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Scrambling for Africa

Johanna Tayloe Crane

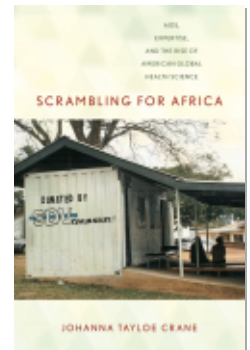
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INTRODUCTION

My first visit to Mbarara's Immune Wellness Clinic¹ was in July of 2003, when I spent a day there as part of a visiting research team from San Francisco, California. Located about four hours south of Kampala, Uganda's capital city, the town of Mbarara is surrounded by rolling grassy hills that turn golden in the dry season. It is cattle and dairy country, and the main streets of the town center are dotted with shops selling fresh local milk by the ladle-full. The Wellness Clinic is located at the edge of town, on the grounds of the university teaching hospital with which it is affiliated. We arrived at the collection of low-lying cement buildings that make up the

1. The name of the clinic is a pseudonym, but all other place names used in the book are real unless otherwise noted. All individuals named in this ethnography are referred to using pseudonyms in order to protect privacy. The exceptions to this are when I refer to individuals quoted in public forums, such as the press or scientific conferences, in which case I use real names. On rare occasions, I have combined two individuals into a single composite character in order to streamline the manuscript and make the number of names more manageable for the reader.



Figure 1: The Immune Wellness Clinic in 2003 (photo by the author).

hospital at about 10:30 that morning. When we asked around for the office of Dr. Harry Salter, the American missionary who had founded the clinic, someone instructed us to walk up the hill to the “containers.” Initially puzzled by these instructions, we soon learned that the clinic was housed in a donated metal shipping container—the same kind we were accustomed to seeing at home, in our peripheral vision, as we passed the Oakland shipyards when crossing the San Francisco Bay. The container-clinic was divided into two small exam rooms, each with a doorway covered by a cloth curtain. At the time, it was the only dedicated HIV clinic in all of southwestern Uganda.

One of the patients we met on that day in 2003 was a friendly and helpful man named Gabriel Muzoora. Gabriel was a widower caring for three children. No longer able to work as a carpenter due to his poor health, he supported himself on the small stipend he earned drumming in a song and dance group affiliated with The AIDS Support Organization (TASO), Uganda’s best-known HIV education and support organization. He regu-

larly made the 20-kilometer trip between his rural home and the Wellness Clinic via minibus taxi (one of the principal means of shared transit in Uganda), even though his inability to afford the anti-HIV (antiretroviral) medications sold at the clinic's pharmacy meant that the care he received there could do little to forestall the disease's inevitable progression.

Dr. Salter had opened the clinic in 1997 under the auspices of the Faculty of Medicine at Mbarara University of Science and Technology (MUST), where he held a teaching position. With support from his Baptist missionary organization, the clinic was able to provide what Ugandans would call "small drugs," such as antibiotics, for free. However, it had no means of subsidizing the very effective but expensive multidrug antiretroviral "cocktails" that were by then the standard of care for AIDS patients in the United States. The discovery of these drugs in 1995 and their seemingly miraculous ability to restore health to patients near death is often heralded as the dawn of the AIDS "treatment era." Yet, in Uganda and most other low-income countries, this breakthrough initially had very little impact, since the high price of the medications—easily US\$15,000 yearly—kept them out of reach to all but the wealthy. Globally, activists and advocates fought for humanitarian aid and drug pricing policies that would support free access to the treatments in poor countries, especially in sub-Saharan Africa, where two-thirds of the world's people with AIDS resided (UNAIDS and WHO 2006). But international donors hesitated, arguing that impoverished patients might take the medicines improperly and generate dangerous strains of drug-resistant virus. Things began to shift in 2001, when generic drug manufacturers in India and elsewhere began manufacturing and exporting cheaper "copycat" antiretroviral combinations to African countries. By 2003 these Indian drugs were available for just under US\$30 a month at a handful of clinic pharmacies in Uganda (including the Wellness Clinic), but in a country where over half the population earned under \$1.25 a day, this price remained unaffordable for Gabriel and many other people living with AIDS (UNDP 2010). As a result, for the first decade of the "treatment era," most people with AIDS in Uganda and other low-income countries were dying no differently than they had in the 1980s.

