted diseases (6). While certainly controversial, there is ample evidence demonstrating the positive impact circumcision may have on lowering rates of HIV transmission.

Breaking through certain cultural norms will be part of the battle in fighting the spread of HIV in Africa. Some of the stories in this book are heartbreaking as they deal with their particular situations and may be difficult for some readers to understand as they work through these narratives. But in order to help combat the factors related to the spread of the disease, it is important to understand and learn how the culture of an area will impact a plan for treatment and prevention.

_Tinderbox_ has the potential to take the biochemical topics of HIV and AIDS and open up a broader perspective to consider. The book is relatively easy to read, and can be digested in small chunks if necessary. _Tinderbox_ offers another side to the more well known historical events leading to the discovery of AIDS in the US during the 1980’s. This story was recounted in great detail in Randy Shilts’s popular book _And the Band Played On: Politics, People, and the AIDS Epidemic_ (2). Shilts’s book is more of a tome to read at 630 pages compared to _Tinderbox_’s 304 pages. Fortunately, _And the Band Played On_ was adapted into an HBO movie by the same name that explores different factors that impacted the start of the war on AIDS in the US during the late 1970’s and early 1980’s. Together, _Tinderbox_ and _And the Band Played On_ make a complimentary pair of stories on how HIV began its voyage across the globe, how the disease and virus were identified in the different regions of the world, and how we can work to help fight the spread of this disease.

**References:**