

Eugenics, Admixture, and Multiculturalism in Twentieth-Century Northern Sweden: Contesting Disability and Sámi Genocide

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Abstract: This article examines twentieth-century northern Swedish geographical isolate studies in Norrbotten Province involving Torne-Finns and northern Sámi, who have historically shared pronatalist Laestadian religious beliefs pathologized by mainstream eugenicists. Deemed a sign of religious fanaticism, Laestadianism was associated with the eugenic stigmatization of Torne-Finns and Sámi people and beliefs were conceptualized as an early sign of schizophrenia. Geneticists, as an outgrowth of early twentieth-century eugenics, structured schizophrenia as a genetic disease caused by first-cousin marriage. These consanguineous marriages that were reported as prevalent in Tornedalian and Sámi reindeer-herding communities practicing Laestadianism, legitimated race-based sterilization of psychitrized Torne-Finn and Sámi women. Similarly, the Swedish State Institute for Race Biology, established in 1922 by Herman Lundborg, advanced reorganizing race along family lines and populations, which supported gendered disability and Sámi genocide. Torne-Finn, as well as Sámi, religious minority women, who were sterilized at first admission to psychiatric facilities, require redress for colonial violence. Current academic and direct-to-consumer admixture research on Finnish and Sámi peoples is recognized as upholding colonial logics of difference in Swedish multicultural policies. This, in turn, results in ongoing gendered genocide. It is concluded that in a radical break from eugenic theories, major psychoses associated with common infections lie in the neglected half of the human genome rather than according to classical genetic rules.

Keywords: eugenics, race, Nordic colonialism, Laestadianism, Sámi, admixture, genocide

Introduction

A shift from the early twentieth-century eugenic study of Sámi and Finnish people in Nordic countries to the promotion of multiculturalism values through the molecular study of difference among descendants in North America is consistent with a movement to diversify scientific research. Embedded in current academic and direct-to-consumer genetic studies, however, is the concept of “biological race,” endorsed by Herman Lundborg, the founder of the Swedish State Institute for Race Biology, established in 1922.¹ Using homogenous national categories, which have long been discredited, Lundborg charted racial difference in Sápmi (formerly known as Lapland) on the Swedish side in Norrbotten Province. A patriarchal and ableist race research paradigm informed by Mendelian laws of inheritance conceptualized Swedes as universally light, healthy, and cultured, while the Sámi, as Europe’s Indigenous people, were stereotyped as an Eastern “dark race” susceptible to physical and psychological degeneration.² Torne-Finns, othered as “not-quite-White,” reflected nation-state models of governance after political borders were drawn in 1809 along the Tornio River when Sweden ceded Finland to Russia.³ According to Anssi Saura, Lundborg rationalized that “genetic chaos” caused by so-called racial mixing increased polygenic

diseases.⁴ The psychiatrist and eugenicist studying racial mixing among the Sámi, Finns, and Swedes was convinced that genetics was behind social changes during a new era of industrialization in Sweden.⁵

Lundborg hypothesized that “recombinations of genetic structure” triggered bodily changes and illness in evolving colonial discourse on race assessed from paternal lineages.⁶ His research and his colleague psychiatrist Torsten Sjögren’s study of intellectual disability and psychosis laid the groundwork for introducing new research on longitudinal schizophrenia. In research published in English in 1935, Sjögren assessed a geographically isolated population on an island off the West Coast of Sweden with a reported high frequency of consanguineous marriages.⁷ He worked closely with Ernst Rüdin, founder of the racial hygiene movement and psychiatric genetics in Germany.⁸ As director of the German Research Institute for Psychiatry in Munich after the death of the patriarch of psychiatry, Emil Kraepelin, Rüdin trained Sjögren, Lundborg, and others in his pioneering psychiatric genealogy method.⁹

During the interwar years, preventing the spread of ideologically constructed racial genes caused by racial mixing was propagandized as safeguarding Nord-European Aryans from degeneration.¹⁰ The elevation of Whiteness as biologically superior led to the sterilization of over sixty thousand individuals from the 1930s to the 1970s, including Sámi and Tornedalian women.¹¹ In a paradigmatic shift, statistical population genetic versus physical anthropometric race mapping began in a dedicated program after Lundborg’s retirement. In the journal *Nature* in 1945, his successor, Gunnar Dahlberg, posited that “genotypical asymmetries” or genetic variances were foundational to personality change caused by “inbreeding isolates.”¹² Dahlberg validated his assistant Jan Arden Böök’s claim that consanguinity among Torne-Finns elevated their risk for schizophrenia on a continuum with low intelligence that deviated from the national average.

This article considers the intersection of gender, race, religion, and disability in evolving geographical isolate research involving Torne-Finns and northern Sámi, many of them adherents of the pronatalist mission religion Laestadianism. Northernmost Sweden, or Sápmi identified as a genetically distinct region, was considered ideal to map monogenetic diseases. In a decolonial feminist analysis, it is argued that colonial race, gender, and disability concepts coexist and are foundational to evolving Swedish geographical isolate research. Furthermore, schizophrenia and migration history studies restructuring race along family lines and populations in a patriarchal unit endorsed gendered genocide. Reprocessing race in national rhetoric of types and hierarchies exposed Torne-Finn women, perceived as reproducers of cognitive disability, and Sámi women to race-based sterilization. Reform eugenicists justified eugenic sterilization of religious minority women on medical grounds.

Also, Sámi genocide continues to be sanctioned through multicultural policies identifying northern Sámi as a minority group. In addition, current direct-to-consumer and academic admixture studies on assimilated Sámi and Finns reinscribe race through tracking so-called racial mixing between northern populations and psychiatric risk. Geneticists studying shifting patterns of genetic ancestry among previously isolated populations test for associations with disease phenotypes.¹³ An innovative biocultural model of psychosis informed by human endogenous retroviruses (HERVs) comprising 8 percent of the human genome, subsequently, is introduced in a reconstruction effort. A post-genomic framework supports the type-w family of genetic viruses that generate genomic change through environmental interaction, setting up risk for psychosis and related illness.

To map out before moving ahead, schizophrenia studies by reform eugenicist Böök, first published in 1953, focused on Tornedalians' living in Junosuando, Muonionalusta, and Pajala in Norrbotten Province. Aided by Nils Sahlström, the director of an asylum first opened in 1893 in Furunäset, outside of Piteå, his early research surveyed medical records from psychiatric centers for a genealogic, longitudinal, and cross-sectional genetic analysis of schizophrenia. Böök rationalized that schizophrenia was a single genetic disease entity caused by first-cousin or consanguineous marriages. His hypothesis was expanded by PhD student Krystyna Modrzewska after Böök took over the administration of the Institute for Race Biology in 1959, following Dahllberg's death. Modrzewska, Böök's student studied the Melgiew Parish as a biological isolate in Poland, before the Nazi invasion of the country.¹⁴ She sought to prove a relationship between fertility, schizophrenia, and intellectual disability among Torne-Finns with the advent of community-based care in the 1970s.¹⁵ Böök's theory that "one major genetic factor" caused schizophrenia as a result of so-called inbreeding was foundational to her research.¹⁶

Böök's team was aware that many of their research subjects were adherents of Laestadianism, an influential nineteenth-century revival movement that swept across Sápmi, first along reindeer migration routes. For context, in 1852, Sámi people in Sápmi on the Norwegian side were ostracized for ecstatic religious experience and eugenically stigmatized after a political rebellion. I argue elsewhere that Sámi Laestadians stereotyped as predisposed to psychosis was predated by evolving blood theories devised by the Swedish and Sámi founder of the Laestadian movement.¹⁷ Böök, like mainline eugenicists, maligned Laestadian beliefs by misappropriating Lihkadus or the practice of religious ecstasy, perceived by adherents as an outward sign of grace, as a symptom of illness.¹⁸ Lars Beckman, trained at Uppsala University where the institute was integrated in 1959, assisted in the pathologization of Torne-Finns. He tracked consanguinity rates in Sápmi, which supported schizophrenia traits clustered in descendants from Western Finland. Beckman was dedicated to tracking admixture patterns related to the migration of northernmost peoples. In serological studies on the Sámi, reindeer herders granted status by the state were identified as "authentic," reprocessing Lundborg's race biological views. Beckman recategorized northern Sámi as European, but they remained othered as non-White interlopers in Sámi lands.

