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Kristy M. Layton

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INFECTIONOUS DISEASE AND
THE INTENT TO DESTROY

Kristy M. Layton

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[Pathogenocide]

Infectious Disease and the Intent to Destroy

By
Kristy M. Layton

A Thesis Presented to
The Faculty of the Department of Epidemiology and Public Health
Yale University

In Candidacy for the Degree of
Master of Public Health

2006
Infection Disease and the Impact to Destiny

Krisyl M. Rayou

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20 April 2006
Date
Abstract Genocide is a new word for an ancient practice. Despite the common appropriation of infectious disease as a method of destruction, little has been written in either the Public Health or Genocide Studies disciplines about such occurrences. Genocide by infectious disease may be contained within the neologism *pathogenocide*, incorporating *pathogen* (a disease-producing agent) and *genocide* (the intentional destruction of a people group, in whole or in part). Under the custody of this term, I propose a novel framework for conceptualizing degrees of *pathogenocidal* intent and activity. Four quadrants (types) are formed by horizontal and vertical axes quantifying intent and activity.

    Each *pathogenocide* type is characterized by its manipulation of epidemiological relationships between agent, host, and environment. Types I-III are rich with examples of modern events commonly accepted as genocidal, and generally easy to conceptualize. Accepting type IV, or negligent *pathogenocide* on the other hand, is likely to be met with resistance by resource-rich organizations, governments, and other entities who could be implicated by absence of intervention.

    This paper frames the neglect of the world's poor by those with means to intervene, treat, and cure modern infectious plagues as a form of genocide. I discuss expected resistance to this context, and question what requirements must be met in order for a prohibition regime to achieve normative status, such that global intolerance for preventable deaths is finally achieved.
Pathogenocide: Infectious Disease and the Intent to Destroy

Humankind has long occupied itself with the art and science of healing, aspiring to reduce death and disability among their cohort. Medical science has, from time to time, been appropriated by malevolent men and women as a means of harming members of their own species. The deliberate communication of a disease agent to a host, like any sword, gun, machete, Zyklon gas chamber, or sarin dirty bomb, is an emerging, effective weapon of modern war and selective population control. Infectious disease has played a key historical role in the conduct of mass murder, but its connection to the study of genocide goes largely unnoticed. Merging the disciplines of Public Health and Genocide Studies, genocide by infectious disease may be contained within a new term: pathogenocide, incorporating pathogen (a disease-producing agent) and genocide (the intentional destruction of a people group, in whole or in part). Under the custody of this neologism, I propose a novel framework for conceptualizing degrees of pathogenocidal intent and activity.
I began this paper by considering the connection between infectious disease and historical genocides. I wanted to know if using public health principles could aid in the understanding and prevention of current and future genocides. I collected examples of infectious disease used in genocides until patterns began to emerge. From these patterns, I constructed the framework and began to analyze the implications for genocide studies and translate them into global public health policy. In this paper, I will weave together disease and genocide into a singular phenomenon. I will defend each continuous scale of my framework and offer modern historical examples of the four types. I will conclude with a discussion of global political consequences of this framework.
Pathogen and Disease

Study of infectious (and, to some extent, chronic) disease customarily includes a discussion of the classic epidemiology triangle: the interplay between environment, host, and agent, within the context of time. Transmission requires a potent agent, a susceptible host, and an environment in which the agent can flourish. Additionally, the chain of transmission may involve portals of entry and exit, a reservoir, and/or vectors which carry the pathogen from one host to another.

Epidemiologists have developed models linking health and violence within the triangle, substituting the aggressive perpetrator for both agent and environment (Macdonald, 2002), but to my knowledge, none have undertaken a model where the weapon of violence is, itself, the pathogenic agent. Infectious disease in the context of modern genocide honors the environment-host-agent relationship, but may result in atypical or manipulated relationships between elements. The environment may be constructed or altered, the host’s susceptibility may be intentionally compromised, or an agent might be intentionally introduced or abnormally perpetuated.
Epidemiology, as with logic, mathematics, philosophy, and other disciplines, takes great care to verify causality through various standards. One such criterion is necessary and sufficient classifications of exposures. To be necessary, a cause must always precede the outcome, and in the absence of the cause, the outcome never results. It is necessary to breathe oxygen to maintain human life, or to be exposed to *Mycobacterium tuberculosis* to develop tuberculosis disease. Sufficiency relates to the degree of inevitability of a result based on exposure to a cause. A sufficient cause is enough to force the outcome to transpire. Unprotected sexual contact with an HIV+ person is a sufficient cause of HIV infection. An outcome may have a number of necessary and/or sufficient causes, but it is extremely rare for a cause to be both necessary and sufficient, as a one-to-one *if-and-only-if* relationship of exposure and outcome (Zalta ed. 2006). Considering pathogenocide, this axiom holds true. Even the clearest cases of intentional destruction by means of infectious disease are not attributable to specific necessary or sufficient causes. Some pathogeocidal activities may be sufficient but not necessary, necessary but not sufficient, or neither sufficient nor necessary for the genocidal outcome.

