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VILE BLOOD: HEREDITARY DEGENERACY IN VICTORIAN ENGLAND

By

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Abstract

During the late 1800s, the people of England grew anxious about hereditary degeneracy. That anxiety was rooted in the medical literature of the Victorian period. Nature predetermined individuals to be either healthy or unhealthy. Unhealthy individuals were marked by degenerative mental or physical characteristics such as epilepsy. Medical professionals, including Henry Maudsley, emphasized reversion and its hereditary nature as a threat to individuals and society. All based their works and arguments on Charles Darwin's idea of inheritance. Darwin, in turn, had adopted and modified Lamarckian inheritance to make up for the absence of an inheritance principle in his theory of natural selection. His embracement of a modified Lamarckian principle became widely influential to physicians and alienists across England. As shown in his personal letters and relationships, Darwin did not object to prominent medical scholars' adopting and expanding on his idea of inheritance. Medical professionals used Darwin's Lamarckian inheritance principle to create a public health threat that influenced much of England's intellectual culture, including works of literature and legal conceptions of culpability. Hereditary degeneracy, an idea 50 years old, acquired the scientific basis it needed to make it a reality. Degeneracy eventually spread to Europe and America, shaping intellectual cultures, such as legal discourse and literature, until World War II.

Keywords: Charles, Darwin, Henry, Maudsley, Lamarckian, inheritance, medical, professionals, England, anxiety, intellectual, culture, hereditary, degeneracy, Pangenesis, public, health, threat, Victorian, literature, legal, reversions, neuroses, epilepsy, healthy, unhealthy, nature.

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Introduction

Modern historical and biological scholarship argues that Charles Darwin (1802 - 1889) created the theory of natural selection and that Herbert Spencer (1820 - 1903) developed the notion of social Darwinism. Darwin and his followers are thought to have refused to embrace Jean-Baptiste Lamarck (1744 - 1829), a French naturalist, and his theory of inheritance of acquired characteristics. Lamarckian inheritance stressed that the use and disuse of organs accumulated in one generation and were then passed on to the next. These characteristics were believed to be passed in perfect harmony with the environment. As a result, Lamarck did not account for the struggle for existence that was found in Darwin's theory of natural selection. Modern historical and biological scholarship overlooks the criticisms that the theories of natural selection received shortly after publication in 1859.

Natural selection described the process in which organisms adapted to their surrounding environment to survive and reproduce. Initially, Darwin included concepts of variations of individual organisms within a species, population growth, and survival and reproduction. However, he lacked explanations to commonly observed single-generational inheritances. To address such failures, Darwin embraced and modified Lamarck's idea of inheritance of acquired characteristics.

Beginning with Pangenesis, or Darwin's modification of Lamarckian inheritance, parts of the body were theorized by Darwin to have continued to emit their own organic particles that were made up of inheritable information. These particles were transferred to the offspring and could become pronounced, if triggered, in the offspring's

characteristics. Unlike Lamarck, Darwin also argued that these particles of inheritable information contained reversions or Darwin's principle of reversion.

Reversions were characteristics that reflected back to previous ancestors. Many of these characteristics were considered to be antisocial and in disharmony with a healthy environment. Medical professionals believed that such traits were marked in individuals suffering from unhealthy physical and mental neuroses. Because of Darwin's embrace of a modified form of Lamarckian inheritance, ideas of inheritance and heredity entered into the mainstream medical literature of Victorian England. From medical literature, ideas of inheritance and heredity worked their way into popular literature, into the popular imagination, and sometimes into courts of law. As a result of its increasing presence amongst professionals, people in England began developing an acute fear of hereditary degeneracy.

Hereditary degeneracy, or the inheritance of unhealthy, antisocial, or insane characteristics, became a significant part of the principle of reversion. Reversions included epilepsy, neuralgia, imbecility, and other neuroses. Determined to maintain a healthy nation, medical professionals published works on heredity and advised the legal system when it came to such threats. Degenerates, they argued, were replacing the healthy and were a public health concern. Medical conceptions of heredity influenced decades of intellectual culture, including legal discourse and literature, as it spread out of England to the rest of the world. Degeneracy surrounded legal discourse in the Americas and reinforced notions of racial superiority in Germany. Hereditary degeneracy assisted in creating the world's legal and cultural attitudes toward minorities and undesirables until the end of World War II (1939 – 1945).

In this paper, I seek to revise our understanding of the relationship between the theories of Lamarck and Darwin and how it led to widely different interpretations and implementations of Darwinian evolutionary theory. Whether their evolutionary theories were correct or not is of no concern to me. People's perceived reality in England is my concern. The combined output of Darwin's modified inheritance principle with medical discourse revived ideas of heredity that were once ignored in England. Hereditary degeneracy further impressed many of the authors of the era and became a significant idea in literature. As a result, I will also be tracing hereditary degeneracy as an idea in the popular literature of Victorian England.

