Maps begin to make sense after the clinical photographer’s work is done. Normally, maps move into focus when cases have been diagnosed and verified and a clinical authority is reinstated. Mapmaking means to count cases and to place them into a spatial and temporal order to visualize the disease’s location, to ask why cases have appeared in these places and not in others and to conclude, if the emerging pattern can tell us anything, on what this disease is. Through photographs, AIDS had become readable as a pattern of discrete infections, symptoms, characteristic signs and visceral impressions on bodies of particular persons, defined as a population at risk. Maps were made to step back from this close clinical perspective and its arbitrary relationship with the individual body. As a view from above, maps resolve momentous encounters with the disease on the ground into a pattern, creating a two-dimensional representation of space and time. Maps do not capture disease: They are a genre of abstraction and imply a theoretical representation of the relationship between disease and its place. They visualize ranges of cases arranged in an order due to their spatial and temporal occurrence to reveal the shape of AIDS as an epidemic.

Infectious diseases become epidemics through scale. The AIDS epidemic was visualized through spatial perspectives from urban to national, from regional to global configurations. To think through the horizontal relationships between disparate local outbreaks, or to conceptualize hierarchies between the experience of “local pain” and the politics of “global prescriptions” are challenges that AIDS provoked on a daily basis.\(^1\) Many metaphors have structured geographical scholarship on the global history of AIDS, reaching from “levels” to “networks” to “assemblages,” each of which insinuated an angle to think through the global governance

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of AIDS, the transnational AIDS industry or international networks of activism.\(^2\) And last but not least, the characteristic tensions that AIDS poses to local and global perspective have carved out much of the framework of contemporary global health.\(^3\)

In this chapter I will step back from arguments about the relative success and failure of the world’s response to the global AIDS crisis and engage instead with maps as instruments that shaped the forms and configurations through which this global crisis has been made visible. Moreover, this begs the question if maps could and should be considered as pictures at all? Maps, I argue, played an essential role in changing the picture of AIDS in the late 1980s. They resolved the syndrome’s exclusive association with risk groups and bodily identities to enable a seeing of AIDS in space, scaling up the epidemic from the uniformity of an urban niche to a complex pattern of global diversity.

The individual case, which had been the primary concern of clinical photographers, was flattened down in maps to become a single datapoint in a range of spatially located incidences. The patient became a public health event expected to affect communities, nations and global orders beyond any previous estimations.\(^4\) From here onward, what mattered was not so much the shape and specific configuration of a clinical diagnosis but the number of cases, their spread and the social and cultural structure of their distribution. Nicholas King described this as “scale politics of emerging diseases” to draw attention to the “scalar narratives,” in which an epidemic like AIDS appears as an ever-emerging process, overcoming early assumptions, containing of national borders, exceeding known spaces and providing place after place to be mapped and thus better understood.\(^5\)

Districts of AIDS were identified early on in San Francisco, Los Angeles and New York, from which the epidemic was understood to

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have spread across the American continent.\(^6\) But the CDC extended the risk group definition in 1983 to include the 4Hs: homosexuals, Haitians, heroin Users and hemophiliacs.\(^7\) This let a picture of the epidemic’s possible extension emerge that photographs simply failed to capture. The visualization of AIDS moved away from the patient and depictions of his or her symptoms to favor a cartography of the epidemic’s spaces. With this change in media from photographs to maps, the confined space of the physiological body of patients was exchanged for the limitless spatial coordinates of cities, countries and the international landscape of global health.\(^8\) With the mapping of spaces of AIDS, the bodies affected by the immunodeficiency syndrome fell out of focus.

Maps and practices of mapping have been discussed widely in the history of science and medicine in the last 50 years. As Jacques Bertin had already summarized in his readings of the *Semiology of Graphics* from the 1960s, the map was disentangled from “the dead image, the illustration” and has become a “living image . . . no longer only the ‘representation’ of a final simplification, it is a point of departure for the discovery of these simplifications and the means for their justification.”\(^9\) In the following years, maps and the technology of mapping developed into a cartographic “science of communication.”\(^10\) The map has been thought of as a universal metaphor for cognition, thinking, systematizing and observing anything spatial or structured in almost every discipline. Other authors emphasized the analytical capacities of mapping practices and their association with mathematical models, which lead to a tendency to formalize accounts of reality into the simplified doubles of simulacra.\(^11\)

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\(^8\) Foucault has described this exchange between the spatial coordinates of the body and geographical coordinates as different modes of spatializing or embodying a disease. But the notion of the epidemic gave also birth to a “historical and geographical consciousness of disease.” Michel Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception* (New York: Pantheon Books, 1973), 9, 24.


In the 1980s, at the time AIDS appeared, mapping and cartography were attracting growing interest as powerful rhetorical instruments, which opened analysis beyond a normative model of cartography. John B. Harley challenged historians to separate their analysis of maps from the narrative claims cartographers held on the products of their own craft.

Once critical analysis moved beyond the idea of the map as an “objective” or “scientific” account of reality, Harley points to two distinct sets of rules that dominated the Western history of cartography. Technical methodologies of data visualization and design as well as questions of accuracy governed the production of maps. A scientific epistemology guided map makers to arrive at correct relational models, translating spatial coordinates into appropriate representation. Only through observation and measurement could cartographic truth be acquired. A second set of rules, Harley argues, structured the cultural production of the map. This is where values, politics and ethics find their way into the production of maps, although often opaque or hidden in the cartographer’s intention to produce an objective account of reality. Accordingly, Harley asked how historians of maps could depart from reading maps in the way cartographers intended them to be read, to engage instead with the invisible ingredients and the unseen silence in the visualization of a map. In this sense, I ask how maps were invested in a true visualization of the AIDS epidemic and how this mode of visualization enabled certain ways of seeing the epidemic, attached to specific values and ethics, while rendering others unseen.

One of the two maps printed in the first AIDS atlas published by Farthing in 1986 is concerned with the global transmission routes of the epidemic (Fig. 2.1). A black-and-white background with outlined contours of the world’s continents is centered on the Atlantic Ocean and visualizes the “probable origin” through routes of transmission between the continents. The map uses colorful arrows to indicate the supposed direction of spread. The title announces this despite the tentative caption to be a representation of “the AIDS epidemic,” which presents the map’s content as a model of the historical and global shape of AIDS. Both its particular cartographical argument as well as its graphical implementation acts as an exemplary predecessor to many similar mappings of AIDS that appeared in the years after the atlas was published.

While Farthing’s map seems to imply a general argument about the epidemic’s global distribution, by 1986 what would become the global expanse of the epidemic was not widely acknowledged. As discussed previously, photographs dominated in this first atlas as means to demonstrate what AIDS was. As only one of two maps in Farthing’s atlas, this figure’s main purpose was to resolve a very specific problem of AIDS between 1983 and 1986. The occurrence and initial classification of AIDS through the rationale of risk groups, most notably the 4H, was problematic for attempts to align the epidemic profile with the concept of a causal viral agent. Since 1983 such a virus was the widely accepted mode of transmission for AIDS, but a viral infection should have achieved a larger distribution and a very different epidemiological pattern. Models were required that had the power to align a viral etiology with the emergence of the particular social pattern associated with AIDS.
in its first years. When Farthing's map was drawn – the author and the designer of which remain anonymous – it was meant to solve this epidemiological puzzle from its endpoint. The assumption was that the particular social and spatial occurrence of AIDS in the United States were the final footfalls in a chain of epidemic events that lead back not only to a history of AIDS before 1981, but also to original habitats outside the United States. In other words, the origin of the narrative this particular model of AIDS distribution suggested was not a random spot on the African continent but rather the point of arrival in the United States. Although the genre of maps marked a shift in interest away from the body of person’s suffering from illnesses associated with the immunodeficiency syndrome, its cartographic isolation of geographic incidence focused on the same populations and asked for the historical and geographic conditions of this emergence.

How do new diseases emerge? Among the map's practical uses, it provided some commentary on this old, yet pressing question. How have maps worked differently from written models on the communication of unknown origins and spatial extension? Why do we need maps, and what kind of visualization do they produce that can assist our understanding, analysis and ultimately our containment of epidemic threats? Furthermore, how and to what end do spatial and temporal dimensions, on which diseases are plotted, become significant through maps? How were these visual arguments about space then understood and applied in frameworks of local public health strategies, national AIDS politics and global health institutions such as the WHO? In different forms, at different times and different places, maps were used to problematize AIDS within different spatial, ecological, historical and etiological frameworks. The resolution that maps provided to preexisting ways of seeing AIDS, increased diversity, extended variability and communicated a lasting anxiety that accompanied the globalization of AIDS.

Many historical traditions of mapping diseases in space were revived to make the global vision of AIDS. Ackerknecht considered geographical thinking to be essential in the genesis of a modern disease concept in the nineteenth century. Separating, clustering and mapping diseases helped crafting the specific entities of cholera, typhus, typhoid fever, bubonic plague and many more. This practice was showcased in the


mid-nineteenth-century diagrams of John Snow’s Broad Street pump affair in London and culminated in August Hirsch’s extensive work on the historical geography of diseases. Frank Barrett has shown that the methodological underpinnings of medical geography made it indispensable for the growing significance of scientific methods in medical thinking. Beyond the nineteenth century, this legacy continued to structure thinking on infectious diseases that was not segregated from bacteriological models but evolved tangentially to the new laboratory sciences. Medical geography found its destination in the birth of modern tropical medicine. Deeply implicated in colonial and postcolonial frameworks, here the mapped ecology of certain diseases became the most important way of understanding the increasing complexities of yellow fever, malaria and sleeping sickness. It was Jacques May who proposed in the 1950s that “many secrets of nature” could have been revealed if diseases had been accurately mapped throughout history.

Tom Koch has provided the most extensive and ambitious work on the history of mapping diseases to date. Placing a disease on the ground, embedding a disease in its pathways through social, natural and geological spaces, Koch argues, has enabled productive methods for combining data, theories and models to arrive at pictures of diseases. These maps seek to answer the three most essential question of modern epidemiology: Where did this disease come from? How is it distributed? What is it? But maps can hardly be approached as representations of the disease, Koch warns us. The map has traditionally been a thinking device and a means of experimental combination and thus resembles the epistemic structure of a laboratory rather than the presentation of final outcomes and results. Maps create the context in which proposals can be tested, or rather, “mapping is a method of assemblage


within which ideas are constituted and then argued about specific experiences.”

Maps, Koch concludes, craft the conditions for scientific approaches to epidemics. Maps should be approached as a “making of” arguments about diseases and, hence, are well-suited to epidemiology.

Following Koch’s journey through centuries of disease geography, the history of epidemic mapping can be extended into the emergence of digital methods for disease mapping, such as geographic information systems (GIS).

AIDS was the testing ground for many new technical procedures. It was seen by many geographers as an ideal field to approach large datasets with GIS methods. The history of AIDS’s transformation into a global phenomenon is as much characterized by inventive new mapping technologies, as it is shaped by a revision of what was assumed to be the place of AIDS. It can seem as if the fast tempo with which the epidemic transformed in its approach to a second decade forced the development of new mapping technologies to keep up.

Quantitative approaches to the epidemic were published to find logical and affect-free answers to the puzzling conditions under which the epidemic had left its original territory, its district and space in the gay communities and inner-city pockets of poverty. Mapping AIDS would not only provide a broader vision of a disease distributed globally, but also of an infectious epidemic overcoming national, continental, social as well as – once again – epistemic borders.

With regard to the extensive and complex set of forms, genres, aesthetics and styles applied to mapping AIDS, this chapter focuses on three distinctive ways in which maps have shaped the history of AIDS. First, the chapter will open with an interrogation of the conditions under which maps became necessary in the first place. What remained initially unseen that maps could turn into visible information? And then, what was made unseen in the transformation of visualization styles and scales from clinical photographs to maps? Second, this chapter shows how the history of maps characterizes a history of constantly fleeing spatial certainties. With every map, with every new way of charting the territory of AIDS – the gay district, the urban environment, the metropolitan areas, the national states, the Western world and finally the globe – the story of

21 Ibid., 13.
mapping AIDS is a history of spaces and coordinates that have at some point left the picture. Third, the chapter will look to the newly emerging home of the epidemic, as AIDS became a disease of the global south. It became an epidemic of poverty, neglect and Western ignorance. Maps contributed to crafting AIDS into a new paradigm of thinking and practicing global health policy, where the key challenges were scarcity, education and – later – as TAC, the South African Treatment Action Campaign amplified an old activist’s slogan, to get “drugs into bodies.”

As Didier Fassin said so well, the question was how maps contributed to a widespread “political anesthesia,” which characterized many years of the West’s attitude to AIDS in Africa.