Describing the Sámi as "inbred" like Torne-Finns, Beckman promoted cultural genocide targeting Sámi women. Being identified as susceptible to manic depression (now known as bipolar disorder) by Böök circuitously exposed Sámi women to sterilization or biological genocide on the group level. In the post-genomic era, psychosis is understood as dependent on typically dormant HERVs, "neither viral nor physiological genes," which are capable of being reactivated and modifying genome structure.¹⁹ In a chainlike fashion, maternal and childhood common infections, such as influenza A, and other stresses including malnutrition set up risk for inflammatory psychosis and related illness (e.g., diabetes). An emergent understanding of genetic, infectious, and neuroinflammatory features of major psychoses provides a new lens to assess the transcolonial and transhistorical development of eugenics. Also, it redresses sterilization abuse involving Laestadian women.

Critically Focused Sámi and Race Research

Notably, a community-based investigation into Lundborg's relationship with the Swedish church for the 2016 White Paper Project. Journalist Maja Hagerman identifies the mainstream church as a co-

conspirator in early twentieth-century eugenic research and practices contested by the Sámi in Truth and Reconciliation Commission (TRC) processes.²⁰ An inquiry of Torne-Finn experiences of eugenics led by historian Curt Persson exposes clerics who assisted in interpreting parish records and ordered individuals to comply with Lundborg's investigations, similar to the Sámi.²¹

From a Sámi perspective, genealogist Agneta Silversparf argues that historical legislation rooted in race classification schemes sanctioned by the state restricting Sámi status to male northern reindeer herders amounts to ethnic cleansing.²² Sámi scholar Rauna Kuokkanen contends that a sex-based division of labor in reindeer husbandry in Sámi communities tied Sámi status to private property.²³ She underscores that coexisting personal autonomy and self-determination can protect Sámi women from violent nationalism. Kuokkanen is one of a few scholars to address Laestadian women's vulnerability to gender-based abuse across Sápmi.²⁴ She recognizes that Sámi-Laestadian women remain silenced from speaking against gendered violence, such as sterilization abuse, because of imposed standards of "proper female behavior."²⁵ Furthermore, she notes that Western genetic research is colonizing.²⁶

Historians Marius Turda and Maria Sophia Quine explain that race—like gender, religion, and language—imparts meaning to identity "on the basis of its own social, cultural, historical, and political interests."²⁷ This article addresses a gap in knowledge on reform eugenics involving the psychiatrization of Torne-Finns and Sámi from critical Indigenous and Western perspectives. I am a secularized member of Firstborn Laestadianism, which initially spread among Sámi people.²⁸ This article from an insider standpoint aims to make visible the sterilization abuse of the counter-cultural religious minority in Sweden, as well as wide-community eugenic stigmatization. It provides a nuanced culturally informed analysis on colonialism and gendered genocide targeting Nordic-Arctic peoples.

Gender, Race, and Sterilization Abuse

According to Turda and Quine, in the nineteenth century the concept of "biological race" was inseparable from the nation and physical character was assigned to territories.²⁹ In the early twentieth century in the Nordic context, Lundborg associated the degeneration of Sweden's "gene pool" with educated middle-class women's declining reproduction. White middle-class women were perceived as revitalizing national health and it was assumed that cities were decaying due to increased population mobility and racial mixing.³⁰ A member of the völkisch movement Nodischer Ring, along with colleague Jon Alfred Möjen in neighboring Norway, Lundborg promoted ideas of Nordic racial purity adopted by the Nazi movement. A "Nordic psychology" informed SS literature and notions of sustaining the peasantry in Germany.³¹

Lundborg devised an elaborate photo-documented dark-light binary classification system that standardized Swedes as physically, morally, and psychologically healthy, while Sámi people were exoticized as primitive, near the bottom of a racial hierarchy. Reindeer-herding men, as the archetype of Sáminess and perceived as Mongolian, were deemed incapable of fully developing a personality conflated with national identity. Consistent with Möjen, admixed Sámi were assumed to be vulnerable to degeneration, negating any biological advantage of races elevated in his hierarchy.³² Conspicuously, although Lundborg constructed non-White and not-quite-White identities as inferior on a sliding scale, he rejected Möjen's use of blood

metaphors, rationalizing that intelligence and disease were directly inherited. He otherwise believed that alleged interbreeding led to changes in a person's genetic structure.³³

Lundborg hypothesized that racial mixing triggered race-specific traits to recombine in new ways, which caused unbalanced phenotypes, setting up future risk for hereditary diseases.³⁴ The conceptual development temporarily lent credibility to his work. The Swedish state, enforcing Christian marriage associated with agricultural settlement in the colonization of the North, arguably, contributed to fueling Lundborg's extensively recorded obsession over national health. The mainline eugenicist studied Sámi lineages of reindeer herders defended by Swedish authorities in reindeer-herding border disputes between 1905 and 1919 as Indigenous. He recategorized assimilated Sámi as Finnish based on changes to traditional occupation, conflating their identity with agriculturalist Finns who were also perceived as Eastern.³⁵ Lundborg's racial profiling of both Sámi and Finnish people coincided with state goals to secure borders and safeguard Swedish cultural homogeneity. Beginning in 1910, the Sámi and Roma were othered in census counts as "foreign tribes," supporting the segregation of nomadic peoples as a whole from Swedish society. In 1934, sixty-two Roma from Norway attempting to gain entry into Sweden were deported to Germany, and later, nearly everyone was murdered in concentration camps.³⁶

Sjögren, who was a part of the Swedish eugenic network also promoting Nazi ideals in Swedish medicine through his affiliation with Rüdín's Munich school, attempted to establish that low intelligence was associated with racial characteristics. In the first dedicated theoretical psychiatric experiments in Sweden, he applied Rüdín's genealogical method and Wilhelm Weinberg's statistical method on heredity in an attempt to prove that behavior was genetically fixed. Weinberg's methodology rooted in Gregor Mendel's segregation law predicted that alleles from both parents were inherited in offspring and the method was suitable for research on small families.

Sjögren published a trial on paternal family lineages of heterosexual monogamous married couples in 1935 in English, mapping intellectual disability and psychosis in a northern isolate on an island off the West Coast of Sweden. He estimated that in a single-family complex, fourteen per one thousand people suffered from Oligophrenia, described as underdeveloped intellect. Seven per one thousand were perceived as presenting with psychosis, core to schizophrenia and related conditions. Formerly attributed to racial mixing, low intelligence was updated in the research as caused by so-called inbreeding, integrating Dahlberg's methodology with low to high grades existing on a continuum with psychosis. Sjögren concluded that a recessive gene caused low intelligence in males. However, a survey of 173 family lines did not verify that a race autosomal gene was involved in the assumed heritable diseases.³⁷ Nonetheless, geographical isolates were believed to be offering viable material to study subjectively defined qualitative behavioral traits, which enabled Nazi-style racial hygiene to develop in Sweden.

Rüdín, who trained Sjögren and others to conduct systematic family studies using statistical analysis, assisted in the development and implementation of the 1933 Nazi sterilization law in Germany. The Nazi psychiatrist provided medical rationale that schizophrenia was a Mendelian disease mitigating sterilizing and killing institutionalized individuals in a pioneering program before the Holocaust.³⁸ Rüdín used the brains of victims in other human experiments. Furthermore, he played a role in the mass murder of Jews, Roma, Sinti, and additional othered groups.³⁹ In Sweden sterilization abuse initiated in 1906, was eventually directed at people diagnosed with an intellectual disability or schizophrenia for eugenic reasons,

and was rebranded as a medical procedure in the 1950s in expanded applications.⁴⁰ Sterilization was finally investigated as a race-targeted issue among the Swedish Roma, as captured in *The Dark Unknown History: White Paper on Abuses and Rights Violations against Roma in the 20th Century*.

Böök and his colleagues provided rationalization for the targeted sterilization of Torne-Finn women with schizophrenia and forced abortions at their first admission to hospitals. The disclosure of routine sterilization buried in medical papers warrants a community-based probe, especially in light of Persson's finding that, up to the 1960s, teachers collected racist anthropometric data on Finnish children in boarding schools.⁴¹ An inquiry with Laestadian community participation is needed to determine the extent of eugenic surgeries and abortions performed on women at the Furunäset asylum operating from 1893 to 1987, in Piteå, in particular. Human rights violations and potential long-term traumas affecting Laestadian women who were silenced in colonial processes deserve investigation as part of the TRC processes initiated in 2020.