Historiography

Historical scholarship researching the Victorian era covers degeneracy, Darwinism, and medico-legal arguments. However, the same scholarship does not address hereditary degeneracy in relation to Darwin. In *Trial by Medicine: Insanity and Responsibility in Victorian Trials* (1981), Smith discusses the two common interpretive methods historians use when discussing the Victorian era and insanity. First, the psychiatric interpretation focused on the increasing medical specialization which confronted an already established criminal administration. Medical men declared their skill and knowledge superior. They portrayed themselves as a moral force in a battle against the prejudices of the judicial system.[1] People and courtroom juries experienced

[1] Roger Smith, *Trial by Medicine: Insanity and Responsibility in Victorian Trials* (Edinburgh: Edinburgh University Press, 1981), 168.

acute anxiety due to the increasing number of mental illnesses brought before the court.[2] Second, the legalistic interpretation focused on the jury having a social duty to prevent admitting evidence that favored defendants. Jurists restricted the legal definition of insanity to lay principles. Courts believed that physicians had excessive pride and were ignorant of the judicial process. Physicians, according to the legalistic interpretation, threatened the legal criteria determining the defendant's culpability. Each interpretation focused on the professional rivalry between medical professionals and legal professionals. Both professions used the insanity defense as a tool to secure or condemn defendants.[3] Most studies that use the common interpretive methods used here do not address the idea of insanity being inheritable and its connection to Darwin's idea of inheritance.

Joel Peter Eigen also examines the Victorian era in the legalistic interpretive method discussed by Smith. In *Unconscious Crime: Mental Absence and Criminal Responsibility in Victorian London* (2003), Eigen addresses crimes performed unconsciously. He argues that the public and juries feared medical men. They believed that the medical man's skill was used to twist courtroom evidence.[4] Smith, too, suggested that there remained ideas of reversion from the norm, but does not discuss their relation to Darwinian inheritance.[5] Again, usage of hereditary theories in the court and their influence on trial decisions, due to Darwin's popular theory, go unaddressed. Degeneracy, as a public health concern, and its impact on England's intellectual culture,

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[2] Joel Peter Eigen, *Unconscious Crime: Mental Absence and Criminal Responsibility in Victorian London* (Baltimore, Maryland: Johns Hopkins University Press, 2003), 7.
[3] Smith, *Trial by Medicine*, 169.
[4] Eigen, *Unconscious Crime*, 5.
[5] Smith, *Trial by Medicine*, 55.

including legal discourse and literature, remains absent from scholarship examining the Victorian era.

Published in 2017 and quickly becoming a popular read, David J. Vaughan's *Mad or Bad: Crime and Insanity in Victorian Britain* concerns itself with the sentencing of insane defendants. He does not address insanity's connection to degeneracy nor its role in courts. Legal hereditary arguments guided a significant portion of sentencing and also contributed to acute fear. However, Vaughan only provides answers to questions concerning the public's fear or anxiety in relation to the public spectacle of trials. Questions surrounding medical professionals' usage of Darwin's inheritance principle to portray criminals as degenerates remains unanswered in his examination.[6] While Vaughn's history is popular and easily accessible, it minimizes an already minimized part of history – hereditary degeneracy. Mike Hawkins addresses Darwin's modification of Lamarckian inheritance and its conflict and differences with social Darwinism. He thoroughly outlines the evolutionary ideas alive in the Victorian era in *Social Darwinism in European and American Thought 1860 – 1945* (1997). However, by focusing on more of the role of and conflict with social Darwinism, he does not address Darwin's inheritance principle in relation to the idea of hereditary degeneracy endorsed by popular physicians and alienists. Hawkins briefly elaborates on the problem. Citizens had concern, he argues, for the future health of the nation. Statistics showed increasing crime, disease, and feeblemindedness. Within England, "The worthless appeared to be thriving

[6] David J. Vaughan, *Mad or Bad: Crime and Insanity in Victorian Britain* (Barnsley, England: Pen and Sword History, 2017), 25, 34, 35-36.

at the expense of the worthy."[7] Singularly, Hawkins, Eigen, Vaughan, and Smith reveal nothing considerable concerning hereditary degeneracy and its impact on England's intellectual culture. Together, these authors help bring to light an unaddressed issue of the late 1800s that is apparent with an in-depth review of popular Victorian medical literature. Darwin gave hereditary degeneracy the scientific validity that many physicians used, spreading it until the mid-1900s. Heredity formed the backbone of many physicians' practices and became a tool used to create a public health concern. The acute fear or anxiety that Vaughan and Hawkins touched on resulted from a perceived reality of tainted bloodlines – criminals and degenerates were being preserved. English citizens feared vile-degenerates would replace the healthy because evolution dictated it so.