This paper considers only infectious (communicable) disease agents as an exposure. Certainly, chronic or non-communicable disease (NCD) in a genocidal context could easily be considered: *Pathogenocides* targeting the indigenous populations of Australia and North America, for example, not only
caused a rapid decimation of the population of that period, but preceded a legacy of mental illness, substance abuse, post-traumatic stress, poor nutrition, and modern epidemics of obesity, type II diabetes, cancer, and tobacco-related illness (West, 1974). In the limited scope of this paper, I recognize the validity of NCD in genocide, but will not include chronic disease in my discussion.

Genocide in Context

Genocide is a new word for an old practice. All discussion of genocide must include a consensus of terminology, as even scholarly lexicon has evolved considerably since Raphael Lemkin’s foundational work. Variations of agent, victim, goal, scale, strategy, and intent combine to form a range of definitions, from soft to hard, and from static to dynamic (Jones, 2006). Certainly, the widely-accepted 1948 Convention on the Prevention and Punishment of the Crime of Genocide allows for some international and interdisciplinary agreement on genocide’s essential characteristics. Using Article II as a minimum operational legal definition, genocide is:

...any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such:
- killing members of the group;
- Causing serious bodily or mental harm to members of the group;
- Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part;
- Imposing measure intended to prevent births within the group;
- Forcibly transferring children of the group to another group.
(cited in Gellatley & Kiernan, 2003)

However, imprecision within the convention and emerging trends in human rights violations have prompted no short list of alternative definitions by genocide scholars. Nearly all agree on three necessary elements: intent, minority
status of the victim group, and the essential goal of eliminating the target, but
diverge on requirements of scale, strategy, and outcome. For purposes of this
discussion, I will use Jack Nusan Porter's 1982 definition: "Genocide is the
deliberate destruction, in whole or in part, by a government or its agents, of a
racial, sexual, religious, tribal, or political minority. It can involve not only mass
murder, but also starvation, forced deportation, and political, economic and
biological subjugation" (cited in Jones, 2006).

The importance of definition emerges, in the pathogenocide model, when
intent and activity are low, as in Type IV instances. "Complicity in genocide" is
punishable under Article III of the Genocide Convention. Condemning state
neglect or indifference to genocides as complicity opens a Pandora's box of
culpability that may cause discomfort with self-actualizing, rights-respecting
cultures. The Genocide Convention and the Nuremberg Principles suggest that
the creation of conditions that will eliminate a group or part of a group of people
may constitute genocide. Institutional systems that allow mass mortality of a
targeted group may not require evidence of specific intent. Simple awareness of
a likely or inevitable result is enough, under broad definitions of intent, to
constitute intent. It is therefore crucial to establish a clear understanding of intent
before attempting to categorize genocidal or quasi-genocidal events.
Activity and Intent Continuums

Certainly, intent and activity scales are not the only variables to consider in the determination of genocidal activities. A more complex, multifactorial framework might be constructed to account for other variations in host, agent, and environment that are outside the scope of this paper. Intent and activity alone are not sufficient to explain all deviations, but are the most easily discernable distinctions in pathogenocides. For purposes of this framework, intent is simplified into high and low extremes, but is more accurately described as continuum from specific intent to constructive intent (Jones, 2006). Specific (high) intent is “where actions with predictable results are taken over an extended period of time, and the consequences of these actions regularly confirm their presence” (Reisman and Norchi, cited in Jones, 2006). Constructive intent, on the other hand, occurs when the perpetrators know or should know the likely outcome of conditions or behavior (Jones, 2006). In his 1997 book, A Little Matter of Genocide, Native American activist Ward Churchill developed gradations of genocidal culpability: from Genocide in the First Degree (premeditated intent) to Fourth Degree (no premeditation or other criminal behavior is present, but “the perpetrator(s) acted with depraved indifference to the possibility that genocide would result from their actions and therefore [failed] to effect adequate safeguards to prevent it” (Churchill 1997, cited in Jones 2006).

Activity is also framed in high to low extremes in this framework. Low activity may be understood as either passivity or as refusal to intervene against
another's malevolent action. Both intent and activity can take a hard or soft attitude. Disentangling evidence of a calculated, coordinated, specifically genocidal motive, as required by hard, legalistic constructs may be difficult, given the often convoluted, secretive, and bureaucratic nature of genocidal organizations. No legal definition of genocide offers clarity on what constitutes activity or non-activity. It is therefore conceivable that some genocide scholars will oppose my explication of pathogenocide types, especially type IV, with its softer approach to attributing culpability to passive, unintentional genocide actors.