As AIDS became global, photographs of patients certainly did not disappear. But their meaning drastically changed once the genre had lost its monopoly as a representation of the epidemic. In some countries such as Brazil, photography inherited a critical vision, amplified by anthropological research but never fully separated from its clinical and medical heritage. In Botswana, photographic captions of AIDS became personalized, were integrated into the scarcity of basic medical resources and used sometimes as a last resort to organize the individual deidentification with the horrible realities of disease. But medical photographs also came to serve in East African public health campaigns, which favored the before-and-after cut-up as incentives for taking up treatment. As already indicated with the WHO’s image of AIDS, photography became cruelly ethnographic and an instrument to enhance the perception of AIDS’s diverse global appearance. Photographs depicted radically discrete ecologies, social and cultural environments in which AIDS appeared, working in opposition to maps designed to join the dots.

In the AIDS atlas, the epidemiological design of AIDS was delegated exclusively to maps. In the first series, Farthing’s 1986 and 1988 edition’s question of both geographical and biological origin and causation

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were key to the unknown mapmakers as well as to the atlas editors. Geographical visualization was combined with diagrams of the phylogenetic heritage of the virus. Spatial patterns seemed to provide the missing link in the story of how the virus emerged out of a long-standing genealogy of existing and known viruses. The epidemiological chapter in Farthing’s atlases used maps in this way to visualize regions susceptible to the evolutionary excess in which the virus appeared. The two printed maps in each edition drew attention to different host species that were suspected for enabling transmission, yet it remained a mystery how the virus seemingly jumped from an isolated region in Central Africa to the continent, and how this then caused a pandemic.

The KS-focused atlases of Friedman-Kien did not include any maps. Although his argument relied on various geographies of KS, maps seem to have been insignificant to his nosological claims. But with the publication of Mildvan’s first atlas in 1995, the map became a crucial and highly professionalized tool to argue for historical developments, as much as to emphasize prognostic claims about the “future epidemic.” As visualizations of statistical data of the successive distribution in the United States, or as representations of hypothetical models relating AIDS to social patterns of gender, drug usage or income, the five (in 1995) to eight (2008) maps throughout Mildvan’s atlas series are a key medium to relate what was known about the biological nature of AIDS with its social, cultural and spatial determinants. In the last issue from 2008, AIDS is fully recognized as a global issue, which is reflected by the framing of the atlas as an International Atlas, constituted through a variety of world maps plotting HIV and its effects on the background of global health.

The main concern to atlas editors as they integrated and discussed the maps was the social and cultural diversity that appeared once AIDS was visualized through geographical filters. Why did AIDS appear in many of the Western countries as a male homosexual-transmitted disease, while its distribution on the African continent seemed to be overwhelmingly heterosexual? What was driving an almost exclusively male infection rate in United States and Europe, while it appeared predominantly female in other areas? Why was transmission from mothers to children such a problem in countries of the Southern Hemisphere, while it seemed a

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moderate issue in the Northern Hemisphere? Maps were concerned with questions that challenged a unified idea, a homogenous concept and an all-encompassing picture of AIDS because they presented significant local differences.

As geographers know all too well, maps are essential to turn a space into a place, to render a nondescript set of coordinates into a lived, meaningful and visible entity.\textsuperscript{34} Maps constitute places, but a place is rarely understood to be characterized as a set of static qualities, rather a locale in flux. It is mobility that makes space and place interesting in the study of phenomena such as diseases. A disease’s arrival and its circulation within confined spaces, as well as its departure, challenge geographers to map a static picture of a constantly moving, evasive and fluid process. Through a map, particular qualities of space are interrogated as a means of understanding why an epidemic appeared in that specific mapped place. The map seems to ask its readers what allowed the epidemic to thrive in this place, and what can be learned from these particularities to contain further distribution. Maps draw theories, data, visions and histories together through intensely versatile diagrammatic techniques.\textsuperscript{35} As an effect, maps present themselves as “sampling devices” of plagued places. But where Rosenberg saw the epidemic as a device to unpack social, cultural and political histories, the map offers an instrument of linkage between the conditions of a place that become visible through the lens of the mapped epidemic, while the epidemic is mapped through the lens of these local conditions.\textsuperscript{36}

\textbf{Losing the AIDS Space}

By 1986, when Farthing included the map resembling Gallo’s model, the global dimension of AIDS and the syndrome’s occurrences in European, Latin American and African countries were verified and officially acknowledged by public health institutions around the world. But the image of the epidemic as a global phenomenon did not change as quickly as its trajectory took on speed in reaching new locations, addressing new patterns of distribution and posing new challenges to its containment. A crescendoing chorus of voices who raised their concern throughout the

\textsuperscript{34} See, e.g., Edward Casey, \textit{The Fate of Place: A Philosophical History} (Berkeley: University of California Press, 1997).


1980s about the overly narrow geographical perspectives on the distribution of AIDS slowly changed the popular perception of AIDS into a global disease. In many cases, maps were an essential and effective tool in bringing about this new view of AIDS as a crisis without borders.

Among the chorus were global health advocates like Jonathan Mann, who was recruited by the director of the CDC’s AIDS program in 1984 to join one of the earliest programs established to grapple with the scope of the AIDS epidemic in Africa. Project SIDA was located in Kinshasa, Zaire (today’s Democratic Republic of Congo), operated from the Mama Yemo hospital and worked as cooperation of the CDC with the National Institute of Allergy and Infectious Diseases (NIAID) and the Belgium Institute for Tropical Medicine. The group was headed by Peter Piot, who would later become the first director of Joint United Nations Programme on HIV/AIDS (UNAIDS). Project SIDA was described as the earliest systematic attempt to answer fundamental epidemiological questions about AIDS beyond the North American and European soil. As Jon Cohen recalls, the project found its own purpose and, more crucially, funding when the first plausible infectious chain was proposed that would connect cases in Zaire with cases in New York and in Los Angeles.

Peter Piot had seen patients with clinical signs resembling a pattern of AIDS in his previous research in Zaire and had tried since 1983 to find the money for further investigations to prove his suspicions that AIDS was rampant on the African continent. Thomas Quinn and Richard Krause from the NIAID had also in 1983 worked in Haiti to investigate claims of a Haitian vector of the epidemic. On the island, they had learned about large groups of Haitians who had worked in Zaire after its independence was wrestled from Belgium but were forced to return to Haiti in the late 1970s. Once the details of this migration pattern emerged, a possible trajectory seem to be found and much of the CDC’s interest in Zaire was guided by finding out where the disease’s might had come from. As Mann was sent by the CDC to head a small research

38 Piot was later known for his ground-breaking research on Ebola and since 2010 is the director of the London School of Hygiene and Tropical Medicine.
team accompanied by two physicians from Zaire, Bosenga Ngali and Eugene Nzila, they quickly arrived at the essential conclusion that the transmission occurred predominantly through heterosexual intercourse. Attempts to publish these findings failed initially, as the historian Elizabeth Fee reports, when their paper was rejected by the *New England Journal of Medicine*. The growing presence of AIDS in Africa and the possibility of heterosexual transmission was widely refuted by peer reviewers and by many attendants of the first international AIDS conference. After Piot and colleagues experienced rejection from a dozen further journals their findings were finally published in 1984 by *The Lancet*.

It took until roughly 1987 for a larger American and European public to wake up to the looming reality of an epidemic reaching far beyond its assumed urban pockets of sexual deviance. One condition for this acceptance of AIDS’s global dissemination was its framing as a disease that posed a threat to the general public. The AIDS report of the American Surgeon General, published in 1986, articulated a drastic warning of impending epidemic catastrophe that could affect anyone, anywhere. The old image of AIDS as a disease of “AIDS victims” who were inherently different and geographically separated in urban enclaves was challenged. As the *Scientific American* wrote, “[T]hat security blanket has now been stripped away.” The overt identification of AIDS with other bodies in their supposedly closed communities posed now an increased risk, rather than any form of containment. Considering this, doctors such as Abraham Verghese, a general practitioner from rural Tennessee, understood the need to map the epidemic’s arrival in the hinterland. Geographers like Peter Gould described the creeping advance of the epidemic over the American landscape. Countless

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authors acknowledged what appeared to be a new outlook: AIDS was becoming a pandemic.\textsuperscript{48}

The most striking argument for the grander scale of an epidemic that transgressed local, regional and national boundaries was to prove its original global history. The first model, which narrated how AIDS arrived in the United States, served as a paradigm for the atlas visualization previously mentioned (Fig. 2.1) and became popular as the “Gallo-Model” with the publication of a series of articles in the \textit{Scientific American}.\textsuperscript{49} The publications were authored by microbiologist Robert Gallo, who presented his model to a wider public in his quest to demonstrate the validity of his hypothesis for a retroviral cause of AIDS.\textsuperscript{50} His model of original distribution connected the local appearance of AIDS in specific subpopulations in the United States with a retroviral agent of probable zoonotic ancestry from Central Africa. He linked the parameter under which the epidemic was first recognized in homosexual urban communities with a plausible model of original distribution, and the model also importantly crafted an argument to emphasize the sexual transmission of AIDS. The model and the map (Fig. 2.1) were used as evidence that the scale of AIDS was indeed driven by a single viral agent, even if it was believed to be a notably inefficient kind of virus.

The map and the underlying model resonated with a long-standing problem in epidemiology. Maps rarely visualize certainty about a disease’s occurrence and ecology, but rather interrogate the conditions under which existing knowledge can be aligned with plausible hypotheses. In the discipline of geography maps are normally understood to be instruments that enable and encourage controversy rather than aspire to define fact or invest in unshakeable propositions. Gallo discussed four different possible explanatory models for the newly emerging epidemic, each of which would have aligned with the cartographic picture of the epidemic deriving from his model. (A) The appearance of AIDS could be attributed to an old, but not yet isolated disease. As its appearance was


characterized by the aggregation of known diseases, it might have gone unseen for an unknown amount of time. For Gallo, the absence of traces of the virus in human blood samples before the 1960s was evidence enough to eliminate this option. (B) The virus could be understood as a mutated version of a well-distributed nonpathogenic virus, a theory that he could have proven by analyzing antibodies in stored blood samples. (C) The zoonotic explanation was a crucial element to Gallo, as the virus appeared as a mutated version of a virus found in African Green Monkey. But most crucially, Gallo argued that (D) the “recent spread of the virus from an isolated group [was] due to social change.”

The Gallo-Model is central to the history of geographic visualizations of AIDS. Maps like the one in the 1986 atlas must be understood as simplifications of the model, reducing it to scant visual information only. Gallo did not use maps to visualize his assumptions in his contributions to the *Scientific American*, but instead adopted the initial assumptions raised by Mann, Krause and others about the Zaire-Haiti-US connection to advance the argument on probable points of origin and pathways for the distribution of HTLV-III/HIV-1. Gallo claimed that STLV-III, a virus prevalent in the African green monkey, developed into HTLV-III/HIV-1 through a series of mutations (HTLV-IV and HIV-2). He believed these variants of the virus circulated throughout the 1960s and 1970s, barely recognized in some Central African countries. Retrospective blood analysis suggested that this region was the most likely origin, as by 1986 comparable viruses had not been found in other countries. The open question Gallo posed in 1986 included how exactly the virus had become the deadly variant HIV-1, how this particular virus left the African continent and how the former endemic situation in Africa turned into an epidemic.

The three geographers Smallman-Raynor, Haggett and Cliff based in Cambridge, the United Kingdom, published in 1992 *The London International Atlas of AIDS*, which was the result of extensive studies conducted both locally and globally over the course of the late 1980s. Smallman-Raynor and his colleagues discussed Gallo’s model as one of the first valid proposals of original distribution and drew an annotated


52 While Gallo believed that HTLV-III was the original AIDS virus, which he therefore called HIV-1, his claims were later refuted by Barre-Sinoussi and other virologists. See Chapter 3 and Epstein on the details of the historical virus dispute. Steven Epstein, *Impure Science: AIDS, Activism, and the Politics of Knowledge* (Berkeley: University of California Press, 1996), 79 ff.
version for their atlas (Fig. 2.2). As the geographers pointed out, Gallo’s model was not cemented in data but can best be understood as a thought experiment to align the very short history of AIDS at the beginning of the 1980s with the emerging hypothesis of a causal retrovirus. The hypothesis connected the occurrence of AIDS-related diseases in specific populations to the social change that led the virus to spread “from an isolated group in East Africa.” Mass migration between Zaire and Haiti might have caused the virus to cross the Atlantic, and as Haiti was perceived by Gallo as a favored holiday resort for metropolitan American homosexual men, it seemed plausible that the virus found its entry point to the United States here. But Gallo’s model fell from favor due to questionable

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55 Haiti was suspected throughout history to have harbored many diseases, such as syphilis, cholera and yellow fever. See, e.g., R. C. Holcomb, *Who Gave the World Syphilis? The Haitian Myth*. Vol. 01270. Harvard Medicine Preservation Microfilm Project (New York: Froben Press, 1937).
accuracy as data and theories about the origins of AIDS became more complex. But as the map in the 1986 atlas demonstrates, it was one of the first consistent models that crafted a vision of a history and geography of the epidemic before AIDS history officially began in 1981.