Furunäset is criticized for state-sanctioned control of patients through isolation in cells, long baths, electric shock, insulin therapy, lobotomy, strict mealtime, and work programming.⁴² While no explicit information is currently available on sterilization practices, official records corroborate that Tornedalians diagnosed with psychiatric illness were exposed to routine invasive surgeries.⁴³ Böök documented that even a derogatorily referenced "imbecile woman" was sterilized before being allowed to marry, confirming that Norrbotten residents denounced as unintelligent were among those exposed to state-sanctioned gendered violence.⁴⁴

Böök contributed to a range of controversial psychiatric practices tracking over one hundred Tornedalians identified as receiving shock, insulin, or lobotomy treatment alone or in combination.⁴⁵ His early research surveyed medical records at several psychiatric facilities for a combined genealogic, longitudinal, and cross-sectional genetic analysis of schizophrenia aided by the director of Furunäset, Sahlström, who was also a member of the Norrbotten area council. Böök assessed "all neuropsychiatric subjects who had been ill and who were living and residing in the area on September 1, 1949."⁴⁶

Similar to Lundborg's anthropometric studies, pictures were taken of anyone admitted to a hospital or institution. They were filed at the Institute for Race Biology. In his initial study, Böök described two women diagnosed with manic depression—which was thought to be more common than schizophrenia among the Sámi admitted to the state hospital in 1920 and 1939—as "pure Lapps," revealing his eugenic ideological leanings.⁴⁷ One of the women died and was buried on the hospital grounds in Piteå, implicating twentieth-century colonial medicine in the segregation, displacement, and destruction of Sámi people.

In the case of Torne-Finns, medical, government, and religious authorities must be held accountable. As exposed by Hagerman explicitly, Lundborg likewise collaborated with church and community leaders to collect his racist data.⁴⁸ We learn from Böök, in addition to Sahlström's assistance, Reverend Oskar Haapaniemi, from a parish in Pajala, was one of three clerics who contributed to schizophrenia research by interviewing families.⁴⁹ Male clerics were instrumental in gaining access to women subjugated under their authority and banned from using contraception in nineteenth-century positive eugenic norms in the Laestadian movement. Böök and his colleagues failed to account for potential compound trauma and relied on male spiritual authorities to access parishioners, which legitimated the sterilization of women duty bound to grow the church and idealized as mothers. Additionally, European scientists pathologized Sámi Laestadians as predisposed to psychosis after the Kautokeino uprising. Laestadius, who was educated at Uppsala University

and appointed deacon of Pajala parish in 1848, claimed that Sámi women were prone to nervousness or hysteria, a medical label applied extensively to females; regulating passions or emotions was expected to cure this ailment.⁵⁰

Reform Eugenics and Schizophrenia

In the mid-twentieth century, the stigmatization of Sámi Laestadians in Norway as “religiously insane,” pro-birth Laestadian beliefs, and geographical isolation primed Torne-Finns living in Norrbotten Province to be exploited as experimental subjects.⁵¹ Prompted by the influx of refugees from Finland, among other countries, to Sweden, reform eugenic research sought to concretely link psychiatric illness to immigration after the war.⁵² Finalizing a paradigmatic shift from mainline eugenics initiated by Dahlberg, Böök validated Sjögren’s hypothesis that inbreeding caused detrimental recessive defects.⁵³ However, average intelligence defined by capacity to work was placed on a continuum with psychosis. Incorporating market values central to Sámi assimilation policies reveals that disability was inextricably linked to race and gender. Dahlberg was one of several intellectuals denouncing race in “the race question” spearheaded by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 1950 in Paris, France. The document outlines:

National, religious, geographic, linguistic and cultural groups do not necessarily coincide with racial groups: and the cultural traits of such groups have no demonstrated genetic connexion with racial traits.⁵⁴

Races reorganized into the categories Mongoloid, Negroid, and Caucasian were rebranded as ethnic groups in a social/cultural framework.

While ideas of innate, unequal mental capacity causing degeneration through racial mixing were condemned, many scientists continued to endorse race as a biological concept until the 1960s.⁵⁵ Böök argued that geographic isolation caused “differentiation between population groups” and “race mixture” increased with European colonization but produced no genetic disadvantage.⁵⁶ Relying on a revised Harvey-Weinberg equation, he credited higher than usual rates of schizophrenia on a “major simple dominant gene” surveyed exclusively among Torne-Finns, estimating that schizophrenia gene frequency was three times higher than in the general population.⁵⁷

The principle held that when mating is random in a large versus small population, both genotype and allele frequencies remain constant generation to generation. Dahlberg believed that schizophrenia advanced by a recessive gene in first-cousin marriages, reported higher among Torne-Finns than Swedes, could be prevented if constructed breeding isolates broke up.⁵⁸ After the 1960s, biological race was upheld by claims that genetic loading existed among populations where consanguinity was a cultural practice.

In the colonial project, Böök bracketed out environmental factors, asserting that “schizophrenia is caused primarily by major genetic differences.”⁵⁹ The possibility that external influences or multiple interacting genes could be involved was by and large disregarded.⁶⁰ After the 1950s, continuing to pursue ideas of genotypic homogeneity with Modrzewska, he claimed that a two-locus model aligned more closely with

genealogical data.⁶¹ In a biochemical analysis in 1977, he, with colleagues, argued that the prevalence of schizophrenia nearly doubled over twenty-five years.⁶² Defending schizophrenia was on the rise, resulting in higher demands on health and social systems. Furthermore, this resulted in expanded studies on fertility and the incidence of schizophrenia and investigations into intellectual disability and infant mortality in children of diagnosed parents. An article published in 1980 by Modrzewska, assessing the reduction of fertility among women, distinguished therapeutic sterilization and abortions, as a secondary cause.⁶³ She was aware of pronatalist beliefs among Laestadians, highlighting complex ethical issues associated with the reductionist genetic study of religious minority women in Sweden.

Ironically, in light of her Jewish identity, which led her to flee Nazi-occupied Poland, Modrzewska perpetuated views of schizophrenia as a progressive degenerative disease and social burden propagated by Rüdín that by 1941 led to the murder of 70,273 institutionalized people in Germany.⁶⁴ Dehumanizing gendered sterilization practices were perfected in concentration camps in experiments on “Jewesses” using X-ray technology.⁶⁵ The women were also later murdered, while sterilization was implemented as part of Nazi genocide and ethnic cleansing.

In 1982, single-gene models of schizophrenia were criticized for small population samples, the inclusion of ambiguous cases, and the prejudiced pathologization of parents.⁶⁶ Building on insights by feminist science studies scholar Angela Willey, evolving Swedish research, implicating first-cousin marriage as the cause of schizophrenia among residents in Junosuando, Muonionalusta, and Pajala, assumed that monogamy is inseparable from race as a “historic marker of European evolutionary superiority.”⁶⁷

Scrutinizing family structures among Laestadians, who observe marriage as heterosexual and monogamous, for disease patterns entrenched colonial male/female and ability/disability binaries internal to the race concept. Reformists framing historically racialized Laestadian bodies in a patriarchal unit as data devalued neurodiversity and enabled legitimizing the sterilization of Torne-Finn women. The abandonment of involuntary sterilization practices coincided with increased mobility within national borders in Sweden. Young people who left Sápmi for economic reasons were individually tracked in long-term follow-up upholding the status quo in research.⁶⁸

Racial Traits and Sámi Genocide

At a 1977 symposium, Beckman noted that northern Sweden is “characterized by a high degree of geographical isolation and inbreeding, which has had a profound effect on the distribution of genetic disease in the region.”⁶⁹ A study published in 2007, after Beckman’s death, by his colleagues expanded ongoing eugenical rhetoric, stating that 90 percent of the population in northern Sweden is inbred and genetically stable for research of complex diseases. The authors assume that a subset of isolates evolved as distinct groups suitable for linkage and association studies.⁷⁰ Earlier, Beckman assessed racial admixture informed by raw data used by Lundborg.⁷¹ Analogous to Lundborg, who studied epilepsy in a Swedish family line using a patrilineal system together with Sjögren and other reformists, Beckman assessed isolates that reprocessed colonial ideas of heredity.⁷² In a methodological update, “tribal relationships” were argued to be preserved after the admixture of the “original” group with neighboring populations.⁷³

Significantly, Beckman standardized Bööök's subjects as homogeneous using a 1 percent Europe-wide calculation of first-cousin marriages as a reference point, recording a consanguinity rate of 6.81 percent in Muonionalusta compared to 0.95 percent in Pajala at the opposite end of his statistical scale.⁷⁴ Correlating in marrying with genetic loading implicated schizophrenia developed variably within races, and exposed Finns in Muonionalusta were diagnosed with the highest number of cases linked to cultural practices. Confirming systematic bias in Beckman and his colleagues' research, however, a historical study on first-cousin marriage once common among White elites in Europe captures environmental influences that confound the health effects of consanguinity.⁷⁵ Current research shows that socioeconomic factors, malnutrition, infections, obstetric complications, multiple births, and age are involved in the development of major psychoses.⁷⁶