Only a few years later, the situation had changed radically. Through pressure from treatment activists and a growing concern that the epidemic might cause political instability in the region, the United States and other wealthy nations came to frame AIDS in Africa as an emergency in need of

direct humanitarian action. This political shift, in combination with falling drug prices, ushered in the establishment of the multinational Global Fund to Fight AIDS, Tuberculosis, and Malaria and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) in the early 2000s. These two major, internationally financed HIV-treatment programs reshaped the landscape of global HIV treatment access by providing significant financial support for free antiretroviral treatment in poor countries. By late 2004, these programs had begun to supply clinics across Africa with free antiretrovirals and other drugs and services for HIV patients. Health policy discussions shifted away from debates over whether or not African patients could take antiretrovirals properly and refocused on concerns over clinic and laboratory infrastructure, staffing shortages, and the long-term sustainability of foreign-funded treatment programs. Although treatment access today remains far from universal, there is no doubt that these programs have profoundly impacted the lives of AIDS patients, their families, and their care providers in recipient nations. As of May 2009, over 5,000 individuals—including Gabriel—were being treated with free HIV medications in Mbarara.

The first decade of the new millennium also brought other big changes to the Wellness Clinic. Although the advent of free antiretrovirals was certainly the most important shift in terms of human survival, the influx of international funding also fueled the rapid growth of AIDS-related infrastructure and research on the adjacent medical school campus. Indeed, a visitor to the clinic in 2009 would be hard pressed to find the original “container” clinic, as it had been absorbed into an ever-growing complex of new buildings crowding the northeastern corner of the hospital grounds. Largely financed by PEPFAR and other American partners, these buildings were used to provide much-needed space for the HIV clinic's growing staff of clinicians and counselors, as well as new laboratory and pharmacy services. In addition, they accommodated a rapidly expanding and largely U.S.-funded scientific apparatus focused on studying the rollout of antiretroviral treatment in Africa and the impact of the powerful drugs on thousands of never-before-treated patients. Such a biological “blank slate” was unavailable in wealthy countries, where antiretrovirals had been readily available for nearly a decade.

At the vanguard of this influx of foreign researchers to Mbarara was Dr. Jason Beale, a physician-researcher who had begun his clinical career as an AIDS doctor in New York City and San Francisco in the 1980s, working on

the front lines of the American HIV epidemic in the years before effective antiretrovirals. Dr. Beale first came to Uganda in the early 2000s, in search of a location for a new research study examining antiretroviral access, medication adherence, and HIV drug resistance in Africa. He knew that the availability of antiretrovirals (ARVs) was on the rise and that international funding for treatment was likely to come soon, and he was hoping to find a clinic where he could study patients as they received the drugs for the first time. While spending time in Kampala, he met Dr. John Atuhaire, a young medical officer from the Immune Wellness Clinic in Mbarara, who was visiting the capital to attend a training program designed to teach African doctors about how to care for patients on antiretroviral treatment. Atuhaire had brought with him a handwritten register where he had been recording basic information about the clinic's growing number of patients purchasing generic, Indian-manufactured antiretroviral therapy. As he showed Beale the register, Atuhaire explained that as more and more patients were able to access ARVs, it was becoming increasingly difficult for him—the clinic's only full-time doctor—to keep the records current.

Beale saw valuable data in Atuhaire's register—and an opportunity for collaboration. Mbarara's hospital and medical school were largely off the beaten track for international researchers, who tended to work in and around the capital city. Beale was one of the first foreigners to propose a research partnership, and when he visited the Mbarara University of Science and Technology, he found the faculty eager for opportunities to collaborate. He quickly forged an agreement with Dr. Atuhaire and Dr. Salter to develop a pilot study of the Immune Wellness Clinic's patients, and to provide the clinic with an electronic record-keeping system. In a fitting symmetry, Beale's pilot research project would also be housed in a shipping container on the hospital's grounds, as this was the only available space at the time. The container was empty and abandoned, but Dr. Salter offered it to him on the condition that Beale pay for the necessary renovations (a cost of about \$100) and reserve half of the container for additional clinic rooms. In the United States, Beale was accustomed to grappling with substantial academic and government bureaucracies in order to secure research space, and he was pleasantly surprised by the ease with which he was able to acquire a spot in Mbarara. As he described it, the whole arrangement was negotiated over a twenty-minute conversation ending with a handshake. Two weeks later, the container was renovated and ready for use.

From these modest beginnings, Beale's research endeavor would grow into a multistudy, multi-institution operation by the end of the decade. When I visited in 2009, I counted nearly twenty ongoing or recently completed research projects funded by Beale's grants or those of his American collaborators, and I learned that the studies now employed over seventy people in Mbarara. This sizeable international research presence, combined with the substantial influx of funds, staffing, and infrastructure via PEPFAR, meant that when Gabriel and other HIV patients attended their doctors' appointments in 2009, they encountered a clinic that had been transformed since its earlier days. Instead of awaiting their appointments outdoors in front of the container clinic, patients sat inside a new two-story clinic building on benches outside the doctors' offices. In addition to doctors and nurses, a small army of laboratory and data entry personnel made their way up and down the clinic hallways, joined occasionally by visiting researchers from Baltimore, Boston, or San Francisco. When examining patients, doctors no longer took visit notes in longhand, but instead recorded relevant clinical findings on a "patient encounter form" that had been standardized with a series of checkboxes to facilitate data entry. These records, as well as laboratory reports documenting a patient's CD4 (T cell) count and viral load results, were kept in the clinic's designated "data room," where data entry staff typed their contents into an American-designed Excel database on a bank of nine desktop computers. In short, Gabriel and the thousands of other HIV-positive Ugandans registered at the clinic were no longer simply targets of care, but also fodder for the generation of scientific knowledge.