These divisions should not be considered categorical, but rather as a continuum of high to low. Genocides, as complex as they are sociologically, politically, and psychologically, rarely fit into neat charts or frameworks. Most genocidal events are not exclusively intentional or unintentional, active or passive—rather, they are malleable and transitory across the months, years, or decades that encase the destruction of a people. The lack of clearly documented intent or action policy should never be mistaken for innocence. As Martin Shaw describes in War & Genocide:

Intention does not mean, of course, a clearly stated policy: on the contrary, since genocide is always and everywhere illegitimate, the destruction of civilian groups is almost invariably cloaked in subterfuge and euphemism. Orders are hidden and indirect, and the chain of responsibility needs careful elaboration before criminal liability on the part of leaders can be established. Intention may be inferred, moreover, from patterns of actions that would hardly have occurred in its absence. Where organized groups directly inflict terror and killing, intention is usually relatively easy to establish. Where people are dying from the indirect effects of policies, as in famines, intentionality is more difficult to establish. (Shaw 2003)
Pathogenocide Types

I will consider examples of these four types in modern history, from the colonial era to the end of the twentieth century. Despite the infancy of the discipline, genocide scholars contend that the practice of genocide extends back into pre-historical and mythological eras. Leo Kuper's sentiment carries much weight: "the word is new, the crime ancient" (Kuper 1981). Ancient wars now classified as presumed genocides likely involved disease as a mechanism for destruction but for lack of reliable evidence, will not be considered in this paper. Only well-documented, modern genocides will be considered in this section.

TYPE I: Assaultive

Type I pathogenocides are characterized by high genocidal intent and a high level of activity perpetuating mass death or the elimination of a group. Type I are the most clearly verifiable and understandable pathogenocides. They are assaultive in nature, in which perpetrators intentionally, actively, purposefully, and methodically infect a target population with a harmful biological agent. Epidemiologically speaking, Type I pathogenocides alter the Agent-Host-Environment triangle by introducing and perpetuating an infectious biological agent. It is biological warfare in its simplest form, as the agents used are both sufficient and necessary causes for the outcome.

The prototypical Type I pathogenocide occurred during the European decimation of indigenous North Americans: what has been called "the most
extensive and destructive genocide of all time" (Jones, 2006). The arrival of Europeans in the New World had devastating consequences for native peoples, but organized violence and oppression aimed at Native Americans is hardly a novel tradition. "The history of EuroAmerican victimization of Native peoples," wrote Barbara Perry, "is as old as the history of Euro-Americans" (Perry, 2002). Systematic murder, forced migration, and cultural subjugation lasted at least four centuries. Communicable diseases contributed to the hefty death tolls during the 15th-19th centuries, as arriving colonists carried new strains for which indigenous populations lacked immunity (Patterson & Runge, 2002).

Originally, these epidemics may have been "convenience" deaths, but colonists were quick to realize the full potential of their germ advantage. No less than 100 epidemics of measles, scarlet fever, plague, sexually transmitted infections, and smallpox ravaged the New World between 1500 and 1900 (Perry, 2002), not all of them accidental. Stiffarm and Lane (cited in Perry, 2002) and Cook (1998) have identified primary sources describing British colonial "official policy" of contaminating the "exorable race" with smallpox -- the most feared of contagions as it killed quickly and efficiently. Noble David Cook evocatively describes these infamous, premeditated actions, but it remains unclear how widespread these Type I practices were:

In 1763 correspondence between Sir Jeffrey Amherst, commander of British forces in North America, and Colonel Henry Bouquet, in charge of the Ohio Frontier, Amherst suggested that smallpox might be introduced among native-American populations. He wrote, "Could it not be contrived to send the Small Pox among those disaffected tribes of Indians? We must on this occasion use every stratagem [sic] in our power to reduce them." Bouquet responded, "I will try to inoculate [them] with some blankets that might fall into their hands." Colonel Bouquet continued in a style appropriate to an adherent of the Black Legend, "I wish we could make use of
the Spanish method, to hunt them with English dogs, supported by rangers and some light horse, who would, I think, effectively extirpate or remove that vermin." Amherst responded, "You will do well to try to inoculate the Indians by means of blankets as well as to try every other method that can serve to extirpate this execrable race." Amherst also said he would be "glad if your scheme for hunting them down by dogs could take effect, but England is at too great a distance to think of that at present."