Serological studies on the Sámi have observed reindeer herders as "pure Lapp" and "half Lapp," the latter a category established after 1920 by the National Bureau of Statistics based on paternal racial origin.⁷⁷ Beckman maintained the derogatory "occupational-caste-designation of Lapp," like Bööök, identifying him as an apologist of the Swedish state.⁷⁸ Beckman established reindeer-herding Sámi carrying the A blood allele dominant in the West as "original settlers," positioning them as migrants like Torne-Finns. Swedes he romanticized as Indigenous to Europe marked by their center position in a geometrical spatial system.⁷⁹

Similar studies tracking B blood alleles among Finns attributed to assumed East Baltic race immigration reveal that the reform eugenicist reprocessed the Nordic myth of racial homogeneity recognized by Turda and Quine on the molecular level.⁸⁰ Beckman argued that in internal migration processes the "Nordic race" from Lule altered blood type distribution patterns in Sámi genotypes, comparable to Swedish Roma.⁸¹ The adapting methodological bordering of reindeer-herding Sámi as discrete deleterious gene pools influenced by genetic drift and bottleneck events implicitly reaffirmed Swedes as racially superior. The colonially created narrative indicating that northern Sámi were susceptible to psychosis was reprocessed by identifying consanguineous marriage as prevalent in reindeer-herding communities where Laestadianism continues to be practiced.

A national vision of Sápmi as underdeveloped continued to be projected onto Europe's Indigenous people by eugenicists, reinforcing state-mandated relinquishment of Sámi identity. Changing state legislation constructed Sáminess as a collective trait that entailed a process of exclusion, stripping away Sámi rights and status.⁸² Silversparf points out that the *Lappskall vara Lapp* (Sámi shall stay Sámi) policy undermined Sámi culture, which in 1901 entailed ending the recording of Sámi surnames in parish records in Sweden.⁸³ The state forced individuals to leave homelands and migrate. Others gave up reindeer herding to provide settlements for those who were displaced.

In 1917, Bill No. 169 excluded non-reindeer-herding Sámi from claiming legal status, and later, in 1928, reindeer husbandry became legislatively tied to identity. Silversparf details that through the acceleration of ethnic cleansing, authorities demanded the Sámi be active in the trade affiliated with a nomadic lifestyle. However, up until 1971, a gendered division of labor tied women's right to practice reindeer husbandry to marriage, creating unequal status loss among women.⁸⁴ Beckman contributed to gendered genocide against Sámi people by discounting sociopolitical formation of racial identity in support of government policies. He was part of a new eugenic network that endorsed nonlethal and fatal group eradication.

As reported by the United Nations, genocide entails intentionally imposing—on a national, ethnical, racial, or religious group—"conditions of life calculated to bring about its physical destruction in

whole or in part.”⁸⁵ The Convention on the Prevention and Punishment of the Crime of Genocide (Genocide Convention) and human rights frameworks, however, are criticized for failing to address the impacts of colonialism on world Indigenous cultural values and practices.⁸⁶ Historically, the *siida* system, composed of family groups of reindeer owners with tribunals mediating subsistence and land disputes for sustainable reindeer husbandry, was an early model for self-determination in Sámi communities.⁸⁷ In the private sphere, reindeer-herding women held power, but patriarchal attitudes and laws disrupted community social relations.

In Norway, women were coerced to register under their husband’s names, which meant they also lost membership in the reindeer-herding organization. The fallout included a loss of subsidies to protect traditional livelihood, alongside identity subverted by disregarding women’s far-reaching role in Sámi society. In a multilayered process, assimilation of Sámi people into national economies was achieved through education and social welfare reforms that entailed forcing children to learn non-Sámi languages.⁸⁸ Kuokkanen clarifies that colonial governance continued to suppress Sámi female autonomy by elevating males as “the natural embodiment of the Sámi nation,” mirroring Nordic societies using racist stereotypes that silenced violence against women.⁸⁹ Moreover, internalized colonialism is behind sexual violence in Sámi cultures, suppressed as a result of shame, victim blaming, and failure to report crimes.⁹⁰

Missionization that began in the eleventh century undermined Sámi tradition, and by the nineteenth century, with the introduction of patriarchal Laestadian doctrine, talking about sexuality and sex was silenced.⁹¹ This assumedly encompasses sterilization abuse linked to Sámi cultural genocide, meeting the UN definition of genocide as a measure to prevent births in a group.⁹² Credibly, internalized heterosexism, racism, and ableism prevented Torne-Finn Laestadian women from openly sharing experiences of forced sterilization and abortion in Swedish psychiatry, as well as potential sexual exploitation by eugenicists and Nazis who occupied Laestadian areas between Pajala and Gällivare between 1930 and 1945 in Norrbotten Province.⁹³ Research by Hagerman uncovered that Lundborg concealed an affair and a son he had with a Finnish-Sámi woman constructed as racially inferior until after the death of his wife, affirming that sex and sexuality were blunt instruments of Swedish colonialism.⁹⁴

Identity, Disability Genocide, and Multiculturalism in Sweden

The body, and by extension genes as signifiers of Sámi identity conceptualized by eugenicists in the twentieth century, is discounted by both state politicians and Sámi cultural leaders. Sweden’s race research program not only failed to promote community autonomy as a Sámi research priority but also infringed on the right of northern women to security against any act of genocide.⁹⁵ This includes sexual exploitation and religious forms of reproductive control deeply seated in ableist eugenic values. In ongoing colonization, despite the Sámi’s official recognition as Indigenous people under Swedish multiculturalism policy in 1977, in 2000, Sámi people were politicized as a minority group. Pushing back, Kuokkanen reminds us that the International Labor Organization (ILO) convention on Indigenous rights notes that individuals from populations of a country at the time of colonization retaining their own social, economic, cultural, and political institutions are Indigenous.⁹⁶

Also, individual and collective rights coexist and Indigenous people have distinct rights that support political and economic self-determination. Kuokkanen differentiates the Sámi, self-determining peoples who have a relationship to the land as a source of livelihood and philosophy, from groups narrowly demarcated

by language held up as a marker of cultural diversity. Language is defended as one dimension of Sámi culture that coexists with Sámi values, knowledge systems, and cognitive orientations tied to place.⁹⁷ Established criteria distinguish the Sámi from ethnic minorities.

Approximately thirty thousand Torne-Finns were granted minority status in 2000, along with the Sámi, Sverigefinnar, Roma, and Jews, based on the locally developing language Meänkieli.⁹⁸ With rising nationalism to promote Swedish cultural homogeneity, from the 1880s until the 1950s, Tornedalians were banned from speaking the local dialect. Paradoxically, in the nineteenth century, Laestadius was instrumental in preserving local Sámi and Finnish languages when instituting the first boarding schools segregating Sámi people. He used mission schools to preach a self-styled doctrine informed by Sámi mythology that altered Sámi social relations after regular classroom instruction, which became a template for formal church meetings.

Although Laestadius proselytized in both Sámi and Finnish/Meänkieli, Finnish was elevated as a sacred language contributing to the formation of national Laestadian identity in eastern and southern Tornedalen.⁹⁹ An East (Finnish) and West (Sámi) split in Laestadianism after the death of the founder's partner, Juhani Raattamaa, in 1899 was instigated by racial and class conflicts over Sámi leadership. The Western branch, known as the Firstborn sect, practiced by the Sámi established in the United States, and later in Canada by Laestadian immigrants, defended the spiritual significance of Laestadianism that originated in Sápmi. Clerics associated with the dominant church, however, criticized the Sámi as untrained dissenters from the mainstream church and a threat to the nation, which culminated in a loss of collective memory among North American Firstborns in colonial-settler erasure.¹⁰⁰

In the early twentieth century, Sámi boarding schools were opportune sites for Lundborg to conduct racist research, causing intergenerational traumas to be taken up by the Sámi in TRC processes. In Finnish schools, Lundborg and, subsequently, teachers anthropometrically measured Torne-Finn children.¹⁰¹ Böök also sent a questionnaire to all schools in the areas where study subjects resided, asking teachers for information on "abnormal behavior," subjective judgments on intellectual capacity, and noticeable physical defects among students.¹⁰² He further scrutinized medical and military records and social registers in Pajala. Disability as a genocidal marker culminated in Torne-Finns being deemed unassimilable, segregated in psychiatric institutions, and surgically prevented from reproducing despite identified pronatalist beliefs.