Inequality and the Making of Global Health Science

The story of the Immune Wellness Clinic is a telling one. In the space of a decade, Africa went from a continent largely excluded from advancements in HIV medicine to an area of central concern and knowledge production within the increasingly popular field of "global health science." As I chronicle in chapter 1, in the early 2000s, African countries were dismissed as too poor and chaotic to benefit from the high-tech antiretroviral medications that had transformed HIV care and life expectancies in the United States and Europe. Western experts argued that Africa risked becoming

a place of “antiretroviral anarchy” and a “‘petri dish’ for new treatment-resistant strains” (Harries et al. 2001; Popp and Fisher 2002). A decade later, as I write this, Uganda and other African nations find themselves courted by some of the most prestigious research universities in the world as they scramble to find “resource-poor” hospitals in which to base their international HIV research and global health programs. Notably, many of these institutions are U.S. universities, which have seen an explosion of interest and investment in “global health” research and education since the turn of the millennium (Merson and Page 2009). “Africa,” as Dr. Beale told me in 2005, “is in vogue now.”

This transformation, while crucial for new arrangements in the provision of care and the production of knowledge, is far from neutral. Using Uganda and the United States as linked sites, this book rests on the premise that AIDS in Africa has been not only a source of tragic misfortune and death, but also fodder for profound institutional and intellectual opportunity. However, these opportunities are meted out unevenly, and have produced fresh inequalities. I argue that one outcome of this uncomfortable mix of preventable suffering and scientific productivity has been the making of a “global health science” that paradoxically embodies and even benefits from the very inequalities it aspires to redress. Within global health, the very characteristics that once led some Western experts to dismiss HIV treatment in Africa as unwise—impoverished patients, poor infrastructure, understaffed health facilities—are now those that make many African countries attractive as “resource-poor settings” that can offer “global” research and educational opportunities unavailable in “resource-rich settings” like the United States. In other words, to global health, these are *valuable inequalities*. This is true not only for American experts and institutions, but also for their African collaborators, who—like Dr. Salter and Dr. Atuhaire—may find that their ability to grant (or foreclose) access to their patients serves as a form of currency in a transnational research economy fueled by data.

This book is an ethnographic examination of the ways in which global health science both generates and relies upon inequalities, even as it strives to end them. I examine this paradox across a series of interlinked scales, ranging from the molecular tools used to study and treat HIV to the transnational funding apparatuses that underwrite global health research. My intent is to offer a critical geography of expertise that provincializes the

“Western” AIDS science that is often accepted as universal and challenges the historical placement of Africa and Africans at the periphery of scientific knowledge making (Chakrabarty 2000). One element of this critical geography entails tracking the effects of the complex interplay between science, technology, and global inequality in modest, up-country African clinics like the one I describe in Mbarara. But it also necessitates turning an ethnographic eye toward the production of knowledge in laboratories and conference rooms in wealthy American cities like San Francisco and Seattle, and examining the processes by which our often taken-for-granted tools of knowledge making, such as surveys, databases, and laboratory assays, are built, and what they include and exclude.

Because of its close kinship to medical humanitarianism, global health science can be challenging to critique (Fassin 2010a). Both fields share a moral commitment to “saving lives,” and it can feel petty to criticize the approaches of scientists and others striving to improve health in impoverished parts of the world. Given the initial sluggishness of the Western response to HIV/AIDS in Africa, the current enthusiasm for studying and ameliorating global health inequalities is a welcome shift. But good intentions and compassionate action are not immune to the power imbalances and inequalities they seek to redress, and it is thus crucial that we do not obviate critical thinking about that which is done “in the name of global health” (MacFarlane, Jacobs, and Kaaya 2008). Global health, like humanitarianism, is not only a moral endeavor aimed at assisting victims of disease, but also “a political resource (serving specific interests) to justify action considered to be in favor of others exposed to a vital danger, action taken in the name of a shared humanity” (Fassin 2010b, 239; Redfield 2005; Redfield and Bornstein 2010). For this reason, we must seek empirical answers to the questions who is global health science for? Who benefits, and how? What new “species of biocapital” are forged when poverty and inequality are invoked as both the enemy and, paradoxically, the fuel of global health (Helmreich 2008)?