Captain Simeon Ecuyler of the Royal Americans recorded in his journal that "out of our regard for them [two Indian chiefs] we gave them two blankets and a handkerchief out of the smallpox hospital. I hope it will have the desired effect." Furthermore, it is recorded that the firm of Levy, Trent and Company charged the Crown in June 1763 for "sundries got to replace in kind those which were taken from the people in the Hospital to Convey the Small-pox to the Indians viz: 2 Blankets at 20/1 00, 1 Silk Handkerchief LO/O & Linens do 3/6." Subsequent documents indicate that several knew of the project; even General Thomas Gage endorsed it (Cook 1998).

The slaughter of native people in North America by infectious disease slides fluently between Type I and Type III pathogenocides. Certainly, factors other than gift-wrapped blankets and handkerchiefs led to such profound human loss via disease: Nutritional compromise from forced migration, crop failure, and destruction of buffalo herds compromised Native American resistance to European pathogens. David Stannard, (cited by Barkan in Gellatley & Kiernan 2003) claims that while the spread of disease and direct murder "operated independently at times, disease and genocide were usually interdependent forces" and "intertwined". Slavery, forced labor, and so-called "death marches" exhausted physical and emotional reserves, and the forced relocation of native peoples to densely populated reservations and residential schools allowed for mind-boggling death rates from tuberculosis, typhus, and other infectious diseases. These factors might lead one to categorize the Native American Genocide as a Type II or III pathogenocide. It is my contention that any genocide
lasting over 400 years earns the reprehensible honor of belonging to more than one descriptive method category.

Another credible case of Type I pathogenocide was Iraq's 1998 Anfal assault on the Kurds. While this campaign is known for its chemical bombardments of mustard gas and sarin, some pundits speculate that biological agents (namely rotavirus and cholera) were well-developed at the time of the attack (Hughes 2002, Cordesman 1998). Already a major cause of death among children in developing countries, rotavirus and cholera pathogens are sufficient but not necessary causes of gastrointestinal distress and dehydration, and combined with the physical destruction of potable water sources would likely cause widespread Type I pathogenocidal deaths if they were indeed used.

United Nations Security Council monitoring of Iraq's Biological weapons capabilities began in 1995, and UN documents describe a culture of cover-ups, falsehoods, and denial by the Iraqi government. Despite the recent failure of the US-led coalition force to locate the WMD smoking guns in Iraq, anthrax, botulism, aflatoxin, hemorrhagic conjunctivitis virus, rotavirus and camel pox virus have all been discovered in Iraqi military hands (UN Security Council, 1995). Stephen Hughes argues that the Rotavirus Biological Warfare Program has been largely ignored in the UN investigations, while it carries the potential for widespread illness and death. Such deaths would be largely unnoticed, Hughes claims, as spikes in infectious diarrhea in conflicted developing nations is common and
could be explained by natural causes (Hughes 2002). Past and future mass
distribution of weapons-grade infectious agents by rogue states requires
additional investigation, but may surface as the quintessential Type I
pathogenocide.

The emergence of Human Immunodeficiency Virus (HIV) infection in sub-
Saharan Africa, exacerbated by conflict, provides another example of Type I
pathogenocide, but in a mixed pattern of intentional and unintentional distribution
of the lethal microbes similar to the Native American example. It is unknown how
many perpetrators of sexual violence in the Rwandan genocide were HIV
positive, or knew their status (and could therefore intentionally infect their
victims). Both major genocides occurring after the age of AIDS, the Rwandan
and Balkan wars, included widespread sexual violence against women. While it
is possible this is coincidence, it is likely that the knowledge of the prevalence of
HIV in a region adds to the temptation of genocidaires to wield this infectious
agent as a weapon.

Lisa Sharlach compared and contrasted Rwandan and Balkan rape-as-
genocides, demonstrating that in the former Yugoslavia, forced impregnation was
intended as the method of terror, whereas in Rwanda, deliberate transmission of
HIV was a unique component of rape as genocide. Survivors of the largely Hutu
rapes against Tutsi women reported, according to Sharlach, “Hutu men
diagnosed with HIV raped Tutsi women during the civil war, then told the women
that they would die slowly and gruelingly from AIDS" (Sharlach, 2000). HIV
distribution in central Africa has a multilayered causal pattern, and should not be
oversimplified to rape alone. However, the traumatic nature of sexual violence
substantially increases women’s biological susceptibility to viral transmission, as
dermal and soft tissue lacerations provide a portal of entry for the HIV virus.
Basic health care, never mind Post-exposure prophylaxis (PEP) for rape victims,
did not exist in Rwanda during the genocide.