Genocide against Finnish Laestadians is erased in Swedish history, in part because ethnicity was not recorded in official records. Disabled people were also stigmatized as unproductive citizens as reflected in the 1948 Genocide Convention which omitted disability as a category. As a group, disabled people were not legally defined and protected in international instruments until 2006 with the adoption of the United Nations Convention on the Rights of Persons with Disabilities. Disability was finally placed "in the pantheon of fundamentally persecuted world constituencies," formally opening up space for activists to promote rights and alternative narratives of physical and cognitive disabilities within the Western philosophical tradition.¹⁰³

In multicultural Sweden, authorities repackaged medical services as protecting cultural differences by erasing inequalities.¹⁰⁴ In 1975, coerced sterilization was banned, long after Böök introduced preventive family planning services.¹⁰⁵ A social shift prompted by the popularization of international human rights, slowed population growth, new medications, and high costs of running institutions like Furunäset nurtured the development of community services in local partnerships beginning in the 1970s.¹⁰⁶ The concept of normalization first articulated by Bengt Nirje guided medical, psychological, and social projects

endorsing self-determination in the lives of cognitively disabled individuals.¹⁰⁷ As in other multicultural experiments, however, Eurocentrism was disguised behind the language of universalism and other terminology.¹⁰⁸ Equality and diversity, standardized as universal democratic principles, tacitly sanctioned pathologization of Sweden's northern religious minorities and gendered genocide.

Integration replaced strategies of segregation and assimilation undermining Finnish and Sámi cultures. Integration, as a concept abstractly absorbing groups versus individuals into the political body, was expected to curtail radicalization, out-migration that enabled racial mixing, and so-called spiritual death associated with dominant religious beliefs.¹⁰⁹ Finnish and Sámi-Laestadian women are still to be recompensed despite the fact that mass sterilization was uncovered in the late 1990s. This exposes the failure of the current establishment to address gendered racism, ableism, and minority religious intolerance.

Transnational Eugenics and HERV-W

It is now generally recognized that “when medical and scientific communities praise genetics as a revolutionary new tool to cure or eliminate disability,” disabled people hear an “aggressive lyric.”¹¹⁰ In North America in enduring eugenic processes, biological race is reproduced in “monitoring, measuring, and reporting that requires the use of forms of multicultural political classification.”¹¹¹ Commercial DNA testing services marketed to assimilated Sámi in Nordic communities in an ad-hoc repatriation project reconstruct race in revised national categories that assess health risks in group disease associations. Ancestry-Informative-Markers, or single-nucleotide polymorphisms, found in different frequencies across populations aligned with disease traits, however, are considered among unrelated consumers opting in for health predisposition and carrier status analysis in purchased ancestry testing.¹¹²

In the present era of genetic research, race remains demarcated as geographically and reproductively bordered populations, before large-scale “mixing.” Geneticists isolating genetic similarities across populations in Indigenous/non-Indigenous, male/female, health/illness, and core/periphery binaries repurpose eugenic concepts by inextricably linking national origins with disease. Gendered racial views of debility are embedded in easy to digest reports designed to be virtually shared with “genetic kin.”

As a special interest group for admixture mapping due to immigration of the Sámi to North America since the death of Laestadius in 1861, relatives of Nordic settlers are advertised in DNA ancestry testing by cultural organizations and buyers online in North American Sámi networks.¹¹³ In transcolonial processes, both Sámi and Finnish national identities are essentialized through the restructuring of a heteronormative and ableist vision of human history.¹¹⁴ FamilyTreeDNA, 23andMe, and others exploiting Sámi and Finnish genetic material sanction racist ideas that the Sámi are a distinct “subset of Europeans,” following Lundborg and Beckman.¹¹⁵

In social science research in the United States, northern Sámi are identified as running along a north-south gradient opposite southern or non-reindeer-herding Sámi in Sweden. It is alleged that assimilated Sámi are more Swedish than non-assimilated Sámi, relying on the race-based construction of identity allied with Sámi gendered genocide. The male N1c gene is traced to distinguish the Sámi from eastern Finns, argued to be distinct from Finnish people living in Western Finland. Sámi women identified

by U5b1b1 mtDNA were assumedly subverted through “blood mixing or mingling blood” in Nordic countries.¹¹⁶ This research contributes to the ongoing cultural negation of Sámi women across borders.

The Canada Research Chair in Indigenous Peoples, Technoscience & Environment at the University of Alberta, Kim Tallbear, explains that past language of blood mixing gave way to talk of genes and populations organized around the myth that Indigenous people are prone to dying out.¹¹⁷ She draws attention to the fact that genetic ancestry tests examine less than 1 percent of a person’s DNA. Further, they fail to recognize political and cultural dimensions of identity.¹¹⁸ From a Sámi perspective, Kuokkanen emphasizes that research on Sámi people must benefit their goals for autonomy and self-determination. She writes:

To paraphrase Native American scholars Duane Champagne and Jay Stauss ... in Sámi society we need researchers with analytical skills who study, among other things, Nordic-Sámi history and policy and who have an appreciation and understanding of Sámi self-governance models and culture to enable them to become critical, informed, and active participants in Sámi community life as well as in Sámi issues at the regional and national levels.¹¹⁹

She underscores that the commercialization and privatization of Indigenous knowledge, as well as the patenting of Indigenous DNA in applications that often use race as a category, are new forms of colonialism.¹²⁰ Understanding that “research is deeply implicated in the colonizing process of indigenous peoples,” settlers are reminded that research must evolve from Indigenous localities. Also, investigators must give back to Sámi communities.¹²¹ Sweden lags behind other countries, such as Canada, where academic researchers are “openly debating, developing and implementing ethical strategies specifically suited for indigenous research.”¹²² In Norway, the Sámi Parliament is criticized for failing to follow up on an official rejection of creating an Indigenous-focused research ethics framework.¹²³

In 2008, blood samples collected in the 1980s from Torne-Finns were used in genome-wide scans for schizophrenia genes by Lennart Wetterberg from the Karolinska Institutet.¹²⁴ Working with Böök’s team, the research defended Torne-Finn Laestadians as carriers of a dominant schizophrenia gene.¹²⁵ As in earlier studies, findings are contradicted by evidence showing that multiple genes confer a small increase in risk for developing major psychosis, which skews estimates. Furthermore, income inequality and discrimination play a role in mental health disparities, especially among women in northern Sweden.¹²⁶

In Sámi-focused health studies, colonialism is recognized as a causal factor in trauma and suicide among Sámi Laestadians in Sweden and Norway.¹²⁷ Laestadian healers assist in recovery from distress through religious readings in Sápmi on the Norwegian side.¹²⁸ Local healing practices expose Sámi and European ways of being and knowing as deeply entangled in Laestadianism, verifying that holistic and participatory approaches must be prioritized in psychiatric research involving northern residents.

In 2018, GlaxoSmithKline announced a three-hundred-million-dollar investment in 23andMe, securing a four-year deal to develop drugs using their databases and drawing crucial attention to the need for governing models to regulate commercial genetic testing, thereby averting ethics regulation.¹²⁹ Disabled people can help scientists, clinicians, and consumers to navigate complex ethical spaces shaping cross-cultural health knowledge production. Diverse voices in health policy development are essential to guard

against eugenic values and practices as well.¹³⁰ The COVID-19 pandemic has brought into sharp focus “professional prejudice” that requires a commitment to co-creation in mental health research and policy arenas.¹³¹

Turda and Quine verify that both genes and race acclimatized to changing social and political environments and newer research methods are perceived as neutral.¹³² Disabled people, Indigenous people eliminated physically and “definitionally” in science inequitably subjected to disabling health conditions, and other marginalized communities must be granted the authority and means to shape commercial, government, and academic genomic and post-genomic research.¹³³

As evidence of ideology driving the agenda of genetic testing companies, 23andMe assessed traits in genome-wide association studies (GWAS) using the DNA of about sixty thousand customers, as part of a Psychiatric Genomics Consortium. Selecting out environmental factors aided in reaffirming shared genetic loci that exist between personality traits and schizophrenia.¹³⁴ Sophisticated disease predictions in healthy people assessed from segregated, pooled DNA assumed that pathological and adaptive personality traits, IQ, and schizophrenia are related.¹³⁵ Another 23andMe study associated U and H mtDNA attributed to the genetic makeup of Sámi and Finnish women respectively with a variety of psychiatric conditions.¹³⁶

Scientifically challenging the validity of expanded sex-differentiated arguments, however, it is now understood that the human genome is composed of at least 50 percent of sequences representing remnants of mobile genetic elements (transposable elements and endogenous retroviruses). HERVs may still be expressed, transpose into cellular DNA, recombine, or influence immune genes through interaction with hormones, environmental infections, and other external factors that create susceptibility to major psychoses and other illnesses.¹³⁷ HERV-W is currently being investigated in relation to coronavirus (COVID-19) disease in light of reported neurological symptoms among some affected individuals. People diagnosed with schizophrenia are thought to be vulnerable to increased risk of COVID-19 morbidity and mortality.¹³⁸