Addressing these questions necessitates critical ethnographic attention to the connections between two kinds of places, often dichotomized as American and African, “industrialized” and “developing,” donor nation and aid recipient, global North and global South. This dichotomization, while certainly valid in many respects, is nonetheless misleading in its emphasis on that which differentiates and divides these places, rather than the many ways in which they are entangled. In contrast, this ethnography brings

together seemingly disjunctive entities: American university doctors and Ugandan lab technicians, crack users in San Francisco and AIDS experts in Kampala, French viruses and Indian pharmaceutical companies, the U.S. National Institutes of Health and Ugandan university administrators, the practice of science and the legacy of colonialism, the epidemiologist and the anthropologist. It is through exploring this mosaic, this “global assemblage” (Ong and Collier 2005), that the politics of global health science become palpable and available for critical analysis.

Biomedical Expertise in Postcolonial Uganda

In the introduction to her excellent ethnography of medical training in Malawi, Claire Wendland outlines the “two stories of biomedicine abroad” most often recounted in the academic literature: biomedicine as a humanitarian, altruistic endeavor, and biomedicine as a hegemonic tool of domination over indigenous knowledge. In both stories, biomedicine is figured as an “essentially Western” field that is exported elsewhere (Wendland 2010, 14). Such a formulation leaves little space for the consideration of African biomedical expertise and practice. (I should note here that this book focuses fairly narrowly on the practices of biomedical experts in contemporary Uganda and the United States. There is a large literature on health and healing in Africa that covers many important issues not examined in this ethnography, including the social nature of illness and medicine in Africa, indigenous and “traditional” medical practices and epistemologies, colonial and missionary medicine, and the experiences of sufferers and families. See, for example, Janzen 1982; Packard 1989; Vaughan 1991; Feierman and Janzen 1992; Hunt 1999; Thomas 2003; Bledsoe 2002; Livingston 2005, 2012; Luedke and West 2006; Foley 2010; Langwick 2011).

Ugandans have been practicing professional biomedicine for nearly as long as Americans have. In the United States, the biomedical profession in its modern form arose following the publication of the Flexner Report in 1910. This report called for the standardization of medical education curricula and the elimination of “proprietary” non-college-affiliated medical trade schools, thus bringing U.S. medical education more in line with European practices and standards (Starr 1982). It was during this same time period that biomedicine also began to emerge as a profession within

Uganda, first through classes offered at the Mengo missionary hospital in 1917, but principally through the initiation of medical training at Makerere University in 1923. Established in Kampala under British colonial rule, Makerere's medical school was intended to train Ugandans and other East Africans to become local providers of biomedical care as "senior native (later African) medical assistants." Although training was similar to that offered in Britain, graduates were not allowed to call themselves "doctors" and were licensed to practice medicine only in government service. Seeking professional legitimacy and the ability to establish private practices, Makerere graduates fought to have their medical degrees recognized by Britain's General Medical Council during the 1940s and 50s (Iliffe 2002). They eventually succeeded, and recognition was granted in 1957. Five years later, Uganda became an independent nation.

The 1960s are generally regarded as the heyday of Ugandan biomedicine, as Makerere Medical School (along with its teaching hospital, Mulago) "became a research and teaching center of international reputation" (Iliffe 2002, 140). Research flourished, buoyed by an influx of foreign funding, and Ugandan and expatriate scientists produced important findings both on disease patterns within East Africa and on so-called "Western" ailments such as cancer and heart disease. Ugandan cancer research, in particular, was considered to be of "major international importance" in its suggestion of links between certain cancers and viral infections (*ibid.*, 142–3; Mika 2009; Livingston 2012). This era of productivity came to an abrupt and violent end under the military dictatorship of General Idi Amin (1971 to 1979), when, as members of the elite, Ugandan doctors and medical school professors became targets of violence and killing, leading many to flee the country. Relative stability returned with the takeover of Yoweri Museveni in 1986, but the government health sector—including the medical school and Mulago teaching hospital—was left weak, underfunded, and largely dependent upon foreign aid (Dodge and Wiebe 1985; Allen 1991; Bond and Vincent 1991; Whyte 1991).