Diagrams of the Topography of Outbreaks

Already in 1983, when the CDC published a paper that indicated increased risk of contracting AIDS among homosexual men, heroin drug users, hemophiliacs and Haitians, the “geographical question” could no longer be ignored. Only the first three groups of the 4Hs supported a case for locally limited distribution. Cases among Haitians were scattered across the United States, almost none of which were reported to be homosexual or directly implicated in drug use. These “anomalous many” presented the scientists with a puzzle. Some argued that the unusual social pattern undermined the validity of a viral cause altogether, while others, like Gallo, used the distribution pattern to turn geographical aspects into supporting evidence of specific viral candidates. Etiology and ecology, theory about the syndrome’s cause and theory about the local conditions that contribute to significant local prevalence needed alignment.

By 1989 it seemed like common sense that “individuals with HIV-1 infection in different transmission categories, geographic locations, or ethnic groups have demonstrated distinctive patterns of occurrence and manifestations of AIDS.” But old assumptions about where AIDS would be, how it was transmitted and who was at risk persisted long into the 1980s and proved difficult to resolve. Spaces like the rural hinterland lost their imagined immunity and as clear boundaries between the “implicated and the immune” began to falter, representations of the spatial structure of the epidemic’s transition became a key instrument in proving old assumptions wrong and making previous pictures of AIDS

unseen. Maps approached the new puzzle of ever-increasing variance in occurrence patterns and – crucially – warned of expected distribution into the general population.

Indeed, one of the first local spatial models of AIDS was called the “San Francisco model” and published in a 1983 issue of The Lancet. The authors combined incidence rates, clinical reports and rather fixed assertions about the homosexual geography of districts within the city, to argue for an overriding sexual transmission of the disease, driven by geographical proximity. A shared lifestyle, the authors claim, was indicative that social proximity was a condition for the distribution of AIDS, so that social practices became a geographic risk. As Preda argues, these associations of spaces, which had been associated with particular risk behavior, exaggerated the importance of risk groups in a geographic narrative, in which the classification of social groups according to risk zones and transmission categories along spatial determinants cemented their association with AIDS.

Following the trend of how, why and when AIDS had left the place assumed to be its original environment, the authors of the 1992 The London International Atlas of AIDS produced a detailed spatio-temporal analysis of San Francisco. They demonstrate the patterns of distribution within the city’s boundaries and question existing assumptions and framings about the epidemic’s supposed natural spaces, such as presented in the 1983 paper. Geographical reasoning, the art of linking different variables within a confined environment, was pursued and praised by these authors as a method of critical inquiry, which should improve strategies of intervention and prevention in a field marked by a rapid pace of transformation.

For their study, a sequence of six maps of San Francisco was plotted onto one page of the geographical atlas (Fig. 2.3). The upper row relates the point datasets of approximately 7,000 AIDS cases to the standardized morbidity rate (SMR) of San Francisco. The size of the points denotes the number of cases, while the shading is used to visualize the SMR. The three principal transmission categories of homosexuals, homosexual


62 Alex Preda, AIDS, Rhetoric, and Medical Knowledge (Cambridge: Cambridge University Press, 2005), 191. Furthermore, Preda argues that these practices were indicative of a combination of contagious and infectious models of how AIDS was transmitted.

intravenous drug users and heterosexual intravenous drug users are used to compare three different visions of total AIDS mortality in the same district. Almost 87 percent of registered cases before 1989 are shown to be due to homosexual transmission. These cases are pinned to the traditionally gay districts of San Francisco, the Castro, Upper Market, Noe Valley and Diamond Heights. With lower total numbers, the distribution of heterosexual transmission and drug-related transmission seem, on first sight, to resemble the same spatial pattern.

The bottom row of the map adds a visualization of interval to the ratio graph mentioned previously. Where ratio graphs plot datapoints in

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64 The characteristics of mapping data can be divided formally into four different scales: nominal, ordinal, interval and ratio. While the nominal scale presents the weakest form
relation to each other, intervals add a visualization of the development of these datasets over time: Here the time it takes for numbers to double – the doubling period – is sorted into the three transmission categories. Epidemic velocity was measured from December 1987 to December 1989, visualized through five different shadings. The result primarily suggests that the highest velocity of the epidemic’s transmission is not to be found among the male homosexual population, but among heterosexual drug users, which were clearly located in different parts of the city (see map C1 in Fig. 2.3). The “AIDS heartland,” as San Francisco was referred to, was presented in a vision, which showed popular assumptions about the whereabouts and the timing of AIDS as a problem rather than a solution. What the visualized data disclosed differed from expectations. While a rate of incidence of the total case number persisted to be higher among a gay population even at the end of the 1980s, the velocity in relation to a standardized morbidity ratio demonstrated the epidemic was soaring outside these demographic groups and spatial coordinates.

By applying combinations of case data, time spans and correlative SMR, the atlas editors pointed to the risk of exclusively focusing public health strategies on a single risk group. The growing numbers of cases in other subpopulations had fallen outside of the spotlight. The underlying trends and velocities were made visible by turning the geographic perspective from a ratio into an interval: While the first row suggests a common and all too familiar spatial structure in which AIDS is found where it was expected to be found – roughly the Castro – it is only in the interval that the displacement of the epidemic, its threat beyond assumed spaces, became visible and vivid.

Similar models were created for New York and other “Metropolitan-Level Epidemics” of AIDS in and outside the United States. To demonstrate the necessary widening, restructuring and reconsideration of who were at risk, maps provided a new, spatial framing that pointed beyond identities and familiar lifestyle practices. To include risk for nonwhite populations, to draw attention to developing patterns within the urban space and to raise awareness to the growing historicity of clear-cut assumptions about AIDS districts is, what Smallman-Raynor, Cliff and Haggett considered the particular capacity of their geographic visual commentary on the epidemic. After all, they concluded this section of the

in which numbers and symbols are equivalent with cases of a specific disease, ordinal scales present a form of ranking, in which different sizes, masses and disease burdens can be visualized in relation to one another. Ratio and interval scales present data in equivalence, in rank and in the ration between intervals. See Cliff, *Atlas of Disease Distributions*, 13.

atlas with a warning to white, heterosexual populations about the very categories in which AIDS incidence was originally registered, counted and plotted. “If the epidemic continues to burgeon,” they forecast, “such sharp contrasts may disappear as HIV becomes more widely dispersed in the heterosexual population.”

The way AIDS was visualized in these accounts of the urban space was independent of individual symptoms but relied on the formalization of patterns. Historically, epidemiology has been described as the substantial driver for disease entities to be defined as unambiguous as possible because only the well-defined class allows for counting, calculation and depiction. To arrive at a characteristic spatial pattern of scattered incidents, the events of infection and the moments of succumbing to illness on the “epidemic streets” require classification, abstraction and simplification. Catherine Waldby has discussed this transformation of AIDS-related disease events among individuals into spatial temporal pattern as a compression of complex, far-flung and heterogeneous processes. The huge variety of stories, experiences and encounters of each AIDS outbreak is reduced to a simple numeric expression. To enable the biopolitical-surveying eye of epidemiology, Waldby continues, the map needed to become a technology that diagnosed the epidemic within the fabric of the population. “Epidemiology is the science of the repetition of disease in the population, but in the analysis of such repetitions it also seeks to generate a higher order system of explanation than that of clinical medicine,” she explains. Waldby’s conclusion suggests this higher order is to be found in epidemiology’s fixation on the risk group of gay men. Combining the sexualized population with the diseased population thus established a biopolitical order in which maps and geographical technologies became instruments to make those populations visible; to make communities seen in which the infectious risk was supposedly harbored from where AIDS might spread and threaten the healthy majority of the US population. But maps are more versatile than this, as the example of San Francisco shows. They indeed work as powerful visualizations of populations whose very shape was crafted in the eye of epidemiological consideration of their relationship to a disease,

67 Ibid., 231.
but maps can also unfold a powerful intervention in established and sometimes epidemiologically concerning assumptions. To overcome the idea of an AIDS heartland meant to leave the impression of a space of containment behind.

Mappings like the ones previously shown sit comfortably in the long history of mapping disease within the urban environment. The most prominent example is clearly to be found in the history of cholera in London in the mid-nineteenth century. After the outbreak of 1849 killed more than 62,000 inhabitants, controversy about the means of distribution achieved new urgency. The majority of medical experts at that time stuck to their conviction that cholera was caused by bad air, inherently connected to filth and waste, and thus cholera was a disease characterized by poverty. As low standards of living were predominantly found in districts close to the Thames, the wealthier parts of London were seen by comparison as safe spaces. Many of what we would call epidemiological arguments today, were in the mid-nineteenth century based on spatial coordinates. It was not only the famed John Snow who tried to convince the community of his hypothesis with the visual support of maps (Fig. 2.4). While Snow’s opponent Edmund Cooper deployed maps to suggest a connection between foul water exhausts and cholera case density, the Reverend Henry Whitehead agreed with many of Snow’s assumptions about the implication of water, but ultimately rejected the idea of a contagious agent. Snow mobilized extensive case data and correlated it with the geographical position of water pumps. Moving beyond a Euclidian proximity and integrating the local features and conditions that structured the social life of inhabitants, Snow’s map became the most convincing instrument to argue for a cause for cholera other than poverty and its associated stench.

As Snow described in his own book On the Mode of Communication of Cholera, he used the map to reveal geographical patterns that might help to explore the specific cause of London’s 1854 epidemic. Snow called

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this now-famous map a “diagram of the topography of the outbreak.”

Cholera death data, collected from the city’s registers, were placed in tables and connected to as many case histories as Snow could find. Denoted by small squares, deaths are affixed to particular addresses, where they occurred to reveal a suggestive pattern of distribution in the city.

Snow, On the Mode of Communication of Cholera, 45.
city. “It will be observed,” Snow concluded “that the deaths either very much diminished, or ceased altogether, at every point where it becomes decidedly nearer to send to another pump than to the one in Broad Street.” Snow’s diagrammatic device relied on statistical data that specific contaminated water was to blame for the distribution of cholera and, maybe more importantly, could show that neither bad air nor any kind of effluvia were responsible for the epidemic. The map in this particular case and its framing as part of an ongoing heated controversy plotted a spatial structure of the disease not so much to disclose the disease’s locality but to deliver a spatial argument about cholera’s etiology.

McLeod argued recently that the spatial structure delivered in Snow’s cholera map uses place “as defined and mediated through human activity,” rather than just a geometrical set of coordinates in space. Snow interwove his conviction about contagious substances in water with statistical data from tables, case histories and particular observations about social behavior in the districts with the highest case rate. From the resulting tapestry he made his recommendation of removing the pump handle. This intervention stopped the epidemic’s spread. Maps such as Snow’s added a radical new level to the spatial visualization of diseases. Rather than assembling cases and revealing density patterns, the map is built around an ordinal structure, which puts data and objects into a specific relation on the place charted by the map to argue visually for a better understanding of the nature of the visualized disease.

In both cases – cholera in nineteenth-century London and AIDS in late-twentieth-century San Francisco – maps were used to relate additional data to case statistics to prove or disprove a hypothesis. Both the spatial diagram of Snow and the devices of Smallman-Raynor and colleagues allow for an indefinite number of assumptions, datasets, theories and critical inquiries to be applied to the spatio-temporal structure of an outbreak of a disease. Maps provide convincing visual arguments to overcome previously entrenched way of seeing, understanding and approaching the nature of an epidemic. As Monmonier observed, “[E]ven when authors of disease maps assert an exploratory or scientific intent, their maps and atlases serve to promote a particular viewpoint.” After Snow, cholera gradually ceased to be seen as purely a disease of

filth, stench and, by logical extension, poverty. AIDS, when mapped through models, was also no longer just a disease of homosexual men confined to the territory of certain stigmatized districts.

The Geographical Bloodhound

By 1990, focus in the United States had shifted to locate and visualize the pathways between assumed epicenters of the epidemic’s early days and the majority of American society. Maybe the proto-narrative, certainly one of the most repeated stories of how AIDS overcame the walls of urban societies, was given by Abraham Verghese, a writing clinician from Johnston City, Tennessee. He told a captivating and celebrated first-person account of the epidemic’s arrival in rural America at the end of its first decade. A key element of his experiences was the fact that most patients who he encountered in the small Johnston City Hospital, in which he worked, seemed to have acquired their infection elsewhere and who had after longer absence only recently returned to their home city. The persistent lack of accessible healthcare and political visibility about AIDS, Verghese assumed, meant some patients had to rely eventually on palliative care from family and friends back at home.78 Joining the dots between 81 cases in 1989 from around Johnston City, the constellation suggested that most patients probably became infected in one of the urban centers of the United States: New York, San Francisco, Los Angeles or Houston. Furthermore, the small sample of rural AIDS cases Verghese was confronted with seem to fit all too neatly into the cluster of risk groups defined by the CDC in the early 1980s. Verghese drew a map that demonstrated the fate of young, white homosexual men, who had left their hometown to flee homophobia, prejudice and stigmatization, only to return to their families as neither healthcare nor other charitable acknowledgment was provided in the urban centers from where AIDS seemed to stem.79

Certainly, this story showed Verghese’s sympathy, committed to following the fate of ostracized persons with AIDS who sought shelter and care, but his tale also served as a warning to a complacent public. As AIDS reached the countryside, many new areas, which were considered to be in safe distance, were at heightened risk. Verghese articulated his worry about this newly emerging pattern of the migrating persons with


79 Verghese, *My Own Country.*
AIDS, and he and his co-authors concluded that “[u]nfortunately, persons outside the AIDS epicenters less often adopt safer sex and needle practices.”80 Here again, we can see a motive introduced in the chapter on photography: Imagining the person with AIDS as “still sexual” drew attention to new places of distribution and new patterns of emergence in the previously safe hinterland.