In 2015, I outlined that stress, co-infections, and malnutrition act together to cause preeclampsia and produce phenotypes by activating HERV elements, which affect an embryo’s DNA structure through HERV-W coded enzymes.¹³⁹ HERV expression creates uncontrolled alteration of copies in embryonic cells and continues to respond to triggers later in life. In time and in age-dependent neurodevelopmental processes, inflammation and glial death occur in the brain-producing symptoms of psychosis. Worthwhile to mention, HERV-W is also influential in the development of diabetes, attributed to “race-crossing” by Möjen in the early twentieth century.¹⁴⁰

Current understanding that multiple organ systems are involved in the onset of psychosis alerts us to shift our focus to micro-mechanisms responding to environmental stressors, including emotional trauma related to colonialism, as part of a multisystem complex.¹⁴¹ This is justified since HERVs do not operate according to Mendelian rules and are involved in the molecular evolution of the genome. HERVs are subject to “intragenic dissemination through retrotransposition and recombination” and are epigenetically modifiable through mutual pathways in several diseases.¹⁴² In genetics and genomics, genes are assumed to be active agents that generate phenotypes.¹⁴³ The long-held dogma fueled the widespread misconception that large noncoding DNA is “junk” and irrelevant.

Post-genomics, psychiatric genetics pioneered at the clinic in Munich by Rüdín, is understood as not only ethically problematic but also scientifically indefensible. All the same, DNA databases continue to expand and are used to justify that genes predispose individuals to schizophrenia, raising critical concerns over the enduring geneticization of human experience. Conspicuously, racial categories in big data minimize complexity, essentially “freezing what may be fluid formations in the real world.”¹⁴⁴ Generalizing from small samples like Swedish geographic isolate studies may be advantageous for testing hypotheses; however, quantitative population data is easily manipulated for faulty policies and ideological goals.¹⁴⁵ Large-scale admixture mapping by 23andMe isolating closely related populations in disease studies alerts an ethical shift that is urgently needed in the adaptation of genetic knowledge.¹⁴⁶

Conclusion

This article has explored intersections between gender, race, religion, and disability in geographical isolate research shown to support gendered genocide against the Torne-Finn and northern Sámi in Norrbotten Province, Sweden. Swedish geneticists, building on the theories of mainline eugenicists, are confirmed to have restructured race as paternal family lineages and population delineated by political borders, in a medical turn. In the early 1950s, Böök first legitimated eugenic sterilization in a population-specific strategy to prevent schizophrenia among Tornedalers practicing first-cousin marriage in evolving psychiatric genetics studies. A conceptual shift in thinking on race that is inherently gendered and ableist assumed that “inbreeding” versus “interbreeding” caused cognitive disabilities among constructed not-quite-White Laestadians.

Along with his colleagues, Böök corroborated the validity of an “empirical hereditary diagnosis of mental illness” invented by Rüdín, a key contributor to the racial hygiene movement and genocide in Nazi Germany.¹⁴⁷ Expanding Lundborg’s race research, Böök and Beckman contributed to the gendered genocide of both Torne-Finns and northern Sámi. Beckman acknowledged reindeer herders as biologically homogenous Europeans and as “inbred” in updated admixture studies, discursively pathologizing the Sámi in historical continuity.

Schizophrenia studies, initially overseen by Dahlberg at the Institute for Race Biology, ethically conflicted with the pronatalist religious beliefs of Finnish Laestadians exposed to sterilization abuse. Respected male pastors and community leaders helped geneticists gain access to data and congregants for interviews. The collusion with reform eugenicists highlights the need for a culturally sensitive rights-based probe into twentieth-century mental health practices in Norrbotten Province in a community-based approach. Redressing schizophrenia field research and medical sterilization, through a formal process centering on structural changes in psychiatric genetics, is justified, given that medical and other reports implicate that the Sámi were also targeted in forced sterilization abuse on a group level.

Hagerman and Persson uncovered that Lundborg relied on community authorities to access othered Sápmi residents in his discredited research. Hagerman, although omitting to take into account local religious minority values in ongoing discussions, found that the mainline eugenicist took anthropometric photographs of naked Sámi women that would have been especially traumatizing for devout Laestadians.¹⁴⁸ Böök similarly took objectifying photographs of Torne-Finns diagnosed with schizophrenia for use as data

archived in Uppsala. In a repeat of past eugenic stigmatization, Laestadian beliefs were conflated with a psychiatric diagnosis in community-wide discrimination. Furthermore, two Sámi women died and were buried on Furunäset grounds, conceivably warranting identifying their remains for a burial ceremony honoring Sámi tradition, culture, and history.

More far reaching, Böök and his colleagues, exploiting Laestadian customs in experimental theorization on genetic predisposition in schizophrenia discriminatory intellectual ideas, were institutionalized through global research networks. This article supports continuity in the evolution of colonial eugenic research across borders in history. Current genetic admixture studies impose gender, race, and ability hierarchies in large-scale genetic and genome-wide association analyses that reconstruct the Sámi as a minority interest group stripped of Indigenous rights in enduring “ethnic cleansing.”

Sámi women in mtDNA studies categorized as genetic outliers are re-stigmatized as prone to psychiatric illness along with Finnish women, in general. Emergent post-genomic and other research demonstrates that social and physical environments play an essential role in shaping the genome, and an alternative framework to comprehend impairment in psychosis is presented. The outlined HERV-W research recognizing the genome as a malleable open system represents a radical departure from gene models for future elaboration. As a result of COVID-19, it has become apparent that global mental health with existing power structures and hierarchies maintaining the status quo is no longer sustainable.

Notes

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¹ Consumer genetic testing companies provide personalized genetic health and disease risk testing direct to paying customers without approval from a health-care provider. Companies interpret the data from a narrow biomedical perspective and this data is used for medical research.

² Kjellman and Eld, “Construction of Whiteness,” 119–22; Lundborg, “Racial Structure,” 129.

³ Heith, *Laestadius and Laestadianism*, 34.

⁴ Saura, “Tale of Two Papers,” 119–22.

⁵ Pietikainen, *Neurosis and Modernity*, 90, 92.

⁶ Lundborg, “Hybrid Types,” 274.

⁷ Sjögren, “Investigations of Heredity,” 252–318.

⁸ For a discussion on the interaction between eugenicists in Germany and Sweden, see Kühl, *For the Betterment of the Race*, chaps. 3, 5.

⁹ Zerbin-Rüdin and Kendler, “Ernst Rüdin,” 333.

¹⁰ Marius Turda and Maria Sophia Quine argue that Aryanism, popularized in the early twentieth century in a utopian national and political vision, existed in such countries as the United States, Sweden, Germany, Great Britain, and Croatia. German writers developed the concept of “Nordic race” as the highest standard of the Aryan physical and mental type. See Turda and Quine, *Historicizing Race*, 72, 82.

¹¹ Broberg and Roll-Hansen, “Preface to the 2005 Edition,” ix.

¹² Dahlberg, “Nature, Nurture and Probability,” 539. Dahlberg helped draft the 1935 sterilization law the year he took over operations at the Swedish State Institute for Race Biology after Lundborg retired. He believed sterilization (and abortion) could help prevent congenital malformations and highly transmissible diseases. See Roll-Hansen, “Geneticists and the Eugenics Movement,” 342.

¹³ Shriner, “Overview of Admixture Mapping,” 2.

¹⁴ To learn more about Modrzewska, visit “Krystyna Modrzewska (1919–2008) - English Version,” trans. Weronika Nowacka, Grodzka Gate—NN Theatre, accessed September 1, 2019, <http://teatrnn.pl/lexicon/articles/krystyna-modrzewska-1919-2008-english-version>.

¹⁵ Modrzewska, “Offspring of Schizophrenic Parents,” 191; Böök, “Genetic and Neuropsychiatric Investigation, Part II,” 356.

¹⁶ Böök, “Genetic and Neuropsychiatric Investigation,” 85, 51. Swedish state records from 1953 note that a total of fifty-one individuals living in the Norrbotten catchment area alone were sterilized. See the Royal Medical Board, *Public Health Care and Sick Care 1953*, 60.

¹⁷ Andresen, “Wake of the Kautokeino Event,” 131–32; Marttinen, “Scandinavian Anthropology,” 72, 74, 76.