Among the estimated 250,000 raped women, HIV seroprevalence among
survivors is high (Hilsum, 2004), but it is impossible to know what percentage of
these infections occurred as a result of rape, nor what percentage of these rapes
were perpetrated by rapists knowing their serostatus. According to a 2004 WHO
report, one Rwandan collective of rape survivors estimates that two-thirds of its
25,000 members are HIV-positive as a result of the 1994 rapes. The actual
numbers may be higher, however, since many women hesitate to get tested
when there is no access to antiretroviral treatment (Mandelbaum-Schmid, 2004,
man forced, at threat of death, to have intercourse with a woman suspected to
have HIV. According to the victim, the Interahamwe soldiers “told me that there
was no death quite like sleeping with a woman with AIDS” after the incident. The
document calls this a “well-known practice, though usually aimed at women”
(Africa Rights, 2004).
Mass-rapes conducted in other AIDS-belt regions like Sierra Leone, Liberia, DRC, and Angola have left hundreds of thousands of AIDS widows suffering from a rapidly debilitating, fatal disease. AIDS may not kill as quickly as ricin, smallpox, or typhus, but it is a weapon that is being arsenalized with increasing frequency, what Sharlach calls "in essence, protracted genocide" (Sharlach 2000). A high prevalence of HIV in a country without consistent access to anti-retroviral (ARV) medication changes its patterns of conflict and genocide, and the presence of a 100% fatal virus gives it the potential to become a fearsome and far-reaching weapon in the "...acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such..."

**TYPE II: Structural**

Characterized by low genocidal intent, but high activity, Type II pathogenocides are structural, and involve negligently infecting a population with an agent, or refusing to intervene, but without the criteria necessary to qualify the action as genocidal. Epidemiologically, Type II pathogenocides do not necessarily introduce or perpetuate a pathogen, but instead alter or restrict the environment known to facilitate the agent's survivability and transmissibility.

Thomas Nagy's assertion that the United States intentionally disrupted Iraq's water treatment facilities through sanctions on chlorine, pipe, and other essential materials, knowing full well that shortages of these vital supplies would result in epidemics of cholera, hepatitis, and typhoid among Iraqi citizens (Nagy,
2001). Falling, perhaps, just short of genocidal intent, the Defense Intelligence Agency documents uncovered by Nagy cites abundant evidence that the US knew the degree of morbidity and mortality that would result from continuing sanctions, but seemed to consider these results acceptable in the pressuring of then-dictator Saddam Hussein to concede to international demands.

Declassified US military documents reviewed by Nagy reveal a calculated foreknowledge by American officials of the risks of water treatment sanctions to Iraqi civilians, especially children. "Failing to secure supplies will result in a shortage of pure drinking water for much of the population," one report states. "This could lead to increased incidences, if not epidemics, of disease" (Cited in Nagy, 2001). Another document titled Disease Information spells out the estimated effects of military action in the capitol city under the subject line, Effects of Bombing on Disease Occurrence in Baghdad: "Increased incidence of diseases will be attributable to degradation of normal preventive medicine, waste disposal, water purification/distribution, electricity, and decreased ability to control disease outbreaks. Any urban area in Iraq that has received infrastructure damage will have similar problems." The document then catalogues expected pathogens leading to diarrheal illness, including bacterial agents (E. coli, shigella, and salmonella), protozoan (giardia), viral (rotavirus), which are identified as affecting "particularly children".
In another Defense Department report cited by Nagy, officials cite a UNICEF/WHO document attributing the widespread communicable disease outbreaks in Baghdad to the 95% reduction in potable water, and the complete lack of working water and sewage treatment plants (Nagy, 2001). Nagy insists these documents prove the US predicted the consequences of Iraqi sanctions on civilians, violating the Geneva Convention’s prohibition to “render useless objects indispensable to the survival of the civilian population such as...drinking water installations and supplies... for the specific purpose of denying them for their sustenance value to the civilian population... whatever the motive” (Geneva Convention, 1979). As a result, Nagy cites UN estimates that more than half a million Iraqi children died as a result of the sanctions by 2001. Churchill described *Genocide in the Second Degree* as acts with “reckless disregard for the probability that genocide would result from their actions” (Cited in Jones, 2006) This aptly describes American active disruption of Iraqi water systems through sanctions, actively creating structures known to exacerbate natural causes of widespread civilian morbidity and mortality from infectious diarrhea.

**TYPE III: Convenient**

Type III *pathogenocides* are identified by a highly specific genocidal intent, but low activity. They are *pathogenocides* by convenience; death by infectious disease as the byproduct of structural violence or the controlled environment inflicted upon victims (environments and hosts) by *genocidaires*. The “deaths of convenience” characterizing Type III *pathogenocide* are the welcomed and
intentional by-products of harsh conditions, forced displacement, malnutrition, and lack of access to health care imposed by genocidaires. We saw elements of this in the European encounters with Native North Americans, before and after the Type I action ran its course. “Death camps” of Stalinist Russia, Armenia, and Nazi Germany frequently starved and froze its prisoners. As stated earlier, Types I and III often intermingle, and elements of these examples often have “dual citizenship” in more than one category.