Eventually AIDS came to be perceived as a thread to everyone. In the late 1980s AIDS was gradually taking over – or so it seemed – the whole country. This alarming impression led to a high priority of new map making: Models of the progression of AIDS county by county had been in production since the mid-1980s. Clustered visualizations of CDC datasets were presented by Dutt and colleagues, while others exploited the spatial data from the US Department of Defense’s screening program for military applicants to argue for spillovers into previous low-prevalence regions.81 All spatial arguments shared a recurring way of visualizing the progression of AIDS beyond its assumed locales:Typically a map of the United States, plotted in a consecutive series for comparison, shows the epidemic’s ratio in shaded patterns, county by county and state by state.82 The geographer Peter Gould wrote that “Anyone, scanning that sequence of maps...looking at AIDS spreading in Pennsylvania like a photographic plate developing in the darkroom, can see intuitively an enormous amount of spatial-temporal regularity.”83 One such map sequence illustrates the cover of Gould’s book contribution to the geography of AIDS, which – reiterating the visual impression of an increasingly deadly density – is entitled “The Slow Plague.”84

The atlas series published by Mildvan established an even stronger visualization of the “creeping” transition of the epidemic. In the first edition in 1995, the chapter “Epidemiology, Natural History, and Prevention,” edited by Sten H. Vermund and D. Peter Drotman, combined a number of tables, bar graphs and statistical plots illustrated with a map

82 See, e.g., the map sequences in Kaslow and Francis, The Epidemiology of AIDS, Brookmeyer and Gail, AIDS Epidemiology, Mildvan, AIDS and on the cover of Gould, The Slow Plague. Until today the style of map is used to visualize the progression of AIDS or respective, HIV, in the United States on CDC websites and elsewhere.
84 Gould, The Slow Plague.
sequence on the distribution of AIDS in the United States (Fig. 2.5). Each white dot on the maps represented 20 cases of AIDS, their increasing density demonstrating the magnitude of the epidemic. Similar to the maps used by Gould, the series invoked a developing picture of an epidemic, sweeping from the urban centers to the rest of the country between 1983 and 1993.

Already by 1990, Gould was not satisfied with the picture of AIDS proposed in these sequenced maps. These visualizations, he argued, allowed for complacency regarding the spatial pattern he had observed and that was not comparable to a slow homogenous spreading. He developed a competing geographical model that would capture the actual pathways and complicated spatial-temporal distribution of AIDS. He developed his model with the ambition of predicting the next outbreak because he was convinced sequential series of maps could only deliver a

Fig. 2.5 A series of dot maps in the AIDS atlas by Donna Mildvan from 1995. The serial arrangement suggests a “flooding” of the United States as the epidemic spills out of the urban epicenters in which AIDS was assumed to be contained.


85 Mildvan, AIDS, 1:1.4.
vague picture of threat and in fact could shore up a sense of false security. To make his students at the University of Pennsylvania aware of the real risks about the arrival of the epidemic, he crafted what Koch has called a geographical “bloodhound.” The formula laid out a model for rethinking the distribution of AIDS in relation to relative population density. The argument went that AIDS could be differentiated from a contagious disease like plague, for which diffusion follows a gradual distribution over geographical space, reaching village after village as if it were a map of an extending flood. This predominant but misleading image for plague prompted Gould to design the “next map” to give a better, informed account of how the particular disease of AIDS made its way across the United States. His intent was emphatically to scare teenagers and to wake up health practitioners who would not acknowledge their own proximity to the epidemic.

AIDS spread from city to city by slow diffusion to surrounding countryside. To communicate this powerfully in a map, Gould dissolved the geographical distance of the cities affected by AIDS. In doing so he crafted a geographic projection, in which the disease is not plotted in relation to the space in which it moves, but the space is rearranged along the characteristic movements of the epidemic. Taking the example of the US state of Ohio, Gould plotted an “AIDS space” (Fig. 2.6) by moving the urban centers of the state out of their geographic position and grouping them together according to the probability of the preparation for the next infection, the next AIDS event. In this innovative map, Gould had made a mathematical model that correlated the hierarchical spatial transmission of AIDS along the density of population in urban centers. He intended the map to visualize the “step-jump” situation that was to set the diffusion of AIDS apart from the common picture of epidemics as extending flood. Both an instrument for open ended interrogation, and a symptom of the narrowly focused surveillance of AIDS up until that point, Gould’s AIDS space became a timely reminder that social and cultural framings of the epidemic had misled both the research community as well as the general public. Thinking AIDS through its spatial pattern was an invitation to unsee the epidemic’s limited and epidemiologically dangerous entanglement with homosexual men, heroin users, hemophiliacs and Haitians.

There are many historical cases of how shifting ideas about where a disease is and what it means have enabled a reimagining of what the

89 Ibid., 89.
disease was thought to signify. In the West, tuberculosis was reframed from a disease believed to be intimately attached to poverty and filth, to being seen as a disease more closely associated with migration and social groups outside the scope of medical surveillance. Bubonic plague was known as “yellow peril” when it arrived at the American West Coast in 1899, but health officers and boards were quick to undo the stereotypes as they invoked a sense of false security. But a look at the history of other sexually transmitted diseases brings up an example that proved to be a valuable model through which to understand the AIDS epidemic: syphilis.

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Mapping Endemic Contours

The classic venereal disease also caught the attention of late-nineteenth-century geographers who were trying to align a specific, albeit controversial historical place of origin for syphilis with the endemic prevalence of the disease. The eminent medical geographer August Hirsch published his handbook for historical-geographical pathology in the second half of the nineteenth century that sought to reinvent historical pathology by combining it with spatial information. Every disease, so he argued, has a characteristic history stemming from a particular origin and shows a distinctive pattern of distribution. For Hirsch, describing, mapping and cataloging the historical variance of spatio-temporal data was not intended to weaken the contemporary emerging claims of microbiology and cell pathology, but to accompany their endeavor in forging and unifying disease entities through time and space.93

Syphilis became the unofficial poster child of this enterprise toward the end of the nineteenth century. Disagreements about its origin spanned from the idea of an autochthon emergence from sideric influences, to zoonotic transgressions and to the popular idea of an American origin,94 while Hirsch insisted on the enduring presence of syphilis throughout history. He detailed its overarching presence and indifference to geographic districts as well as mentions a “specific infective substance.”95 Moving away from historic accounts of syphilis as the paradigmatic disease of specific groups and places (“morbus Neapolitans, gallicus, franzos, americanus”), geographers at the turn of the twentieth century tried to establish a new account of the general endemic situation of syphilis. Neither the question of origin nor its classification as a disease of a particular kind of population made sense any longer. Instead, some historians of the disease arrived at the conviction that the history of syphilis resembled the history of mankind. In 1901 Iwan Bloch came to the conclusion that syphilis must be understood as a symptom of the
development of human civilization and the expansion of human culture. The history of civilization has also been a history of the “syphilization” of the West. Syphilis was seen as a strange object in which the entanglement of cultural history and medical history seems not only accidental, but also a characteristic feature of a modern understanding of this venereal disease that focused now on practices of transmission.

When syphilis lost in the late nineteenth century its image as a foreign illness and became instead a disease of sexual transmission, sexual deviant and sex work, so too did it lose its characteristic geographical patterns, through which it had been perceived for centuries. As the cultural and medical history of syphilis became blended together, syphilis developed yet again into a new disease. In this new figuration, syphilis became essentially endemic, and its vectors were thought too extensive to map through districts or to isolate occurrences that would not eventually resemble the shape of general population density. Rarely a subject in maps of modern medical geography, syphilis became a disease whose pattern would be understood only in close relation to the everyday structures of societies. A recent example is found in Cliff’s atlas of epidemic diseases, which emphasizes that syphilis only appears to the eyes of the geographer when an extremely high resolution is applied. Only then, Cliff argues, could the fine-grained prevalence of syphilis in certain lower income populations in the United States be observed at all.

Fears spiked at the end of the 1980s that AIDS distribution might follow the example of syphilis and would eventually become uncharted territory as a widespread endemic crisis. But these fears never played out. AIDS did in fact maintain a quite recognizable social and racial structure throughout the United States until today and never fully dispersed into the general public. Whereas Mildvan with many others were inclined to foreground the map sequence of AIDS slowly covering the landscape of the US territory, she also invested in maps demonstrating the newly emerging patterns of social AIDS distribution in the early 1990s. The

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97 Ibid., 6.
overall impression of a “slow plague” in Mildvan’s atlas was contextualized on subsequent pages with extensive information about what in 1995 was yet another newly emerging social structure of the epidemic. Previously overlooked, the “minority composition of AIDS cases” was now incorporated into a geographic picture that still characterizes AIDS distribution in the United States today.

One example is given in this map (Fig. 2.7) that appeared in tweaked versions throughout Mildvan’s atlas series, which detailed the HIV seroprevalence among “childbearing women.” Like others of its kind, it demonstrated the sweeping distribution of heterosexual infections far beyond the original urban centers of the epidemic, with particular emphasis of a rate above 4/1000 in 1991 in Florida and Puerto Rico. Charting AIDS along the disadvantaged groups of society through several graphs suggested a disproportionate number of African American

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102 Mildvan, AIDS, 1:1.5 103 Ibid.
and Latin cases, representing 45 percent of new infection rates. Both groups exceeded their statistical relativity to the general public by 200 percent.\(^{104}\) Furthermore, the atlas editors invested considerable attention to positioning pregnant women in the epidemic. An increasing number of new infections among women – from 8 percent in 1985 to 14 percent in 1992 – correlated, as the maps demonstrated, with the increasing number of infected pregnant women. This suggested that the total number of new infections had left the niche of drug use behind and were now increasingly occurring through heterosexual transmission. A developing dot map as well as the ratio-visualizations of minority composition worked by visualizing unseen and largely invisible domains of the epidemic in its second decade. Especially African American clusters of cases had long remained invisible in the spatial narratives of the epidemic, as they were either counted among drug user incidence or simply overlooked. A lack of surveillance, a lack in good classification, led to a persistent gap in public health campaigns, which might in turn have contributed to a false sense of immunity among African Americans, as described by Cathy Cohen.\(^{105}\) The map’s purpose in Mildvan’s atlas lies too in the forceful demonstration of a changing picture in which previous perceptions and strategies of containment, like the urban center, the 4Hs and the perception of an immunity of the national body are systematically made unseen.

However, by the end of 1991 the United States still had more than half of the world’s reported cases of AIDS.\(^{106}\) At the beginning of the epidemic’s second decade, geographers like Gould engaged largely in a reconstruction of how this catastrophe had happened and tackled the conditions under which it went unseen for too long. Gould attributed the new “explosive nature of the beast”\(^{107}\) to a “stinging indictment of arrogant professional blindness and unconscionable neglect,” which had characterized both political and medical receptions of the epidemic in its first years.\(^{108}\)

The geographers Gary Shannon and Gerald Pyle insisted in their critical contribution from 1989 on the diffusion pattern of AIDS that the perception of homosexual men as a single risk group and isolated geographic arena for the disease had always been an epidemiological

\(^{104}\) Ibid.


\(^{107}\) Gould, \textit{The Slow Plague}, 114.  \(^{108}\) Ibid., 122.
oversight. It did not even resemble the reality of AIDS when it was first identified.\textsuperscript{109} Both authors conceded that the social structure and distribution of the epidemic in the United States have followed largely different patterns than originally suspected, to finally point to the other, largely invisible aspect of the epidemic’s geography: its international impact. To integrate a global vision, substantial geographical differences in the diffusion of infected populations and of diseases and infections associated with the immune deficiency became starkly clear. Based largely on research carried out by Jonathan Mann at the WHO, the geographers conclude their spatial argument that the “importance of spatially variable behavior, social and environmental factors” suggested the crucial significance of socioecological models of disease in the future perception of what was already a globalized picture of AIDS.\textsuperscript{110}

In the United States, not only did the epidemic leave its assumed urban foci behind, its socioecological shape shifted slowly into a disease of poverty, fueled by lack of access to healthcare. What was originally perceived as an isolated incident, politically neglected by the Reagan administration, transformed substantially, as AIDS had become an “American Epidemic.” Maps facilitated the departure from what could be called a “single cause, single location” model, in which the threat of AIDS was contained through the risk group in which it first appeared.\textsuperscript{111} Instead, maps showed AIDS to affect different communities in different places in different ways, an insight gained through and reliant on intricate visualizations of space to enable perceptions of the disease in its unselective and almost arbitrary nature. Maps were rather practical instruments of forging a new medical and geographical understanding, which served as a cornerstone in epidemiological perception, signaling both a practice of surveillance as well as a clear intention to understand AIDS through its spatial coordinates rather than its individual bodies and their symptoms.