Nonetheless, Uganda's history as a premier place for biomedical education and research in East Africa left it with a core of highly trained medical experts, even after years of political turmoil and economic decline. It was these researchers, in collaboration with American and British colleagues, who would publish some of the first scientific papers on clinical and epidemiological aspects of AIDS in Africa. This work made critical contribu-

tions to scientific understandings of the new disease, especially its heterosexual transmission and association with Kaposi's sarcoma and tuberculosis (Serwadda et al. 1985; Sewankambo et al. 1987a, 1987b; Nambuya et al. 1988; Katongole-Mbidde, Banura, and Nakakeeto 1989). Many of these physician-scientists remain notable figures among Uganda's scientific elite. Based in Kampala, they often hold prominent positions at Makerere and have significant ties to foreign universities and international funding bodies, which seek them out as collaborators or "partners" in global health research endeavors. In turn, aspiring researchers in outlying towns (such as Mbarara) may cultivate relationships with these senior colleagues in Kampala in an effort to gain access to the transnational scientific networks in which the capital city is a key nodal point.

Ugandan doctors and researchers both embrace and chafe against the foreign programs and institutions that simultaneously enable and constrain their work. This ambivalent relationship bears some echoes of the colonial era, when East African doctors relied upon the British state for medical training and employment even as they struggled with it over professional recognition and equality. This relationship between doctors and the colonial state, rather than being one of overt conflict, was one of "uneasy symbiosis" (Iliffe 2002, 4). In the current postcolonial era, the role formerly played by the colonizing state is now partly filled by "donors": the northern nongovernmental organizations, foundations, and governmental aid agencies that provide substantial funding and services to countries where state power has been hollowed out by structural adjustment, political unrest, and corruption. Although these providers of funding and aid can enable projects that might otherwise not be possible, they bring with them sets of expectations and priorities determined elsewhere, in much wealthier settings, which may or may not meet local scientific priorities and protocols. The result is a postcolonial science characterized by a similar "uneasy symbiosis" of collaboration and discontent.

Sherry Ortner has made the important observation that "in a relationship of power, the dominant often has something to offer, and often a great deal. The subordinate thus has many grounds for ambivalence about resisting the relationship" (Ortner 1995, 175). This is certainly the case with HIV research in Uganda, where foreign projects are welcomed as much—and usually more—than they are resisted, due to the resources and opportunities they bring, as well as for the knowledge they may produce. In addition,

I would argue that this ambivalence reflects a field of power relations much more complex than the dominant/subordinate binary described by Ortner. As much as the research relations I describe in this ethnography are shaped by (and sometimes engender) steep inequalities, the story I present is by no means a simplistic tale of “subordinate” African science “dominated” by powerful Western interests (see also Tilley 2011). This is certainly not how the Ugandan researchers I spoke with viewed their situation, nor is it how the Americans envisioned their work.

Instead of a story of domination and subordination, this book tells the story of what Anna Tsing has called the “grip” or “friction” of numerous encounters (2005, 5), including those between American HIV researchers and Ugandan doctors; molecular science and clinical medicine; humanitarian aid and scientific ambition; “global” health and “local” priorities. Friction, in Tsing’s formulation, is a way of describing the “awkward, unequal, unstable, and creative qualities of interconnection across difference” (*ibid.*, 4). Friction thought of in this way can encompass unequal power dynamics between the dominant and subordinate, but it also includes the more complicated relations that disrupt this simplistic binary. Yes, African biomedicine may be a vehicle for American aspirations to “do” global health, but it is also a field of knowledge and practice that actively pushes back against the formulation of biomedical expertise (including HIV expertise) as a Western export. As Tsing argues, “friction makes global connection powerful and effective,” but at the same time, “gets in the way of the smooth operation of global power. . . . Friction refuses the lie that global power operates as a well-oiled machine” (*ibid.*, 6).

Critical Science Studies

A central aim of this book is to interrogate the practices and politics of “global health science” through an exploration of the interplay between HIV science, technology, and global inequality. How do postcolonial politics and development economics shape the production of scientific knowledge about HIV/AIDS? Through what mechanisms have the social relations of global inequality become materially embedded within scientific technologies we use to study and treat AIDS? What are the promises and challenges of global health science in a world marked by radical inequalities

between North and South? In attempting to answer these questions, I draw my principal theoretical guidance from science and technology studies and critical medical anthropology, two subfields that have both strongly influenced research and thought in contemporary anthropology, but have rarely engaged in direct dialogue with one another. My goal in fostering such a dialogue is to produce an ethnography that attends both to the social relations of science and to the political economy of health and medicine—what might be called a work of “critical science studies.”

Until recently, work within science and technology studies tended to be narrow in geographic scope, with most analyses focused either explicitly or implicitly on “technoscience” in the United States and Western Europe (and, less often, Japan).² By mapping “science” onto the West (or global North),³ we have been left ill-equipped to understand technoscientific knowledge production and practice in less wealthy parts of the world. I experienced this bias firsthand at a science and technology studies conference in 2005, when a senior science studies scholar responded to my research by suggesting that perhaps Ugandans were marginalized from international HIV science not because of their geographic and economic disadvantages (as I argued), but because Uganda was not a place where “good science” happened.