Starvation and malnutrition, while not communicable in the classic sense, is a crucial precursor to infectious epidemics in camps. The majority of modern genocides, with the exception of those occurring too quickly (e.g. Rwanda’s one-hundred days), included some form of nutritional provision sub-adequate to sustain life. Undernourishment is a chief co-morbidity in many infectious diseases, among them Noma (cancrum oris), a gangrenous opportunistic stomatitis seen in European concentration camps of World War II (Marck 2003) and currently seen in severely malnourished African children.

The 1970’s Khmer Rouge (KR) genocide utilized Type III pathogenocidal tactics by both starving and withholding medical care from Cambodians (Jones, 2006) which made economic sense for a regime “needing” to eliminate one-quarter of the population (Two million bullets are expensive; starvation and disease kill for free.) The KR’s refusal to import pesticides allowed malaria to rampage the countryside, where victims lived without protective nets or shelter.
Finally, the KR’s dissolution of the family structure left sick Cambodians without traditional network of caretaking.

The connection between intentional famine and pathogenocide fits into Type III. Martin Shaw says that, “one of the most basic ways in which the power of social groups is weakened is though deprivation of the means of life.” Colonial powers took advantage of weather-induced food crises through “more or less conscious neglect and indifference” to perpetuate indigenous famines in a quasi-genocidal method (Shaw 2003). R.J. Rummel, in his book *Death By Government*, described the ten worst instances of democide (government mass murder) at the hands of totalitarian regimes. Several of these lethal states used famine as a weapon against its people. Joseph Stalin’s 1932-33 “terror famine” eliminated of five million Ukrainians. Mao Zedong’s state-sponsored famine during the Great Leap Forward killed eight times that many—up to 40 million—earning the nefarious honor of the largest single case of mass death in the twentieth century (Shaw, 2003). The percentage of these deaths attributable to infectious agents ravaging nutritionally compromised hosts vs. pure starvation may never be known, but the two causative factors are inextricably linked and must be considered in the study of pathogenocide.

The North American residential schools and forced relocation of Native populations can be exemplified as Type III *pathogenocide*: large numbers of Native North American children succumbed to infectious diseases such as
tuberculosis during the twentieth century; evidence points to both intentional and unintentional infliction of disease and a death rate on par with those of Nazi concentration camps. According to the government’s own statistics and Canadian newspaper reports of 1907, the Indian Residential Schools’ death rate exceeded 50% (The Truth Commission into Genocide in Canada, 2001). The most striking evidence of the Canadian government’s direction, knowledge, and perpetration of these deadly schools came from Dr. Peter Bryce, a medical inspector for the Department of Indian Affairs (DIA). Bryce’s 1907 investigation demonstrated provides evidence of genocidal mortality rates in Canadian Residential Schools, but by his own account, this report was suppressed by his superiors. Bryce’s 1922 book, The Story of a National Crime further describes how native children were deliberately contaminated with infectious diseases in residential schools, and how his report was ignored by the DIA.
Affidavits by survivors and other documentations of abuse in Canadian Indian Residential Schools collected by The Truth Commission into Genocide in Canada include several Type I and III *pathogenicidal* acts and patterns:

- Forcing children's' heads into toilets and making them eat excrement...
- Medical experimentation on children as young as five (without consent or parental knowledge), causing illness and deaths, including:
  - receiving injections of penicillin and tuberculosis toxins, and other experimental drugs,
  - deliberate exposure to communicable diseases, especially tuberculosis...
- Deliberately contaminating children with tuberculosis and other infectious diseases by forcing them to sleep with others who were infected, in unventilated, locked dormitories, and by forcing them to eat fetid and contaminated food; and concealing their resulting deaths from their parents through cover stories and false death records...
• Denying medical care and attention of any kind to sick and dying children, made ill by bad food and other deliberate practices by staff, and refusing to notify doctors and police officials of these sick and injured children, causing deaths which were then concealed from their parents and falsified on school, government and mortuary records...

• As a matter of policy and standard practice, forcing children as young as three to live in and be confined to permanently sub-standard, unsafe and unhealthy conditions, in school dormitories and hospital wards lacking heat, sanitation and ventilation which were prone to fires, causing illnesses and deaths...