¹⁸ Religious fanaticism associated with the eugenic stigmatization of Sámi people was conceptualized by Böök as an early sign of schizophrenia. He formally classed it as a symptom of schizoid personality, a theory developed by the eugenicist Ernst Kretschmer, linking personality traits to body type. For Böök’s schizophrenia classification system, see his “Genetic and Neuropsychiatric Investigation,” 38.

¹⁹ Kury et al., “Human Endogenous Retroviruses,” 379.

²⁰ Hagerman, “Svenska kyrkan,” 961–92.

²¹ Persson, “*Då var jag som en fånge*,” 100–106.

²² Silversparf, “Sáami Genealogy,” 134–35.

²³ Kuokkanen, “Indigenous Women,” 501.

²⁴ Kuokkanen, “Violence against Women,” 438–40.

²⁵ Kuokkanen, *Restructuring Relations*, 201.

²⁶ Kuokkanen, “Research as Colonialism,” 48–63.

²⁷ Turda and Quine, *Historicizing Race*, 9.

²⁸ The Laestadian revival movement spearheaded by Lars Levi Laestadius split into Sámi (Firstborn) and Finnish (Conservative) factions in Sweden after his death in 1861. The split was echoed in the United States among immigrant-settlers who transported the religion to the new world. Today, Firstborn Laestadians are a heterogeneous group residing primarily in Sweden, Finland, the United States, and Canada.

²⁹ Turda and Quine, *Historicizing Race*, 51.

³⁰ Pietikainen, *Neurosis and Modernity*, 88–93.

³¹ Kyllingstad, *Measuring the Master Race*, 209; Weindling, “Conceptualising Eugenics,” 23–24.

³² Mjöen, “Race-Crossing and Glands,” 32, 38.

³³ Kjellman and Eld, “Construction of Whiteness,” 4.

³⁴ Saura, “Tale of Two Papers,” 120.

³⁵ Ibid.

³⁶ Kotljarchuk, “Roma and Travellers,” 6.

³⁷ Sjögren, “Investigations of Heredity,” 288–89, 312–13.

³⁸ Torrey and Yolken, “Psychiatric Genocide,” 26–27.

³⁹ Joseph and Wetzel, “Ernst Rüdin,” 2–4.

⁴⁰ Broberg and Tydén, “Eugenics in Sweden,” 111.

⁴¹ Persson, “*Då var jag som en fånge*,” 73–74, 106.

⁴² For added details on Furunäset, see Pelle Lindbloom’s commentary “Rena Tortyren in the Vansinnets.” See also Anna Lundberg, “Of a Sorrowful Constitution: Sadness and Self Perception among Mental Patients at Furunäset Asylum in Sweden 1893–1912,” abstract for European Social Science History conference, April 15, 2020, <https://esshc.socialhistory.org/conference/programme/2010?day=22&time=102&session=2040&room=148>.

- ⁴³ In 1959 in Norrbotten Province, there were a total of sixty-two sterilizations. Abortions decreased from fifty-six in 1958 to twenty-three in 1959. Reportedly, in 1959, 36 percent of sterilizations were for eugenic purposes among diagnosed mentally ill and developmentally delayed individuals. In 61 percent of all sterilizations, a diagnosis of weakness justified the procedure. See Royal Medical Board, *Public Health in Sweden, 1959*, 70–73.
- ⁴⁴ The “imbecile woman” obtained permission to marry after voluntary sterilization. However, the free power of choice was nonexistent because marriage was otherwise denied. See Böök, “Genetic and Neuropsychiatric Investigation, Part II,” 356.
- ⁴⁵ Wetterberg and Modrzewska, “Schizophrenia in an Isolated Population in Sweden,” 214.
- ⁴⁶ Böök, “Genetic and Neuropsychiatric Investigation, Part II,” 396.
- ⁴⁷ Böök, “Genetic and Neuropsychiatric Investigation,” 94.
- ⁴⁸ Hagerman, “Svenska kyrkan,” 961–92.
- ⁴⁹ Böök, “Genetic and Neuropsychiatric Investigation,” 3.
- ⁵⁰ Marttinen, “Scandinavian Anthropology,” 71–72, 76.
- ⁵¹ Andresen, “Wake of the Kautokeino Event,” 131; Modrzewska, “Epidemiological Investigations,” 5.
- ⁵² According to a Finnish migration study, 27 percent of Finns moved to countries other than Sweden. Many returned to their home country after Finland recovered from war devastation. See Korkiasaari and Söderling, “Finnish Emigration and Immigration,” 3–4.
- ⁵³ Dahlberg, *Race, Reason and Rubbish*, 132–47, 163–72, 182–83.
- ⁵⁴ UNESCO, *Four Statements on the Race Question*, 31.
- ⁵⁵ Turda and Quine, *Historicizing Race*, 20–21.
- ⁵⁶ Böök, “Race Mixture,” 5.
- ⁵⁷ Böök, “Genetic and Neuropsychiatric Investigation,” 83, 91.
- ⁵⁸ Dahlberg, *Reason, Race and Rubbish*, 186–88.
- ⁵⁹ Book, “Genetic and Neuropsychiatric Investigation,” 83.
- ⁶⁰ If only some individuals carrying an allele display the phenotype, the trait is said to show incomplete penetrance. Böök defined penetrance as psychosis, calculating that 7 percent of his isolate carried a schizophrenia gene that was expressed in some family members. He reported a very high 3 percent morbidity risk that favored a genetic cause. The idea of multiple interacting genes producing risk was outside the scope of his model. See Böök, “Genetic and Neuropsychiatric Investigation,” 91.
- ⁶¹ Ernst Kretschmer, a proponent of the Tübingen school of psychiatry, adopted psychiatrist Emil Kraepelin’s differentiation between dementia praecox (schizophrenia) and manic-depressive psychosis (bipolar disorder) in a classification system of body types. He alleged that schizophrenia was associated with an asthenic (thin) build and that a pyknic (stocky) build predisposed individuals to bipolar disorder. Böök’s 1953 schizophrenia study identified Torne-Finns as athletic or muscular, which Kretschmer associated with epilepsy. In the 1980s, in her regional application of Kretschmer’s biotyping system, Modrzewska aligned the pyknic body type with intellectual disability among residents living in Norrbotten Province. See Gustavson, Modrzewska, and Wetterberg, “Mental Retardation,” 374–80.
- ⁶² Torrey, “Schizophrenia,” 285; Böök, Wetterberg, and Modrzewska, “Schizophrenia in a North Swedish Geographical Isolate,” 378.
- ⁶³ Modrzewska, “Offspring of Schizophrenic Parents,” 198.
- ⁶⁴ Torrey and Yolken, “Psychiatric Genocide,” 28.
- ⁶⁵ See “Nazi Letters on Sterilization.”
- ⁶⁶ Rourke et al., “Refutation of the General Single-Locus Model,” 630–49.
- ⁶⁷ Willey, *Undoing Monogamy*, 55.
- ⁶⁸ Modrzewska and Böök, “General Investigations,” 45–48.
- ⁶⁹ Beckman, “Distribution of Genes,” 35.
- ⁷⁰ Einarsdottir et al., “Genetic Population Structure,” 177.
- ⁷¹ Beckman, “Frequency of Regional Intramarriage,” 9.
- ⁷² See *Die Progressive Myoclonusepilepsie* for Lundborg’s pioneering research on epilepsy. Turda explains that the concept of “heredity” endorsed by eugenicists is similar to the idea of divine predestination central to Calvinism. Eugenicists held that biological heritage was coded before birth and passed down intergenerationally. See Turda, “Scientific Calvinism,” 1–2.