In recent years, cross-pollination with both postcolonial studies and anthropology has led to a welcome broadening of the geographical scope of science and technology studies. Scholars have advocated for the importance of studies of “postcolonial technoscience” and argued that “we now need to find out more about how science and technology travel, not whether they belong to one culture or another” (Pigg, in Anderson 2002, 644; McNeil 2005; Anderson and Adams 2008; Seth 2009). This shift has witnessed the

2. Cross-cultural studies of science did occur in the 1960s and 1970s, but tended to use “Western” science as “the benchmark criteria by which other cultures’ knowledges should be evaluated” (Watson-Verran and Turnbull 1995, 115). Even critics who advocated that greater attention should be given to knowledge production in the global South tended to nonetheless implicitly locate technoscience in the North, describing knowledge production elsewhere as “other knowledge systems,” “traditional” or “indigenous knowledge” or “ethnoscience”—rendering technoscience in the South largely invisible except when practiced by colonial powers (see also Nader 1996; Harding 1998).

3. Given that Africa is directly south of Europe, the global North/South distinction seems more appropriate than West/non-West for categorizing regional power differences between Africa and the United States and Europe. Nonetheless, I will at times refer to the “West,” as this designation is still commonly used, and was the term often chosen by my informants.

publication of a growing number of ethnographic accounts of science and technology centered in the global South (De Laet and Mol 2000; Pigg 2001; Adams 2002; De Laet 2002; Hayden 2003; Lowe 2006; Reardon 2005; Sunder Rajan 2006; Müller-Rockstroh 2007). These works pay serious attention to ways in which postcolonial power dynamics, including the politics of development, play out in the structuring of scientific networks and the production of knowledge. Of particular interest to my project is the light these ethnographies cast on science as a *transnational* endeavor, and the practices and processes by which global health knowledge travels in an increasingly globalized and stratified world (Petryna 2009).

The postcolonial geopolitics of illness and poverty, in which wealthy Northern countries often serve as providers of medical aid and health development funding to poor indebted countries in the South, profoundly shapes the forms that transnational biomedical science takes. For this reason, the trajectory of this book is also indebted to the large body of work within medical anthropology that seeks to understand illness and medicine as inseparable from power and inequality. The AIDS epidemic drives this point home at every opportunity, as HIV continues to travel along the economic, gender, sexual, geographic, and racial “fault lines” of society (Farmer 1999; see also Farmer and Kleinman 1989; Farmer 1992; Bourgois, Lettiere, and Quesada 1997; Pfeiffer 2002; Parker 2002; Nguyen and Peschard 2003; Fassin 2007; Biehl 2007; Hunter 2010).

Critical medical anthropology argues against the idea that disease is a freestanding biological phenomenon that exists separately from the social world. In this way, it reveals a close epistemological kinship with science and technology studies, which rejects the notion of science as autonomous from social relations. Both fields of scholarship insist upon the rigorous social contextualization of entities that are often taken for granted as objective, “natural” phenomena. Yet these fields have only recently begun to speak to one another. This is, perhaps, due to their profoundly different approaches to power and inequality. Historically, analyses of power and inequality have been mostly peripheral to science and technology studies.⁴ By contrast, within critical medical anthropology, forms of social, economic,

4. The notable exception to this is feminist critiques of gender and science, including Martin 1991; Harding 1991; Keller 1995; Haraway 1991, 1997; and Oreskes 1997.

and political oppression, or what some have termed “structural violence” (Farmer 1997, 2003), are conceived as inseparable from illness and bodily suffering. Furthermore, public health measures or treatment campaigns aimed at redressing or preventing illness are often examined as instantiations of what Michel Foucault termed “biopower”—the control of bodies and populations through forms of management and administration (Foucault 1978). Under this analytic, even benevolent efforts to govern or improve social welfare have been theorized as forms of “symbolic violence” (Bourgois and Schonberg 2009) or “therapeutic domination” aimed at cultivating docile, self-disciplined bodies (Nguyen 2009; Rottenburg 2009).

What might a field primarily concerned with the politics of suffering and inequality and a field focused on the production of expert knowledge have to say to one another? To answer this question, we need to return to the subject of this book. AIDS, and particularly AIDS in Africa, has produced a surfeit of both human suffering and scientific knowledge over the past three decades. Moreover, these two phenomena are deeply interdependent. It is the presence of untreated illness on a massive scale that has drawn an unprecedented level of international scientific attention to Africa; and it is the desire to produce new knowledge, as well as mitigate suffering, that drives studies of HIV and other global health endeavors on the continent.