\textbf{Globalizing the Pandemic}

The map of the AIDS epidemic printed in the first AIDS atlas of 1986, loosely based on the Gallo model of original distribution, captured


\textsuperscript{111} Bastos, \textit{Global Responses to AIDS}, 56.
probably the earliest way in which a global history of AIDS was understood. As discussed previously, the map offered an argument on plausible explanations of how AIDS arrived to the American research community and suggested an explanatory framework for AIDS’s arrival in the United States. In other words, maps of the original global distribution masked ideas of an American origin of AIDS and helped to make the entanglement of AIDS and the United States unseen.

This leaves us with the dilemma of two kinds of origin of the epidemic: on the one hand, a narrative origin in the United States in 1981 and, on the other hand, the narrative of a natural origin, vaguely tied to the beginning of the twentieth century in Central Africa. Do we attribute a notion of origin to the longer natural history, which has been reconstructed ever since comparable cases in Zaire appeared? Or is the origin of AIDS to be found in the place where it was first recognized, named and framed into the epidemic that it then became? The epidemic’s “cognitive birth” in the United States marked the analysis of the epidemic, as Christiana Bastos argued, whereas “a search for its origins helped make it visible everywhere.” While it is important to acknowledge that AIDS affected hundreds of thousands of people before it was originally conceived of as AIDS, these cases will inevitably remain part of a history of an epidemic that was not yet AIDS. Its official birth in 1981 United States delivered the conditional framework through which a cultural, a social, a medical and even the natural history of the epidemic was perceived. From here, the global prehistory of AIDS was crafted, and it is from this same point of origin that the globalization of the epidemic was thought through in the late 1980s. While it is tempting to assign phylogenetic trees identified in traces of HIV in historic blood samples, a trumping truth in determining an original, authentic historical and global picture of the epidemic, we will not ever arrive at a purified natural history of the disease in which a geographic and historic origin reveals itself as sufficient to render the social and cultural history of AIDS and its American origin, unseen.

The history of the globalization of AIDS thus departs from a history that began in 1981 United States. “Without a doubt,” Cindy Patton writes in her account of the globalization of AIDS, “the United States had a crucial role in setting global trends in thinking about and handling AIDS, but the international and transnational formulations of the epidemic have also shaped the way the United States can represent its place to itself.” This transition, Patton argues, was marked by contradicting

112 Ibid., 57. 113 Patton, Globalizing AIDS, 26.
thought styles as different geographic approaches and different medical understandings collided. But beyond this complicated setting, Patton also notes the challenge of making an epidemic global that had originally been American. As a constant exchange of expertise between scales of local places, national politics and international organizations became the modus operandi, the crucial question was to what end practices of containment from the United States could ever be applied to the newly emerging foci of crisis in Africa.\textsuperscript{114}

For Bastos, the globalization of AIDS was not only marked by different approaches to dealing with the epidemic but happened in a period of AIDS history characterized by the persistent absence of cure or any successful medical interventions. The crucial years between 1986 and 1995 saw the advent of a global pandemic as well as the incapacity of biomedicine to deliver convincing and unified means of intervention. The science of AIDS, already a rapidly advancing specialty, appeared to be in a state of emergency, with “each statement turning out to be as fragile as the one it replaced.”\textsuperscript{115}

While this period began with a broad agreement on HIV as causal agent, it also began with the first international conference on AIDS.\textsuperscript{116} This meeting left an impression of the epidemic’s overwhelming global dimensions. The WHO AIDS program – one of the later outcomes of the conference – Bastos argues, emphasized prevention, education and social issues such as political change, empowerment of minorities, justice in gender relations, sex work, drug politics and controlling blood products to effectively prioritize social dimensions over medical solutions in the global response to AIDS: “The absence of a unified and strong response on the part of science had as a counterpart the development of a multifocal panoply of responses.”\textsuperscript{117} As the AIDS crisis became global, the absence of unified medical strategies was utilized to mobilize a response deeply rooted in the program of social medicine.\textsuperscript{118}

The WHO initially considered AIDS to be largely an American disease and problem and only launched a new, global strategy once the minister of health of Uganda had reported on the drastic AIDS crisis developing in Central Africa at the World Health Assembly in 1986. Jonathan Mann was approached a couple of months later to become the director of the

new Global Program on AIDS.\textsuperscript{119} Equipped with an impressive budget, Mann set out to design a global health policy that attempted to meet the epidemic on as many diverse grounds as possible, while keeping human rights its guiding political focus. As Fee quotes from WHO meeting records, Mann was committed to define AIDS as three discrete epidemics. Each of the three had distinct features requiring a specific resolution. AIDS was thus understood to be (1) an infection, (2) an epidemic of devastating illness and (3) a social, cultural and political epidemic that required a depoliticized approach and a strict focus on the distinct but limited transmission routes of HIV in affected countries.\textsuperscript{120}

Mann’s mission was to change a resilient paradigm of public health policy by fighting for a global acknowledgment of the unique appearance of AIDS and its many national crises. A concern for individual rights, stigmatization and strategies to overcome the image of AIDS as a disease of homosexual transmission led the WHO to argue strictly against coercive measures. The notion of forcing people into regimes of assumed healthy behaviors was unacceptable. As Allan Brandt notes 2013:

> Most notably, the AIDS epidemic has provided the foundation for a revolution that upended traditional approaches to “international health,” replacing them with innovative global approaches to disease. Indeed, the HIV epidemic and the responses it generated have been crucial forces in “inventing” the new “global health.”\textsuperscript{121}

Accordingly, the new policy was driven by calls for transparency, for inclusion of civil society groups and activism on both national and international scales and to develop a policy of nondiscrimination within the WHO. It was thanks to their strong position that the intentions of some nations to restrict traveling were halted.\textsuperscript{122} Mann’s leadership of the AIDS program at the WHO established a lasting public health paradigm of nondiscrimination. The protection of individual rights was considered essential “as the stigma of the disease threatened to drive infected persons to conceal their status.”\textsuperscript{123}

Mann’s pragmatic approach needed new instruments for mapping, surveillance and containment on the ground. WHO’s malaria and smallpox campaigns of the 1950s and 1960s were characterized by large-scale mappings of communities, villages, social structures and cultural

\textsuperscript{119} Fee and Parry, “Jonathan Mann, HIV/AIDS, and Human Rights,” 59.
\textsuperscript{120} Ibid., 61. \textsuperscript{121} Brandt, “How AIDS Invented Global Health,” 2149.
\textsuperscript{123} Fee and Parry, “Jonathan Mann, HIV/AIDS, and Human Rights,” 62.
boundaries to vaccination programs.\textsuperscript{124} But a fine-grained geographical visualization of HIV-positive populations to determine risk and to enable focused interventions violated the principles of protecting individual rights and nondiscrimination of HIV positive persons. Geographic reconnaissance, with the systematic mapping of social communities in their spatial and temporal distribution among specified risk areas was not an option. The anthropologist Robert Thornton has shown that in place of these old techniques a new kind of mapping was introduced to solve the unprecedented epidemiological puzzles of AIDS.\textsuperscript{125}

A strategy emerged that adopted some of the methods developed by Gould and others, in which the mapping of an AIDS space focused on the visualization of network structures disconnected from spatial coordinates. These mappings were concerned with the social network structures in which HIV was sexually transmitted. But what had been originally a strategy of charting the sexual life of a specific population in 1984 San Francisco, who were perceived of sharing a common lifestyle and specific districts, the same practice now was applied to fragments of the general population. In San Francisco, Auerbach and his colleagues had begun in 1984 to map the homosexual networks around their patients to arrive at visual clusters of infection.\textsuperscript{126} But while old patterns were never fully disconnected from attempts to identify index patients, or indeed to find “patient zero,” new methods of visualizing sexual networks emphasized the complexity of a relation between HIV transmission and sexual behavior of larger diverse groups. Promiscuity or sexual identity was not mapped, but rather the onset of AIDS in Africa raised questions about which combinations of sexual behavior, social status and poverty were contributing to patterns of high prevalence.\textsuperscript{127}

Local Pattern

One of the central puzzles in 1990 was that at precisely the time when AIDS rates significantly increased in South Africa they seemed to decline in Uganda. Advocates of conservative approaches to the epidemic swiftly

\textsuperscript{124} World Health Organization, “Geographical Reconnaissance for Malaria Eradication Programmes.”

\textsuperscript{125} Robert Thornton, \textit{Unimagined Community: Sex, Networks, and AIDS in Uganda and South Africa} (Berkeley: University of California Press, 2008).

\textsuperscript{126} D. M. Auerbach et al., “Cluster of Cases of the Acquired Immune Deficiency Syndrome: Patients Linked by Sexual Contact,” \textit{The American Journal of Medicine} 76, no. 3 (March 1984), 487–92.

\textsuperscript{127} On the transfer of epidemiological and clinical practices from San Francisco to Uganda see also Crane, \textit{Scrambling for Africa}. 
announced the falling numbers a success for the re-established merit of a
moral foundation through the Christian churches, which had supposedly
increased commitment to sexual abstinence. Thornton argued instead
that a shift in sexual behavior had indeed changed the statistical picture
of the epidemic, but instead of general sexual restraint he called the
implementation of a different attitude to be the key factor. “Zero
Grazing” required communities to restrict their sexual endeavors within
local circles to alter the configuration of a “sexual network,” reflecting a
specific kind of social structure. Thornton argued that such networks had
only become visible through the onset of AIDS, as the “sexual network,
although largely invisible, is unlike the invisible networks that link people
in other epidemics.”128 Making these networks visible, Thornton argued,
would again emphasize that the precondition for changing sexual behav-
ior was first to establish a localized understanding of how sexual encoun-
ters are organized and how communities that had been unimagined
become visible.

These approaches were accordingly used in many different settings.
Elizabeth Pisani, author of the infamous study on the Wisdom of Whores
recalls a particular scene from her work in UNAIDS, when she struggled
against the official Chinese position that women in China would per se
not engage in sex before marriage. She drew a sex map of a classic
Chinese drama, the “sprawling sexual soap opera” “Golden Lotus,”
and used the generic WHO color coding for high- and low-risk partner-
ships to successfully contradict the official position that nonmarital
sexual relations did not exist in China.129

Many other sexual networks were drawn in the following years to
investigate, for example, the social position of sex workers and clients
of sex workers; a particularly thorough study deserves more attention.130
Stephane Helleringer and Hans-Peter Kohler mapped the sexual net-
work of the Likoma Island on Lake Malawi. Moving away from the usual
pattern that centered on high-risk groups, the authors aimed to identify
patterns within a general population of young adults that illuminated the
transmission routes of HIV. The resulting model shows a sexual network

128 Thornton, Unimagined Community, 24.
129 Elizabeth Pisani, The Wisdom of Whores: Bureaucrats, Brothels and the Business of AIDS
130 C. N. Morris and A. G. Ferguson, “Estimation of the Sexual Transmission of HIV in
Kenya and Uganda on the Trans-Africa Highway: The Continuing Role for Prevention
in High Risk Groups,” Sexually Transmitted Infections 82, no. 5 (October 2006), 368–71,
doi:10.1136/sti.2006.020933; M. E. Gomes do Espirito Santo and G. D. Etheredge,
“Male Clients of Brothel Prostitutes as a Bridge for HIV Infection between High Risk
and Low Risk Groups of Women in Senegal,” Sexually Transmitted Infections 81, no. 4
composed of three patterns, each displaying a high prevalence of cycle structures. The authors conclude that a large and robust network connected a substantial portion of the island. Half of all sexually active young adults on the island were connected through one of the spatial components visualized on the map (Fig. 2.8). But HIV prevalence was highest on the margins of these larger networks, and incidence rates were higher in the sparse regions of the map, indicating an ecology of unidentified factors beyond the grasp of the mapped sexual network.131

These maps were technical instruments, useful to a handful of experts who were able to integrate the visualizations into arguments on possible points of intervention into the developing epidemic in Sub-Saharan Africa. To audiences beyond these cycles, the maps stand as representations of studies that had been developed to chart out the epidemic drivers in highly diverse local settings, contributing once more to a fractured, scattered and increasingly disconnected vision of AIDS around the world.