• Continuing to medically experiment on aboriginal people without their informed consent by indiscriminately forcing on them vaccinations, sterilizing agents and other lethal substances, under the guise of public health program. (The Truth Commission into Genocide in Canada, 2001)

Historical documents demonstrate the Canadian government's genocidal intent within this operation. Shockingly, the first use of the term “Final Solution” was not among Nazis in the 1942 Wannsee Conference. According to the DIA Archives, it was coined by Canadian Indian Affairs Superintendent Duncan Campbell Scott in 1910 in a response to Dr. Bryce's concern about the high mortality in residential schools:

It is readily acknowledged that Indian children lose their natural resistance to illness by habitating so closely in these schools, and that they die at a much higher rate than in their villages. But this alone does not justify a change in the policy of this Department, which is geared towards the final solution of our Indian Problem. (Department of Indian Affairs Superintendent D.C. Scott to B.C. Indian Agent-General Major D. McKay, DIA Archives, RG 10 series Cited in The Truth Commission into Genocide in Canada, 2001).

Perhaps the clearest example of Type III pathogenocide was the Hitler's Ghettoization campaign in World War II Europe. Under the Nazi regime, the German medical community was complicit in infectious genocide early in the holocaust. Browning (1988) contends that the initial rationale for ghettoization of German and Polish Jews, and ultimately for their elimination was largely fear of their own contamination from diseases thought to be endemic to the Jews. Nazi rhetoric centered not only on the inferiority, but also the infectiousness of Jews,
especially for spotted fever (exanthematic typhus) transmitted by body lice. Wetzel and Hecht, the party’s public health officers in 1939, initially concerned themselves with protection of the Reich from disease, offering only “indifference to the hygienic fate of the Jews”. Browning uncovered detailed memoranda from the late 1930s, depicting the development of Nazi public health policy moving from indifference to the Final Solution within a few years.

The widespread fear among German health professionals that the Jewish environment threatened the Reich led directly to the Ghettoization policies, and is also evident in the ritual group showers in the death camps. Signs posted in these showers included rhetoric of “lice kills”, adding to the charade that gas chambers were actually going to dispense bathwater. The German officials’ fear of typhus and other epidemics was well-founded, but not because of any natural Jewish susceptibility to infection. Rather, the crowded, malnourished, and unhygienic conditions of both ghettos and camps became a self-fulfilling prophecy. Hundreds of thousands of prisoners died of infectious disease (Browning 1988).

There is no evidence that the Nazis’ initial ghettoization policy intended to eliminate the Jews (this only emerged, according to Browning, after the Final Solution was introduced). Deaths that occurred in the ghettos and later, in the camps, from infectious disease were value added, unintentional, and welcomed result of an environmental structure incompatible with good health. Raul Hilberg,
author of the most complete study of the Nazi’s Final Solution, *The Destruction of the European Jews*, contends that Jewish deaths outside the concentration camps during the Holocaust comprised one-third of the approximately six million total Jewish genocide victims (Cited in Stannard, 2001). Of those two million, half are attributed to “ghettoization and general privation”. Stannard also cites statistics from infectious disease deaths inside the camps:

...As one recent account, published by the United States Holocaust Memorial Museum and focused on Auschwitz-Birkenau, notes: Epidemics of lice, typhus, dysentery, and common phlegmon, particularly in Birkenau, resulted in skyrocketing mortality rates in the period from July 1942 (when, under pressure of the Final Solution, the population of the camps had begun to climb sharply) to March 1943; according to available data, they ranged from 19 percent to 25 percent per month.

A death rate of between 19 percent and 25 percent per month, of course, translates into a projected annual mortality rate of between 228 percent and 300 percent. That means the equivalent of the entire camp population was at this time dying from disease every four to five months (Stannard, 2001).

In Buchenwald, fully 55,000 of the 239,000 camp deaths (nearly ¼) were disease- and malnutrition-related (Stannard, 2001). Exposure to Nazi structural conditions served as an equally potent cause of death as the infamous gas showers and crematoria.

**Type IV: Neglect**

If the above three types are determined to be reasonable proposals, may we extend *pathogenocidal* culpability to perpetrators of low intent and low activity? A type IV *pathogenocide* might manifest as a failure to intervene in a large-scale destruction of a people group. A prototypical example of this is when a capable, resource-rich actor allows preventable or treatable infectious diseases
to kill a large population. This final *pathogenocide* class is the most difficult to substantiate, but carries the greatest implications for resource-rich, western democratic societies. Low in specific genocidal intent and low in perpetration of pathogenic acts, Type IV actors may not directly contribute to the structural conditions that perpetrate the destruction, but they do not actively intervene given their capacity for assistance. These capable actors, who may include states, corporations, and perhaps even large religious institutions, have consistently failed to intervene during infectious pandemics in the resource-poor settings.