The anthropology of medicine in Africa is increasingly focusing an ethnographic eye on questions of power and knowledge production. In pursuing questions related to the ethics and politics of international biomedical research, the sociotechnical construction of bodies and maladies, and the professional, political, and moral contingencies of producing useful bioscientific knowledge and interventions in contexts of extreme scarcity and suffering, historians and anthropologists of Africa are raising crucial questions about science as a global practice in an unequal world (Gilbert 2009; Biruk 2012; Fullwiley 2011; Geissler and Molyneux 2011; Langwick 2011; Hamdy 2012; Livingston 2012). However, though a number of scholarly and journalistic works have examined the inequalities that underlie the global geography of the HIV/AIDS epidemic and its epicenter in sub-Saharan Africa (Kalipeni et al. 2003; Behrman 2004; Iliffe 2006; Fassin 2007; Epstein 2007; Thornton 2008; Mugenyi 2008; Hunter 2010; Nguyen 2010), the production of scientific knowledge about AIDS and global health in Africa is only beginning to receive the kind of in-depth scrutiny that books such as Steve Epstein’s *Impure Science* (1996) provided regarding the early years of

AIDS science in the United States. In his now-canonical account, Epstein argued that AIDS science was “impure science” because it went against the traditional notion of science as being autonomous from outside influences. This is certainly the case for global health science too, where the scientific imperative to produce data is indivisible from both the humanitarian commitment to saving lives and, increasingly, the development imperative to “build capacity” by fostering economic and educational opportunities. It is this productive but troubling nexus between disaster, assistance, and scientific opportunity that is the subject of this book.

Readers interested in the politics of global antiretroviral access and scientific debates over drug resistance in Africa and the United States will find this described in detail in chapter 1. Chapters 2 and 3 will be of interest to those curious about the molecularization of HIV medicine, the politics of technology, and the power of laboratories in global health science. The story of the research collaboration between Dr. Beale and the Wellness Center is recounted in greatest detail in chapters 3 and 4; these chapters will be of particular interest to those seeking a close ethnographic description of the power relations inherent in the practice of global health science “on the ground” and the entanglement of science, development, and humanitarianism in Africa. Lastly, chapter 5 provides a critical account of the motivations and actions of U.S. universities scrambling to create opportunities to “do” global health in Africa and elsewhere.

Opportunity and the Anthropologist: Some Thoughts on Methods

Like many of the American HIV researchers I describe in this book, my own interest in the African epidemic grew out of my experiences conducting AIDS-related research in the United States. During the late 1990s and early 2000s, I was immersed in studying the paradoxical impact of the HIV epidemic on San Francisco’s urban poor, who sometimes found that an AIDS diagnosis represented their best option for obtaining stable housing and services in a rapidly gentrifying city (Crane, Quirk, and Van der Straten 2002). I was a self-identified anthropologist of urban health in North America when, as a graduate student, I was given the opportunity to spend the summer of 2003 interviewing HIV patients in Kampala, Uganda. The offer

came from Dr. Beale, who was my employer at the time. Since 1999, I had worked as an interviewer and research assistant on his flagship study of HIV treatment among San Francisco's urban poor, a project that he was now hoping to replicate in Uganda. During that summer in Kampala, I got my first glimpses of the epidemic outside the United States, as well as the complicated politics of research collaboration between a very wealthy and a very poor nation. It was this trip to Uganda, along with my growing awareness of the scientific and political debates surrounding HIV treatment and drug resistance in Africa, which led me to shift the focus of my own research to the international politics and practices of AIDS science.

At the time that I began this project, I had years of experience working in HIV research in the urban U.S. but very little in the study of Uganda, Africa, or global health. My research process and the ethnographic account I have produced here reflect these disciplinary roots. This is, as many works in anthropology are today, a "multi-sited ethnography" (Marcus 1998). It tracks between multiple locations in the United States and Uganda in an effort to trace the internationalization of American HIV medicine and the growing importance of African sites, actors, and institutions in the rise of global health science. It is the in-between space of these international scientific networks, rather than the United States or Uganda specifically, that constitutes the primary "field site" of my research.

Methodologically, I approached this scientific arena in two ways: first, through participant-observation within Dr. Beale's research team; and secondly, through one-on-one interviews with North American and Ugandan HIV researchers and clinicians. My access to Dr. Beale and his collaborators and staffs in both the United States and Uganda was greatly facilitated by my status as his former research employee. Because I had worked for Dr. Beale for over four years at the time that his Uganda study became my anthropological "object," many of his U.S.-based employees working on the Uganda project were my former co-workers and friends. In addition, I made lasting friendships with some of the Ugandan research staff during the summer I spent working in Kampala. The fact that I was well known to and friendly with both the American and Ugandan research teams as well as Dr. Beale himself provided a baseline of mutual trust and respect that allowed me to gather much of the material presented here, including accounts of the group's research meetings and informal, candid conversations with study staff.