The AIDS atlas did not contain any of these systematic local mappings, as the maps’ specificities did not comply with the general scope of visualizing AIDS to a medical audience. The globalizing epidemic was instead integrated into the atlas through pictures of its shifting epicenter. A focus on the changing global picture rather than particular patterns addressed the atlas’s predominantly Western audience.

In Mildvans’s international AIDS atlas, we find two maps with a comparably neutral vision of AIDS in the world (Fig. 2.9). This map from the 2008 edition totals 38.6 million people living with HIV, and the shading compares the ratio, the relative density of HIV prevalence from country to country. Along the national boarders, maps like this one reflect, on the one hand, the structure of national reporting to the WHO or UNAIDS and, on the other hand, give a quick impression of the shifted epicenter of AIDS today.

But how to translate these localized and highly specialized encounters into the global public arena in which AIDS was perceived from 1990 onward? And how to integrate the diverse conditions of the many local epidemics into the totalizing vision of the atlas? The diversity of the spread of AIDS as a locally different, social entity required yet another form of visualization that would both guarantee the vision of AIDS as a global entity and would allow for an immediate impression of context-dependent diversity. As the WHO assumed leadership of crafting an

Fig. 2.8 Pattern of sexual networks in Malawi. The representations of possible transmission routes have been made visible to identify the conditions of HIV distribution and viable points of intervention and regulation. The maps visualize a complex local condition that constitute a unique ecological niche and therefore is evidently not universally applicable.

international response characterized by diverse social responses, rather than unified scientific principles, the multitude of spaces and places of AIDS were given greater emphasis.

A first crucial step was to divide the world into districts: each of which was perceived to contain shared characteristics. Such efforts defined AIDS as a highly localized disease. The Global AIDS Policies Coalition, founded in 1991 as a not-for-profit partnership led by Jonathan Mann, charted out 10 different regions as the “New Global Geography of AIDS.”132 The data was divided by indices of the estimated local start of the epidemic, the year of the first diagnosis, the year organized data became available, major modes of transmission, ratio of urban to rural cases, gender-ratio of infection and responses of the national leaders. Mann’s 10 regions were made up as follows: North America, Western Europe, Oceania, Latin America, Sub-Saharan Africa, the Caribbean,

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132 Bastos, Global Responses to AIDS, 52.
Eastern Europe, the South and East Mediterranean, North and East Asia, and Southeast Asia.\textsuperscript{133} A more feasible and lasting division of the world was a three-pattern model, separating the mainly homosexual distribution of the United States and Europe (Pattern I) from mainly heterosexual transmission in Africa (Pattern II) from the Asian epidemic, which was mostly characterized by its late onset (Pattern III).\textsuperscript{134}

Either way, the result was a devastating picture. In 1991 in almost all regions prognoses were pessimistic. Global considerations were largely structured by the impression that strategies, shown to be effective in the early appearances of AIDS, could not be translated into a global context. Where activism, community organizing and emotive mobilizations from below made a lasting impact on public health policy and public perception in some regions – mainly the United States and Europe – global challenges appearing with increasing diversity posed very different social and economic problems. The “remarkable successes in some communities contrast dramatically with a sense of threatening collective global failure,” so the editors introduced the 1992 report “AIDS in the World.”\textsuperscript{135} The picture of global diversity became a representation of the developing drastic injustice caused by resource distribution and general poverty.

The most familiar visualization of the new global pattern of AIDS is this shaded global map, similar to the one printed in Mildvan’s atlas series. Another example can be found already in the opening section of the before-mentioned WHO publication on the global image of the epidemic (Fig. 2.10). Visualizing the percentage of blood screened for HIV in 1992 as it was reported by nations to the WHO, the map served one crucial function: It visualized areas of relative safety as it showed how governments had reacted to the risk of transmission through blood supplies. But the maps also indicated once again that by 1994 AIDS had become a global phenomenon; a view that the WHO pamphlet photographically reiterated in its 100 pages, which divided areas of the world by their relative intensity of infection rates, case numbers or – mostly negative – outlooks.\textsuperscript{136}

Printed in many publications these maps became ubiquitous and were placed alongside statistics, national and transnational reports on the progress of the virus.\textsuperscript{137} Unadorned by vector markings, arrows or any

\begin{itemize}
\item[\textsuperscript{133}] Mann et al., \textit{AIDS in the World}, 19.
\item[\textsuperscript{134}] Patton, \textit{Globalizing AIDS}, xii.
\item[\textsuperscript{135}] Mann et al., \textit{AIDS in the World}, 1.
\item[\textsuperscript{136}] World Health Organization, \textit{AIDS}, 10.
\item[\textsuperscript{137}] These maps are often used to visualize the annual datasets provided by the WHO, see, e.g., the annual reports from UNAIDS “AIDS by the Numbers, 2016,” www.unaids.org/sites/default/files/media_asset/AIDS-by-the-numbers-2016_en.pdf.
\end{itemize}
indication of trajectories, these maps did not engage with the question of origin, nor do they make arguments about causal chains of international transmission. Instead, the shading of the ratio of the disease burden projects a global picture in which the epidemic is already assumed to have arrived in every place of significance, separable only through incidence or prevalence rate. Visualizing AIDS through these maps disregarded the epidemiological question of where from as much as it devalues the purpose of asking what kind of disease. These maps interrogate instead the question of how. Framing the conditions under which the same disease occurs in different intensities, with different impact, the shaded global map creates a vision of global AIDS, in which the different areas of the world are brought into comparison to each other. Through the lens of the everywhere-present pandemic, these maps point to separable geographical entities that invite us to engage further
with the specific conditions that distinguish districts with a higher burden from those with moderate rates.

**Districts of Disease**

The single most important mapping instrument of colonial and, later, tropical medicine may have been maps of disease districts. The visualization was required to better understand diseases that seemed oblivious to social or racial difference yet affected only inhabitants of certain geographical places. These maps served as an essential technology in defining and verifying the specificity of yellow fever, leishmaniosis, sleeping sickness and, later, malaria or tuberculosis.\(^{138}\) An instrument of surveillance, social control and hygienic principle, the map of disease districts reintroduced spatial coordinates of difference, crafting geographical entities that could easily be translated back onto social and racial relations if these failed to maintain their assumed immunity and community.

The German general practitioner Friedrich Schnurrer produced perhaps the first global map of a disease in 1827. Although deeply influenced by Humboldt’s assumption of discrete natural disease identities, Schnurrer argued decisively against the contagionists and mapped cholera to demonstrate its innate relationship to regions, areas and landscapes. In his 1831 publication on the nature, distribution and treatment of cholera, he conceded that the disease might mimic the shape of a contagious disease but continued to list exhaustive examples of how cholera outbreaks remained entangled with specific qualities of districts to prove its noncontagiousness.\(^{139}\) By considering the implication of water sources and humidity, he proposed that cholera was driven by an emanation of sorts, from which the disease is received by those directly affected.

While this makes for an unusual explanation for the cholera’s particular relation to water, it provides a historical account of how certain diseases were perceived as illnesses of location. In this case, and against the background of his time, locales were a central aspect of how a disease worked for Schnurrer. Such early procedures for creating index locations


of diseases did not need vectors or other references to direction, nor were they dependent on notions of origin and distribution. Arriving at very different conclusions, Snow’s map of a limited geographic cholera presence just 20 years later proved contaminated water was responsible for the local peculiarities of the disease.

A common object of pandemic mapping and modeling has been the return of bubonic plague in the late nineteenth century. Confronted with outbreaks largely beyond the European scope, plague quickly turned into a paradigm of international hygienic intervention, quarantine regulation and pandemic mapping. Maybe the first pandemic that appeared within the framework of a modern medical geography, plague captivated map makers as much as wider audiences, witnessing the return of a centuries-old pest through its mapped trajectories. With the third plague pandemic, as it was officially called several decades later, originating in Hong Kong, spreading to India and from there to almost every port city in the world, the plague pandemic crafted a basic prototype for the modern global disease model. Plague’s repetitive structure, appearing with a similar pattern in a variety of far-flung places, catalyzed geographical as well as epidemiological interest. Most significant outbreaks, from the early case of the Russian village Vetlianka, the onset of the epidemic in Hong Kong and continuing to the outbreaks of Porto or San Francisco attracted international teams going to sites of plague to better understand why the epidemic had appeared in these of all places, and why it had spared so many others. The plague’s bacteriological agent had been identified by Yersin – with or against Kitasato, a debate we cannot linger on here – in 1894, but the specific vector of how the bacteria entered the human body remained as ambiguous as the implications of climate, poverty, dirt and international trade on the disease burden. As Barrett has pointed out, maps and geographical reasoning served in the early years of the epidemic as technologies of epidemic control, which sought to establish a scientific discourse where the laboratory had failed to provide sufficient explanations.

Plague researchers such as Albert Calmette from the Paris Institute Pasteur, mobilized the scientific capacity that medical geography had established in the nineteenth century to revise scattered outbreaks of plague into a true pandemic. Indicating the similarity of global

141 Barrett, Disease and Geography: The History of an Idea.
outbreaks maps enabled a perception of plague as a global threat, traced as it was happening. Cartographic instruments could be used to tackle the transnational issues of quarantine and surveillance. The US Public Health Service produced a series of quarantine maps, visualizing the worrying plague belt of global port cities. Other global maps served to test and evaluate hypotheses on the role of climate and to demonstrate patterns of distribution over time.

Half a century later, between 1952 and 1961, Ernst Rodenwaldt, a medical geographer from Heidelberg, published the “Welt-Seuchen-Atlas.” A folio atlas in three volumes, this project aimed to collect and distribute a complete archive of the medical geography of all known epidemics of the past and present. After some of the maps and their accompanying apparatuses had been published through Zeiss, a medical geographer working for the German Wehrmacht, the shelved project was picked up again in the 1950s as a collaboration between German geographers and the US Navy. The remarkable atlas, unique in scope, format and technique as well as historical detail, contained an extensive section on bubonic plague and specifically the third plague pandemic. The series of maps visualized the development of plague through the decades, emphasizing the distinctive shape of plague in the twentieth century.

Hans-Juergen Raettig produced this impressive map while he worked at the Robert-Koch-Institute, charged with surveillance and reportage on the global movements of the epidemic (Fig. 2.11). Raettig attributed the less lethal character of this recent pandemic from the medieval Black Death to a new awareness of the plague formula, to popular knowledge about the combination of human plague with the trajectory of bacteria through rats and fleas. Plague’s animal vector came to be accepted widely by 1912, and Raettig’s map draws an intriguing picture of the historical trajectory of the infectious disease.

Originating from the Asiatic realm, specifically, the central Asian elevated plateaus reaching into the Hindukush, presented an expansive enzootic area where plague was assumed to have been endemic. Unresolved conditions triggered the bacteria to reach Hong Kong in a critical mass, and the subsequent outbreak there spanned to a series of pathways reaching the shores of China, Japan, India, Australia and the South Asian Islands. Through Bombay, Raettig argues, plague came to the African

143 Koch, Cartographies of Disease: Maps, Mapping, and Medicine, 220 ff.
continent, into the Middle East and eventually to Europe, most prominently to Porto in Portugal.\textsuperscript{145} The map demonstrates the global distribution of the disease, indicates endemic zones and gives a detailed impression of the vectors. An effect is the division of the world in districts of endemic presence and those of epidemic arrival.


\textsuperscript{145} Ibid.

Fig. 2.11 A map of the global distribution of the third plague pandemic, published in the Rodenwaldt’s \textit{Seuchen Atlas} in 1952. The map demonstrates the global distribution of the disease, indicates endemic zones and gives a detailed impression of the vectors. An effect is the division of the world in districts of endemic presence and those of epidemic arrival.
opportunistically. As Gallo mapped the history of AIDS at the end of the twentieth century, his map too suggested an area of historic origin, from which the pandemic picture developed into global extension, rendering the American epidemic an opportunistic epidemic event.

The disease district in which plague was confined as a naturalized entity bound to an endemic cycle was transgressed. Both China and India are placed as the spatial and timely origins of the global vision of plague, both their implication in the large endemic district of plague as well as their mapping as points of departure divides the world into places implicated in plague all along and in new places of infection characterizing the emergency of pandemic. Within the atlas the question of how and why plague was able to stay in certain places, while others remained untouched is answered with a second diagram, adding the climatic conditions of the disease into the global picture. The atlas author’s aim was to combine an Asiatic origin with an ecological disposition of the disease to certain climatic conditions. With combined application of theories, data and trajectories, the map unfolds its powerful argument, incorporating the original disease district with pathways and ecological conditions of a disease.

When AIDS became global, the contours of its original districts lost any great importance and disappeared from maps. For a while, neither the original space of the urban homosexual male, nor the later foci in the Sub-Saharan Africa worked as places that were identified as being substantially involved in fostering the disease. Between 1986 and 1995, when the disease was established as a viral infection, but medical research was unable to provide a biomedical solution or treatment, the immune deficiency was predicted to reach every possible corner of the world and was painted as a global disease without a residing “home,” mirroring the absence of a culpability narrative in the interim years. While maps of AIDS – similar to the distribution model proposed by Raettig for plague – showed AIDS becoming increasingly global, they also worked to pinpoint an origin of the disease beyond the shores of the United States.