- ⁷³ Beckman, "Distribution of Genes," 35.
- ⁷⁴ Beckman, "Breeding Patterns," 73.
- ⁷⁵ Paul and Spence, "It's OK, We're Not Cousins by Blood," 320.
- ⁷⁶ Ljungqvist et al., "Money and Mental Illness," 842–50; St. Clair et al., "Rates of Adult Schizophrenia," 557–62; Marttinen, "Scandinavian Anthropology," 80; Leboyer et al., "Human Endogenous Retrovirus Type W," 80–90; Sipos et al., "Paternal Age and Schizophrenia," 1–5.
- ⁷⁷ Beckman, "Breeding Patterns," 75; Rogers and Nelson, "Lapps, Finns, Gypsies, Jews, and Idiots?" 66–67.
- ⁷⁸ Mattson, "Nation-State Science," 337.
- ⁷⁹ Turda and Quine argue that European science reinforced ideas of superior European culture and civilization by relying on a colonial Other and an Indigenous Self. The Sámi were constructed as civilizational Others by twentieth-century eugenicists, I suggest, to authenticate Nordics as genetically superior founding Europeans. Turda and Quine, *Historicizing Race*, 23.
- ⁸⁰ Turda, *Modernism and Eugenics*, 18. On studies tracking B blood alleles, see Beckman, *Contribution to Physical Anthropology*, 176; Ericsson, "What Happened to 'Race' in Race Biology," 139.
- ⁸¹ Beckman, *Physical Anthropology*, 153, 156; Beckman and Tackman, "Anthropology of a Swedish Gypsy Population," 272–80.
- ⁸² Mattson, "Nation-State Science," 337.
- ⁸³ Silversparf, "Sámi Genealogy Research," 131.
- ⁸⁴ *Ibid.*, 134–5, 136.
- ⁸⁵ United Nations Office on Genocide Prevention and the Responsibility to Protect, "Genocide," accessed October 3, 2019, <https://www.un.org/en/genocideprevention/genocide.shtml>.
- ⁸⁶ Kingston, "Destruction of Identity," 64, 67–69.
- ⁸⁷ Kuokkanen, "Indigenous Women," 499.
- ⁸⁸ *Ibid.*, 500.
- ⁸⁹ Kuokkanen, "Gendered Violence," 280.
- ⁹⁰ Kuokkanen, "Violence against Women," 438, 440; Kuokkanen, "Gendered Violence," 281–82.
- ⁹¹ Kuokkanen, "Gendered Violence," 278–79; Kuokkanen, *Restructuring Relations*, 201.
- ⁹² Hartley, "Sami Desire."
- ⁹³ In his novel *Kattmamman*, based on historical events, Bosse Johansson maps Nazis in Norrbotten Province who were active during the years 1930 to 1945 and where they resided. In email discussion with me in spring 2019, he verified that Nazis were concentrated in Laestadian areas.
- ⁹⁴ Hartley, "Father of Eugenics' Affair," 11–12; UCLA Scandinavian Studies, "Legacy of Eugenics."
- ⁹⁵ Kuokkanen, "Research as Colonialism," 48–49, 56; United Nations, "United Nations Declaration on the Rights of Indigenous Peoples," March 2008, 5. https://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf.
- ⁹⁶ Kuokkanen, "Indigenous Peoples," 1.
- ⁹⁷ *Ibid.*, 3–4.
- ⁹⁸ Lipott, "Tornedalian Minority," 3.
- ⁹⁹ Lipott, "Tornedalian Minority," 2, 4, 5; Heith, *Laestadius and Laestadianism*, 129–30; Kuokkanen, "Indigenous Peoples," 2.
- ¹⁰⁰ Kristiansen, "Lappmarkens," 41–44; Lehtola, "Sámi Histories," 24; Kristiansen, "Laestadianism," 119.
- ¹⁰¹ Persson, "Då var jag som en fånge," 16–17.
- ¹⁰² Böök, "Genetical Investigations in a North Swedish Population," 194.
- ¹⁰³ Ford, "Race Apart," 17.
- ¹⁰⁴ Borevi, "Understanding Swedish Multiculturalism," 153.
- ¹⁰⁵ Broberg and Tydén, "Eugenics in Sweden," 135; Björkman, "Emergence of Genetic Counselling," 499–508.
- ¹⁰⁶ In 1972, a new hospital in Gällivare replaced Furunäset as the leading treatment center for mental illness in Norrbotten Province. See Johansson, "Furunäset och mentalsjukvården," 57.
- ¹⁰⁷ Nirje, "Normalization Principle," 19.
- ¹⁰⁸ Ndhlovu, "Decolonial Critique," 31.

- ¹⁰⁹ Wickström, “Conceptual Change,” 115.
- ¹¹⁰ Miller and Levine, “Avoiding Genetic Genocide,” 98.
- ¹¹¹ Hinterberger, “Categorization, Census, and Multiculturalism,” 218.
- ¹¹² Rajagopalan and Fujimura, “Making History via DNA,” 149–53.
- ¹¹³ Jensen, *We Stopped Forgetting*, 28.
- ¹¹⁴ Scully, “Constructing Masculinity,” 2.
- ¹¹⁵ “Population Clusters,” FamilyTreeDNA, accessed May 21, 2018, <https://www.familytreedna.com/learn/user-guide/family-finder-myftdna/myorigins-population-clusters/>; FamilyTreeDNA, “Saami,” accessed July 21, 2019, <https://www.familytreedna.com/groups/saami/about>.
- ¹¹⁶ Weinstock, “Assimilation of the Sámi,” 420.
- ¹¹⁷ Tallbear, *Native American DNA*, 150.
- ¹¹⁸ Tallbear and Bolnick, “‘Native American DNA’ Tests,” 4; Tallbear, *Native American DNA*, 136, 151.
- ¹¹⁹ Kuokkanen, “Research as Colonialism,” 60.
- ¹²⁰ Kuokkanen, “Indigenous Peoples,” 2.
- ¹²¹ Kuokkanen, “Research as Colonialism,” 48.
- ¹²² Drugge, “How Can We Do It Right?,” 266.
- ¹²³ Stordahl et al., “Ethical Guidelines,” 1–8.
- ¹²⁴ Ålberg et al., “Support for Schizophrenia Susceptibility,” 1239.
- ¹²⁵ Wetterberg et al., “Genetics and Biochemistry,” 1857–59.
- ¹²⁶ Amroussia, Gustafsson, and Mosquera, “Explaining Mental Health Inequalities.”
- ¹²⁷ Stoor et al., “‘We Are like Lemmings,’” 1–8; Morris, “Loss of Land,” 15–16; Langås-Larsen et al., “‘We Own the Illness,’” 10; Hansen, “Ethnic Discrimination,” 1–12.
- ¹²⁸ Langås-Larsen et al., “‘We Own the Illness,’” 6; Nuse, “Patients with Mental Problems.”
- ¹²⁹ van Est and Stermerding, “Reflections on Current Developments in the Field of Whole Genome Sequencing,” in *Making Perfect Life*, 76; Brodwin, “DNA-Testing Company 23andMe.”
- ¹³⁰ Miller and Levine, “Avoiding Genetic Genocide,” 100.
- ¹³¹ “The End, and the Beginning,” editorial, *The Lancet Psychiatry*, July 30, 2020, 721, [https://doi.org/10.1016/S2215-0366\(20\)30348-5](https://doi.org/10.1016/S2215-0366(20)30348-5).
- ¹³² See Turda and Quine, *Historicizing Race*, chap. 5.
- ¹³³ Tallbear, “Decolonizing (≠ Reconciling).”
- ¹³⁴ Smeland et al., “Identification of Genetic Loci.”
- ¹³⁵ Research shows that reductive biological and genetic studies of schizophrenia lead to increased public stigma. See Jones and Brown, “Absence of Psychiatric C/S/X Perspectives.”
- ¹³⁶ Howe et al., “Y Chromosome, Mitochondrial DNA,” 1–7; Weinstock, “Assimilation of the Sámi,” 418.
- ¹³⁷ Leboyer et al., “Human Endogenous Retrovirus Type W,” 80–90; Richardson, Morell, and Faulkner, “L1 Retrotransposons,” 1–27; Shin et al., “Human-Specific HERV-K Insertion”; Shpyleva et al., “Overexpression of LINE-1,” 1740–49. Charvet et al., “SARS-Cov-2 Induces Human Endogenous Retrovirus,” 3; Mohan et al., “COVID-19 in People with Schizophrenia,” 7.
- ¹³⁹ Folic acid in pregnancy is linked to cortical thickness and schizophrenia, which supports the idea that starvation in early fetal life causes schizophrenia. See Eryilmaz et al., “Association of Prenatal Exposure.” See also Marttinen, “Scandinavian Anthropology,” 80.
- ¹⁴⁰ Levet et al., “Ancestral Retroviral Protein”; Möjen, “Race-Crossing and Glands,” 36.
- ¹⁴¹ Pillinger et al., “F18. Is Schizophrenia a Multi-system Disorder?,” S225–S226.
- ¹⁴² Levet et al., “Ancestral Retroviral Protein,” 2. For added information discussed at the inaugural international conference on human endogenous retroviruses, see Nath et al., “First International Workshop,” 1–9.
- ¹⁴³ Keller, “Postgenomic Genome,” 10.
- ¹⁴⁴ Smith, “Governing Data,” 120.
- ¹⁴⁵ *Ibid.*, 119–20.

¹⁴⁶ For large-scale 23andMe admixture research reframing race as ancestry, see Durand et al., “Ancestry Composition,” 1–16.

¹⁴⁷ Yudell, “Ernst Rüdin,” 1–3.

¹⁴⁸ UCL Scandinavian Studies, “Legacy of Eugenics.”

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