Of the prevalent causes of death in the world’s poorest regions, most are infectious diseases: AIDS, tuberculosis, malaria, and the so-called forgotten diseases like leishmaniasis, parasite infections, perinatal infections, malnutrition-related diseases which kill millions upon millions of civilians in low-income countries. The case for *pathogenocide* by neglect could be made for any number of communicable agents destroying resource-poor populations. The big three, AIDS, TB and malaria are all preventable and treatable diseases in rich nations, but the complex politics of foreign aid keep the necessary interventions away from those who need it most. Development of basic health infrastructure in low- and middle-income countries is hampered by foreign debt and internal corruption, while rich countries enjoy near-universal health care and government safety nets for their own poor. Paul Farmer calls these factors “Pathologies of Power”, and contends that structural violence acting on gender, race and ethnicity, and other
axes of oppression perpetuate the cycle of infectious disease mortality in poor countries (Farmer, 2005).

Mark Duffield described a state of “functional famine” where states and intrastate conflict actors perpetuate the starvation of its citizens, literally and figuratively, in order to retain power. Duffield cites the outdated nature of a world regulatory system erected around ideas of nation-state sovereignty as the mainstay of this condition, especially in Africa. His solution is a new international framework which can intervene in cases like Sudan and Somalia (Duffield 1991). Whether political, economic, or simple neglect, non-intervention by capable actors, be they multi-national organizations, states, or private enterprises, are justified by a lengthy list of excuses. The non-intervening actors may not have intended or acted upon the pathogenic environment, but I contend that they are still responsible for the millions of victims, under the spirit (if not the letter) of the Genocide Convention which states that “complicity in genocide is punishable under Article III.

The leap from Type I to Type IV pathogenocide requires careful consideration of motive, national sovereignty, and debatable criteria for classifying genocide. Objections to the acceptance of neglect as true genocide center on the previously discussed centrality of intent. An institution or state morally charged with the care of a population, like a parent with a child, might
plead innocent to accusations of criminal neglect in the absence of malicious intent.

If accepted as valid, Type IV *pathogenocides* can be seen in progress throughout the world. Whether marked by intentional neglect, or neglectful intent, resource-rich nations ignore the continued widespread death and destruction occurring in resource-poor regions from preventable causes. Those who go so far as to argue against poverty-reduction interventions to allow diseases to thin the global herd in a neo-Darwinian light should indeed qualify as *genocidaires*.

Conclusions, Limitations, and Implications

The *pathogenocide* framework carries a number of implications for scholarship, policy, and cross-cultural human rights. First, identifying infectious disease tactics in genocidal contexts can help monitor emerging genocides and work to cut off *genocidaires’* access to pathogens before great damage can be inflicted. Our culture’s current obsession with the threat of biological warfare may also benefit from careful study of past and present use of pathogens as weapons. Technology, which has protected us from a large number of infectious diseases, is now also to blame for the potential ease of infection by the new *genocidaires*.

Despite a compelling case for the inclusion of global neglect of infectious diseases as genocide, I believe the resource-rich developed world will not soon adopt this perspective for fear of self-incrimination. Admitting complicity in
genocide is akin to admitting a great moral failure. When Rabbi Lemkin petitioned his contemporaries to adopt a prohibition against genocide, he found consensus in idea, but not in action. Human rights-based approaches to health access and the emerging health for all campaigns assume that global governance institutions are committed to ensuring the best possible preventative and curative services for every human. However, tangible efforts to end poverty, treat disease, and halt pandemics do not corroborate commitment to this principle.

A prohibition regime outlawing all pathogenocides would require health as a human right to become the normative global framework in practice, not simply in policy. The world’s ultimate acknowledgement, as with human slavery, that mass death of the poor through preventable infectious disease will not be tolerated, might finally be achieved through a critical mass of states intervening or refusing to overlook the infectious disease needs of the poor. If state sovereignty is the restrictive factor in the reluctance to intervene, what will it take to finally enforce the global intolerance for a state killing its own people, or allowing them to die needlessly from neglect, structure, convenience, or assault?

Pathogenocide is not a new or infrequent practice, but it is evolving; its study must likewise evolve. Comparing the relative lethality of various genocidal means, especially pathogenocidal methods, would allow for a quantitative analysis that would help identify and deal with potential pathogenocidic trajectories. Further research might also identify culpable non-actors in past
genocides to help solidify the suitability of responsibility in negligent pathogenocides. Finally, the innovative researcher might integrate non-communicable disease into the pathogenocide framework.

Public Health is not the only framework by which intentional, destructive infection may be considered, but epidemiology benefits from a long history of relating host, agent, and environment to patterns of infections. Medical sciences share a common desire to fight disease, and Pathogenocide might be the best way to study the fighting of each other with disease.
References:


http://canadiangenocide.nativeweb.org/mort_rate_index.html


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