Projecting models such as the one put forward by Gallo, in which the epidemic originated decisively outside of the United States but was probably rampant long before it became visible to the eyes of Western doctors, framed the global model with a crucial twist. Whereas the globalization of the syndrome was an established assumption, its historical geography was crafted to shift the epicenters of the early 1980s.

epidemic into the periphery. With Gallo’s model, a vision was established that remained resilient against future changes in the details of trajectories and pathways. The historical and the global shape of the epidemic aligned in these global projections, so that one disease district – the American urban environment – disappeared, so another – the continent of Africa – could appear as the past, present and future of AIDS.

As an alternative model to Gallo’s perhaps naïve idea of singular transmission routes, geographers Shannon and Pyle already delivered in 1989 a model, which would replace the notion of disease distribution pathways with a model of diffusion. Their map, based on a wide range of statistical datasets rather than guided by hypotheses and etiological theories, serves as example to visualize the transition between pathway mappings of the first decade of AIDS, versus maps of the AIDS areas, separable by shading and gradient, which were important in the epidemic’s second decade. With improvement in access to accurate data and statistical instruments, pathway models were to become so detailed that their visual representation simply ceased to make much sense.

The 1989 map, built on the WHO’s quarterly statistical data publications, provides a very different image of the epidemic’s movement around the globe (Fig. 2.12). The plotted “Patterns of Spatial Diffusion” remain notably incomplete. Question marks litter the map, pointing to

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147 Shannon and Pyle, “The Origin and Diffusion of AIDS: A View from Medical Geography.”
missing datasets, absent reporting among other problems. Departing from the African continent, the map visualizes a simultaneous arrival of the epidemic in Northern Europe, the United States and the Caribbean. Evidence for the epidemic’s presence in Brazil, South Africa and Australia further suggest diffusion patterns well beyond the single pathways previously assumed by Gallo and others. While a later onset in Asian countries, estimated to have occurred around 1985, was assumed by the authors, the overall impression of the map resists a narrative sequential reading of AIDS’s globalization. From this pattern of global diffusion, the authors claimed a so-called hierarchical-nodal pattern in which the movement of the epidemic was seen to resemble a structure in which urban centers retain centrality, while the infection jumped from large city to large city around the globe. Then, it diffused from these centers to smaller clusters of high-density settlement.  

Maps of the history and present of the global burden of AIDS emphasized an image of an all-encompassing presence of the epidemic, comparable to the syphilis maps, in which only fine-grained resolutions were able to separate prevalence from culture, society or life. These maps have truly turned the infectious disease into a pandemic, present in almost every part of the world and distinguishable only through its severity by comparison from one district to another. However, as the question of the origin of AIDS did not disappear from the spheres of biomedical, microbiological, anthropological and historical interrogation, AIDS inherited a new locale in Africa. Shannon and Pyle made in their paper a statement of particular significance about both the original and the new AIDS district: “The substantial amount of evidence from a variety of directions including biological, spatial and temporal, now points to Central Africa as the ‘index’ location for AIDS.” And with surprising candor, the authors marked the much sought-after location of origin and increasing AIDS burden with a large question mark.

Origins and Futures of AIDS

But what does it mean to position Africa as the “index location” of an immunodeficiency that affected the whole world? Shannon and Pyle followed the assumption raised by many epidemiologists and researchers that the epidemic must have originated at a specific time before its visibility as an epidemic in the 1980s. Where available epidemiological data increased in volume, quality and availability after the epidemic’s

148 Ibid., 13. 149 Ibid., 7.
official birth, with increasingly accurate pictures of its actual distribution around the globe, virtually no data was available to determine the conditions that illuminated the actual inception of AIDS.

Already in Farthing’s 1986 atlas, the map resembling Gallo’s model was accompanied by a neutral political map of West Africa that focuses on Zaire, Uganda and Tanzania. In 1986, the editors were aware that reports of a so-called slim-disease, present throughout the 1970s, was characterized by rapid onset of emaciation in patients. The atlas editors suggest that these reports indicated the presence of AIDS in this region before the beginning of the official epidemic in the United States. A further key to the inconspicuous representation of West Africa might be found in the contextualization of the map within the atlas’s chapter on AIDS epidemiology. Whereas the indication of place – in this case West Africa – is achieved through a map or a cropped portion of a map, this place is similarly connected to a visualization of origin, demonstrating the historical starting point of the epidemic. Furthermore, both maps are accompanied by representations of the virus’s genetic information. Diagrams, graphs and simplified trees of genetic structure, development and homology are used to draw on a natural history of HIV to position it as the uncontested deadly agent, but also a diagram in which the resemblance to simian viruses is shown to indicate the locations where HIV emerged as it crossed species in its prehistory of the pandemic.

Mildvan’s atlas after 1995, more than 10 years later, integrated a map into the epidemiological chapter, in which the political borders of the African continent disappeared. Where once were national boundaries, the map separated the continent according to the favored habitats of several monkey species, each of which were at that time possible candidates for transmitting the original virus to the first human host. The map (Fig. 2.13) therefore sought to visualize both a definition and the origin of HIV, while capturing the “geographic distribution of four major species of the green monkey.” Accompanied by photographs of the monkey and diagrams of the phylogenetic resemblance between HIV and simian immunodeficiency virus (SIV), the visualization suggests a similarly geographic and genetic origin of HIV in the distribution areas of the monkey, while the specific conditions under which the agent mutated into a virus capable of crossing species was unknown in 1996.

152 Mildvan, AIDS, 2.3.
The powerful geographical linkage of the natural history with the developing epidemic in present prompted biologists, geneticists and virologists from the early 1990s to interrogate the African ecology for traces of how HIV crossed into human kind. The extent of the epidemic sustained a belief in an African origin, and it was widely believed that the virus transformed from SIV to HIV.

Fig. 2.13 Map (drawn after the original) showing the distribution of green monkey species in Mildvan’s 1995 AIDS atlas. Charting the geographic domains of the primates serves to arrive at analytical conclusions about the highest probability for the original moment of species crossing that would have allowed identification of the conditions for the virus’s transformation from SIV to HIV.


The powerful geographical linkage of the natural history with the developing epidemic in present prompted biologists, geneticists and virologists from the early 1990s to interrogate the African ecology for traces of how HIV crossed into human kind. The extent of the epidemic sustained a belief in an African origin, and it was widely believed that the virus transformed from SIV to HIV.

153 On the relationship of social and biological histories in the long history of AIDS in Africa see: Tamara Giles-Vernick et al., “Social History, Biology, and the Emergence of...
that this origin would also become the main focus of the still-developing epidemic.\textsuperscript{154} In Mildvan’s atlas the representation of African AIDS remained connected to the interrogation of the phylogenetic progression of HIV and the historical development of the epidemic. The space of the African continent became the index location for an extensive interrogation of the conditions that originally drove the epidemic's Western emergence. By contrast, the maps engaged with factors that made the African continent the place in which the future of AIDS became inevitable as it drew the conditions of a natural habitat, similarly to how Raettig constructed the geographic spaces of enduring plague in the 1950s. The geographical atlas from Smallman-Raynor, Cliff and Haggett had a perspective of its own, in which biological, statistical and geographical data contributed to solving the puzzle of how AIDS originally emerged in Africa (Fig. 2.14).\textsuperscript{155}

The size of circles plotted on the geographical background of the African continent represented the number of nonhuman primates with SIV infections in different regions. The shading of the circles indicated the number of HIV-1 infections in human high-risk groups, namely female sex workers, within the same regions. The diagram in the lower left corner visualizes the data beyond the geographic frame, indicating prevalence on the vertical axis and the natural range of monkey species on the horizontal axis. The representation of excess points at the top of the graph all relate to Central Africa, which, the authors argue, needs therefore to be understood as a significant place.

Unlike a model pointing to Africa as the index location or the origin of AIDS, this map and the map of simian species in Mildvan’s atlas do not produce nominal representations of the presence or absence of disease. Instead, both maps work through ratios of HIV prevalence in relation to the prevalence of SIV in nonhuman carriers. Plotting both numbers onto a geographical space created a picture, in which statistical density formed spatial pattern, so that the relationship between disease and the natural conditions of its origin could be seen. A crucial aspect of geographical visualizations like these is that they do not engage with the disease and its distribution of spaces to signal impact and risk of infection in particular places, but rather visualize a space that has come into focus through an investigation into the biological, social and medical origin of AIDS.


\textsuperscript{154} Patton, Globalizing AIDS; Gallo, Virus Hunting: AIDS, Cancer, and the Human Retrovirus.

\textsuperscript{155} Smallman-Raynor et al., London International Atlas of AIDS, 134.
Both maps are representative for the different approaches undertaken once the fact that AIDS “had reached” Africa was undisputed. The radically different picture of transmission (predominantly heterosexual instead of homosexual) did not allow for a clear picture of a single etiological factor, as it was in place in the early 1980s in the United States. As Bastos pointed out, it took a long time for an African AIDS
epidemiology to be defined on its own terms and to establish a system of ecological surveillance “around clusters of roads, traffic, warfare, and other social variables rather than on the basis of individual behavior, as it was in the United States.”\textsuperscript{156} Beyond the sober scientific approach these maps seem to present, a problematic focus remains on the African continent as a harbor of disease. Where nature-culture barriers collapsed, Africa became the place in which a different kind of AIDS is posited, at once older and closer to an original nature when compared with American AIDS, as well as where newly mutated variants seem to flourish; the place in which poverty, cultural diversity and a lack of enlightenment seemingly disallowed the implementation of Western public health measures. Africa was and is a powerful projection, lodged in the history of colonial medicine, and never fully emancipated from postcolonial angst.

To unpack the larger implications of such visualizations of the African continent, it is worth revisiting a discussion that originated in a \textit{New York Times} feature article in September 1990. Published as part of a series of pieces on AIDS in Africa, the article aimed to visualize the shifting geography of AIDS and to communicate the drastic epidemic in parts of Central and Western Africa. The article emphasized the yet unseen extent and invisible consequences, focusing heavily on the qualitative differences AIDS distribution seemed to maintain on the African continent. Including large-scale portraits of mothers in an unspecified location in Africa, nursing their probably infected children, having left their husbands from whom they became infected, the population at risk in Africa is portrayed as predominantly heterosexual, maternal and infantile. With estimates of the epidemic having already exceeded five million infections throughout Africa, the \textit{New York Times} saw AIDS coming not only into a global focus, but also nesting into the fabrics of the African continent, where poverty, limited infrastructure for public health and slow response from global health institutions made AIDS a fundamentally different disease than in the United States.\textsuperscript{157}

In a paper from 1993, Cindy Patton unpacked the implications of the \textit{New York Times’} reporting on the new epidemic of AIDS in Africa, and she drew particular attention to a map that accompanied the 1990 article. Entitled “AIDS in Africa: An Atlas of Spreading Tragedy” the map visualized percentages of sexually active adults across the African continent who were believed to have contracted HIV. While gesturing to uncertainty about the data and its vague estimates in the text of the

\textsuperscript{156} Bastos, \textit{Global Responses to AIDS}, 57.

article, the map elucidated a different picture. The ratio shading suggested a confident statement of high infection rate throughout the continent, only increasing to darker shading in Central and Eastern Africa. The absence of comparative data visualizations for other global regions and the implicit and explicit background of the US epidemic for comparison, painted a picture of a dramatic explosion of “‘their AIDS’, as heterosexual in comparison with ‘our AIDS.’”\textsuperscript{158} The invocation of “dangerous traffic” by a picture of trucks and the cartographic detail of “AIDS crossroads” hardly help to unpack the conditions under which the epidemic had become so virulent. The hesitation among the international community to engage preventive policies when early signs of the African epidemic were already reported in 1985 is, for Patton, integral to the dramatic epidemic development. But the map claimed a simplified polemics of distribution – and causation – through prostitution. Attached to the map is a long list of the affected African countries, ordered by estimated severity of their epidemic situation. Subtitled as an “atlas of a tragedy,” the map offered a new geography of Africa. National borders, products of colonial control and conflict, become visible through their vulnerability in this new epidemiological order. In this Africa, Patton argues, disease overcomes national boundaries, and “the map of the postcolonial world has now been redrawn as a graph of epidemiologic strike rates.”\textsuperscript{159}

Frantz Fanon famously described the African continent as an interchangeable vessel with the African body, rendered as a flattened, homogenous and unified surface.\textsuperscript{160} Mapping AIDS seemed to have enabled a similar reductive mapping of a dangerous African sexuality. Either labeled as traditional or condemned as destructive (read: prostitution), this sexuality seems to transmit the virus both across the continent and into the familiar fabrics that make up the Western imaginary of a generic African population. The appeal of early Western interventions into the projected “tragedy” of AIDS in Africa culminated in a series of attempts to proliferate the value of the traditional heteronormative and bourgeois family. Bringing together the broken social fabric of postcolonial statehood with a premodern fascination for tribal culture, the picture of AIDS in Africa was inescapably rooted in the continent’s colonial past.