My affiliation with Dr. Beale also facilitated my access to many of the scientists and doctors formally interviewed for this research. Overall, I conducted over sixty one-on-one, tape-recorded interviews with HIV researchers and physicians for this project, roughly equally divided between Americans and Ugandans. These formal interviews were supplemented by numerous informal interviews, conversations, and observations. The formal interviews with American researchers were conducted over twelve months of fieldwork from September 2004 through August 2005, during which time I also was a regular participant-observer at meetings of Dr. Beale's U.S. research team. The Ugandan interviews were conducted during two five-week trips to Uganda in March of 2005 and June of 2009. During these trips, I was also allowed to observe meetings of Dr. Beale's Ugandan research team, as well as staff meetings at the Immune Wellness Clinic. I also conducted participant-observation at an HIV-medicine training program in Kampala that was unrelated to Beale's research. In addition, my experiences working for Dr. Beale in Kampala in the summer of 2003 provided background data for the ethnographic account I offer here.

Two aspects of my methodological trajectory necessitate further comment. First, my time in Uganda was notably brief by anthropological standards, a total of approximately four months spread out over half a decade. Secondly, I was very much a part of the international scientific network that became my primary object of study. These two factors have led me to produce an ethnography that is neither a Ugandan nor an American story per se, but rather a story of the transnational flow of knowledge, politics, research money, obligation, blood samples, viruses, drugs, and research personnel that constitute international scientific collaboration between two nations with very different histories, economies, and experiences of AIDS. My relatively short time in Uganda, as well as my immersion within the American side of the research collaboration, undoubtedly makes my knowledge of American experiences of HIV research and what I call the scientific "turn toward Africa" richer than my understanding of Ugandan perspectives. Nonetheless, I was fortunate that the "population" of scientists I chose to study was highly mobile, giving me the opportunity to conduct some of my research in Uganda, where increasing numbers of American AIDS researchers have initiated studies. While in Uganda, I gained a great deal of insight into the limits of biomedicine as a universal language—even among medical doctors—as I encountered the differences and inequalities that

form the uneven terrain upon which transnational science is forged. I also worked hard to gather the reflections and experiences of Ugandan doctors and researchers treating and studying HIV. It is these perspectives that hold a sometimes grateful and sometimes critical mirror up to American research initiatives, pushing back against and resisting simplistic accounts of international science as either purely well-intentioned humanitarianism or thinly veiled neocolonial ambition.

This ethnography is structured around the experiences of Dr. Beale, and the shift of his scientific inquiry from California to Uganda. I use his experiences and those of his colleagues and employees to reflect on the opportunities and challenges raised by the rise of “global health science” more broadly. However, I could just as easily (and sometimes do) use my own experiences to make many of the arguments I advance in this book. Like Dr. Beale, I was a U.S.-based health researcher who switched my scientific (in this case, anthropological) gaze from the United States to Africa. My switch was motivated both by a desire to conduct research that might somehow contribute to improving HIV treatment access and saving lives in Africa, but also by academic ambitions that saw an intellectually exciting opportunity to study the intersection of scientific politics with social inequalities. Like many other U.S. HIV researchers, I opted to work in Uganda because that was where the opportunity presented itself and because it was a relatively peaceful country where English is a national language.⁵ Moreover, like the global health research projects I describe throughout this book, my research would have been impossible without the cooperation and guidance of Ugandan colleagues. These colleagues provided not only anthropological insight, but also indispensable logistical and bureaucratic assistance to yet another American seeking to study their AIDS epidemic.

In chronicling the at times messy experiences and motivations of collaborating American and Ugandan scientists, this ethnography takes seriously the incitement for anthropology to “go beyond signaling the presence of experts and toward grappling with what kinds of persons they are” (Boyer

5. More accurately, the southern portion of Uganda, where most international AIDS research projects were based, was peaceful. The rural north was suffering through its second decade of a civil war against the rebel Lord's Resistance Army. The war displaced hundreds of thousands of people in the north and made traveling to that area of the country dangerous, but had little impact on the ability to conduct research in Kampala or in Uganda's southern and western regions.

2008, 39). In Dr. Beale, I was very lucky to find a scientific expert who was not only open to but actively encouraged anthropological critique of the power dynamics of international research. I can only hope that my accounts of the challenges faced by his project do justice to the complexity of these power dynamics, as well as to his deep commitment to improving HIV treatment, care, and research opportunities for Ugandan patients and health professionals. I also hope that readers will remember that any critiques I offer of his projects or other global health research endeavors are critiques that can be equally applied to my own project. My research is as much a product of the turn toward Africa and the rise of global health science as any of the biomedical research projects described in this book, and, as such, embodies many of the same aspirations and challenges.