\textsuperscript{159} Ibid., 131.

\textsuperscript{160} Frantz Fanon, \textit{A Dying Colonialism} (New York: Grove/Atlantic, 1994).
For Paula Treichler, the map from the *New York Times* catalyzed a broader reflection on the changing geography of the epidemic. Carefully unpacking the language differences when speaking of an American or an African AIDS, Treichler noted how affected populations become “devastated” and how infected locations become “infested” once they are located on the African continent. She similarly pointed to the obscure fascination of the West with supposedly “little-known sexual practices” performed across the African continent, which in fact had been subject to a colonial obsession with the supposed exotic nature of the colonial body, leaving little room for the claimed lack of knowledge by epidemiologists. The density of cultural stereotypes about race, gender and class in the projection of the African AIDS is, for Treichler, characteristic of the chronicles of the epidemic: Women are seen as passive vessels; people of color are perceived as dependable; uneducated, illiterate people are considered immune to public health messages and the African population appears as a unified and largely homogenous body – while its cultural, linguistic, political and historical diversity is sidelined. Maps, and in particular maps of AIDS’s natural history and continuous distribution in Africa, rarely address such diversity of conditions that contributed to the spread of the disease.

Megan Vaughan reminds us that the perception of diseases on the African continent cannot be disconnected from colonial heritage. The vision of AIDS in Africa is equally entrenched in a tradition of colonial medicine in which the notion of the colonial people as a united community always trumped active engagement with their diversity. This notion of unity exceeded the framework of identity in which AIDS was conceived of in the urban environment of late-twentieth-century America. First, identified as part of the African people – a transliteration of the colonial people – and, second, identified as a member of a tribal culture, a larger community guided by nonmodern principles, AIDS in Africa became a naturalized disease – a disease that had returned to its origin.

The construction of a timeless “African reservoir,” a place marked as AIDS’s historic origin and its present epidemic is a recurrent theme in the later atlases. Repeated representations of Africa as a region of disease, of zoonotic interferences and risky social practices frame the continent as a place distinct from Europe and the United States, but also from other geographical patterns of distribution. This notion of difference,

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motivated by colonial and postcolonial heritage as much as by epidemiological and genetic findings, also contributes to further separate the new, global AIDS in Africa from the old American AIDS of the early 1980s. To see AIDS as a pandemic, to invoke a borderless picture of the disease as a global threat, required a clear point of origin, a vast space of distribution and a mélange of conditions that made the history of its development from an origin feasible and graspable.

Geographic Critic

Howard Wainer, among other roles the editor of the English version of Jacque Bertin’s *Semiology of Graphics*, also published a book on the graphical communication of uncertainty. The emergence of quantitative methods in the nineteenth century, Wainer wrote, gave rise to a “science of uncertainty,” otherwise known as statistics. This science of statistical comparison and mathematical modeling employed graphic displays, and especially maps, to answer vexing questions and to navigate the irreducible uncertainty of human existence. Uncertainty lies also at the heart of the visualizations in the maps discussed in this chapter; as a science of this communication, mapping provides pathways, propositions and visual discussions of possible ways through the open questions of original distribution, zoonotic interference, sexual communities and disease districts. In maps, one could conclude, AIDS is drawn as the bearer of uncertainty, as an epistemic anomaly, which can only be resolved through the mapping of its unique spatial patterns and through the identification of its original geographic origin.

In the epidemic’s second decade, maps invoked the notion of AIDS as a global uncertainty. But crucially their purpose was to disprove and resolve outmoded concepts and models of seeing and understanding AIDS. Through mapping, the epidemic was presented first as a national crisis of the United States, then becoming a global pandemic and finally a disease of the southern parts of the African continent. Maps contributed to the problematic vision of AIDS as an exclusively African disease, repeating the colonial stereotype of Africa as a harbor for disease, which as an epidemic had contaminated the rest of the world. Geographical reasoning also applied a critical lens to Western neglect of the spiraling epidemic in Africa.

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In his thesis from 1992, Paul Farmer described the efforts to find spatial coordinates in which AIDS became a disease of the Haitian village as “geographies of blame.” Farmer’s early ethnography details how AIDS was integrated into the existing framework of Haiti’s reputation for poverty, mystical otherness and tropical climate. Maps, especially those that use vectors and arrows, remind us that the integration of global AIDS transmission routes was worked out in the existing political, economic and social networks and relationships that already crossed the oceans. Seeking causality often turned out to be a polemical rather than a critical engagement with the complexity of AIDS on the grounds. It is fitting that in 1992 Farmer rejects every account of the Haiti epidemic resembling the Pattern II of an African picture. Instead, he argues that the epidemiological picture suggested strongly that the Haitian epidemic was “American.”

The geographical accusation that Farmer laid out in the late 1980s in his fieldwork was that if AIDS turned out to be an African AIDS, Haiti would not only be blamed as a crucial landmark in the passage of the disease as it made its way to the United States, it would also present a chance to make the Haitian AIDS part of the invisible epidemic of “elsewhere.” The idea of a Haitian AIDS was never just an identification of a transmission route but moreover was also a rejection of the global community that AIDS was on the cusp of forming: The geographical demarcation of an “African AIDS” contributed to a resolution or separation. Maps established a difference between African and American AIDS rather than a continuity. The geographical quest for a global vision of the pandemic and for increasing the visibility of its diverse conditions, AIDS’s many different shapes and natures in different areas, contributed to unseeing of what would become the epidemic’s locale in the late 1990s.

The work of Didier Fassin allows for a critical revision of how maps and medical geography catalyzed the radical displacement of AIDS to Sub-Saharan Africa. If we return to the beginning of the chapter, where the making of a geographical vision in maps replaced embodied representations of the patient with disease in photography, this same shifting commitment of mapping would prevent the bodies of people with AIDS in the territory of Pattern II to appear in any comparable way. Fassin has detailed how ways of seeing AIDS changed into an abstract visualization of equally abstract numbers mediated through technical and complex

visualizations to keep the most obvious problem out of sight: that AIDS in Africa was a global crisis.

Fassin described the effect as “cultural anesthesia”: the portrayal of a decisively modern capacity to render the pain of others inadmissible to public discourse. Maps certainly played a part in this, providing the West with abstracted spatial diagrams of the tragedy “elsewhere.” Extrapolating from Fassin’s study, one could argue that the shaded map of distributed HIV incidence burden per nation and capita conveys an abstract picture of the millions of people who have died of AIDS around the world, but it does not invite further empathic engagement. As Fassin writes, “[W]e feel no need to know more.”

Having established patterns of difference in which African AIDS was classiﬁ ed as an almost different disease – one of heterosexual transmission, linked to poverty, prostitution and an old and natural history – its contemporary development contributes to an idea of incommensurability between the social worlds in which the epidemic appeared.

A recent study, published in 2012 by Jacques Pepin, brought new significance to what is meant by the geographical origin of AIDS. His combination of phylogenetic models, historical methods and anthropological expertise presents a persuasive account of the history of how AIDS turned into an epidemic, and later a pandemic. His geographical account follows the pattern of separation between the phylogenetic stages of HIV-1. The virus’s genetic information is clustered according to homology and discrepancy, so that groups of ribonucleic acid (RNA) are distinguished as M (main), responsible for roughly 99 percent of worldwide cases of AIDS, the group O (outlier), the group N (non-main, non-O) and the group P. Group M has nine subtypes, which are called A-K, with E and I removed, as they turned out to be identical to other subtypes. Infections sometimes occur in combinations of these subtypes, creating so-called Circulant Recombinant Forms (CRF) infections. Each subtype is consistent in its appearance among speciﬁc risk groups and often characteristic for particular geographic spaces. The combination of their local appearance and the phylogenetical emergence allowed for a more detailed mapping of the spatial development of AIDS before 1981. Where a speciﬁc subtype is the only one found in an area like West Africa, such as CRF02_AG, it can be concluded that infection in that area happened considerably late in the natural development of HIV-1. In the United States and most of Europe, subtype B is responsible for up to 98 percent of the total cases, indicating that a relatively late variant of the

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165 Fassin, _When Bodies Remember: Experiences and Politics of AIDS in South Africa_, xii.
virus was carried across the continental divide. As these geographical indicators allow for a vague model of distribution, it would be wrong to assume that the oldest known variant of the virus would indicate the original location of species crossover. What is instead indicative of a phylogenetic index location of origin is the place with the highest divergence of subtypes and groups of HIV: Central Africa.

The highest diversity of HIV-1 subtypes was found in an area where the two Congos, Cameroon, Gabon, the Central African Republic and Equatorial Guinea meet. Not only have all known subtypes of group M been present here, but the data also indicates a higher genetic diversity within these subtypes compared to anywhere else. Pepin’s conclusion, supported by many researchers working on the phylogenetic trees of HIV is clear: “HIV-1 must have originated in central Africa, where it has had more time to diversify genetically.”167 This acquired diversity is not only achieved over time, but also through the efficiency of its propagation. But furthermore, the question was how the virus eventually escaped these regions. Pepin narrowed down the list of probable places of the oldest epidemic outbreaks of AIDS, caused by HIV-1, to the two Congos and, more specifically, Kinshasa and Brazzaville.

The next pieces of the puzzle were provided by a series of assumptions about chimpanzees in Central Africa and the closest relative to the human retrovirus, which was agreed to be SIV-cpz. Combining these understandings with clinical observations from a French colonial doctor in the 1930s suggests the presence of a syndrome resembling the appearance of AIDS in Kinshasa already in the 1930s. Furthermore, Pepin used studies and data derived from “molecular clocks” to further date a common ancestor of HIV-1 in 1931, suggesting that a species crossover must have happened in the decade before. Against the backdrop of historic Kinshasa as a town of trans-African labor exchanges and a center for constructing large railway tracks, the point of departure for singular infections to become epidemic were likely be found here. As a colonial legacy, Pepin describes how the practice of mass treatments delivered by injections that were administered in conditions ignorant of sterile guidelines contributed to the proposed original spillover. He concludes that these practices, in place when a wave of mass immunization against what was feared by colonial authorities to be a syphilis outbreak among the sex workers of Kinshasa, seemed to be responsible for the first major event in HIV distribution.168

What Pepin brings to the discourse on AIDS’s origin is a welcome suggestion that AIDS has indeed several different beginnings. When

maps and geographical reasoning are trying to achieve a perfect align-
ment of the historical and geographical point of a disease’s departure, or
the infectious agent responsible, the notion of the many different
moments of origin that are involved in turning a supposed single event
of a simian virus crossing species into a global pandemic with 60 million
infections is lost. Imagining a true origin – and it is worth remembering
that we do not know the true origin of most infectious diseases – seemed
to promise a full understanding of a threat that could then be dismantled.
These thoughts resonate with Nietzsche’s notion of the chimera of origin
that is inextricably bound to a desire for a true essence. To identify the
point of origin seems to allow a final view of the epidemic’s essence, the
innermost truth of the epidemic. A quest for an epidemic’s origin is
nearly always driven by the desire to resolve the epistemic anomaly that
an epidemic almost inescapably is. But Pepin, along with many map
makers and geographic modelers, points to the manifold nature of ori-
gination, in which randomness, arbitrary events and a plethora of bio-
logical, social and cultural factors contribute to a genealogy of AIDS,
equally characterized through unstable viral evolution, transnational
travel, zoonotic constellations and companion species. The origin is a
complex story of random mutations, of colonial interventions, tropical
medicine and hygienic failure.

Maps give single pictures of complex and often-contradicting stories.
The map can visualize an origin of AIDS as the collapse of categories
such as nature and culture, society and medicine, biology and anthro-
pology. But maps can equally yield to a highly suggestive interpretation
of AIDS history, suggesting an undisclosed, inaccessible mystified point
of origin from which the epidemic found its way to the non-African
world. The discrepancies between the Gallo model (1986) and the
complex modelings of uncertainty found in the geographic atlas, and
later in Pepin’s book, is foundational to a critical understanding of how
AIDS became African and how the territory of the African continent has
become a synonym for the birth and the future of AIDS in the 1990s. But
Pepin’s work also shows in all clarity how the quest of defining the origin
of AIDS is increasingly consumed by the unpacking of the innermost
mechanics of HIV.

169 This quality of Nietzsche’s perspective onto the concept of origin in the philosophy of
history has been contrasted by Foucault with the concept of genealogy. Where the
notion of the origin inescapably insists on the notion of essence and originality
genealogy offers a history of niches and an ecology of historical development. Michel
Foucault, “Nietzsche, Genealogy, History,” in The Foucault Reader, ed. Paul Rabinow