Darwin and Heredity

The impact of hereditary degeneracy on intellectual culture started with Charles Darwin. His development of the theory of Pangenesis and his relationship with other evolutionists and medical professionals assisted in making hereditary degeneracy a public health concern. Henry Maudsley (1835 – 1918), one such physician and alienist, adopted and expanded on Darwin's ideas of heredity. The medical world of England and Europe respected Maudsley; his ideas were highly influential. His works on hereditary degeneracy were embraced in many other professional medical publications and close alliance was drawn with Darwin. Hereditary degeneracy was thought to be the cause of many diseases. Medical understandings and conceptions of what it meant to be healthy

[7] Mike Hawkins, *Social Darwinism in European and American Thought 1860-1945* (Cambridge: Cambridge University Press, 1997), 218.

were conceptualized from a hereditary point of view. Together, medical professionals created a public health concern. They deemed entire bloodlines unhealthy, making degenerates a threat to the evolutionary fabric of society. Gradually, from the 1870s to 1880s, legal defenses used hereditary degeneracy. Criminals and other social outcasts were legally conceived to be hereditary degenerates. Victorian literature became a common intellectual medium that reflected hereditary ideas and the public health concern. Fictitious villains and monsters were medically envisioned degenerates. Victorian England was intellectually enthralled with hereditary degeneracy.

Dating back to 1815, physicians espoused hereditary diagnoses, attempting to explain various mental and physical illnesses. Dr. George Man Burrows (1771 – 1846) created some of the first medical journals in Britain that focused on mental health. In his writings, Burrows claimed that heredity maintained an active influence on a person's mental health. Other physicians agreed with him and affirmed heredity's dangerous impact on health. Through inheritance, degeneracy spread. Families concealed degenerate family members, which made treatment and cures difficult. Upper-class and aristocratic families feared public ridicule. Degenerate family members brought exposure, gossip, and shame. Despite concealment, Dr. Burrows maintained confidence that he alone could diagnose mental illnesses within families by listening to family stories.[8] Strong belief that wealthy and aristocratic families had degenerative blood existed in the early 1800s. Physicians, like Burrows, argued that nobles became degenerative due to their intermarriage rates.[9] However, early heredity ideas lacked scientific method that afforded

[8] Sarah Wise, *Inconvenient People: Lunacy, Liberty and the Mad-Doctors in England,* Reprint, (Berkeley, California: Counterpoint, 2014), 27.
[9] Ibid., 30.

validation. Only speculation surrounded inherited acquired characteristics. Privileged families, as a result, gave little regard to the idea of inherited degeneracy from one or more generations. Many families did not take it seriously due to half of all the Chancery lunatics, or wealthy people deemed insane and unable to govern their property, had relatives employed by the government. Elite families considered the notion as being a "vulgar error." They continued to enjoy the pleasures of upper-class privilege and marriage. Beliefs in hereditary degeneracy remained in many physicians' minds despite the missing scientific evidence.[10] Hereditary theories gained traction with the public in the 1860s. They soon became the basis for understanding health. The theory of hereditary degeneracy appeared in the 1860s in Spencer's evolutionary philosophy.[11] Despite Spencer, it was Charles Darwin that renewed the vigor for hereditary ideas. To many physicians, Darwin had scientifically validated the idea in his works on evolution.

Having spent much of his time in South America and the Galapagos, Darwin returned to England in 1836. In the middle of intellectual change, England faced a growing diversity of human values and behavior. Followers of the Enlightenment paved pathways away from religion, allowing science to explain some of man's greatest mysteries. Science attempted to explain humanity's origin and its place in nature. Consensus over the validity of what constituted universal human nature fissured.[12] Within two years of returning home, Darwin began working on his theory centered on natural selection. He worked for the next two decades producing drafts, gathering evidence, and testing his hypothesis. Scientific methods made Darwin's *On the Origin of*

[10] Ibid., 50.
[11] Smith, *Trial by Medicine*, 54 – 55.
[12] Hawkins, *Social Darwinism*, 23.

Species (1859) potent.[13] *Origin* gave science the ability to supersede the religious understandings of humanity's origin."[14] Darwin accepted the inheritance of acquired characteristics as an ancilliary role to natural selection, but didn't initially explore it in great depth. After publishing the *Origin*, Herbert Spencer commented on Darwin's unwillingness to fully embrace inheritance of acquired characteristics. Spencer argued that it had to be "recognized as a co-operator."[15] Use and disuse of organs had been marked through generations due to heredity.[16] A giraffe, for instance, when galloping, revealed its hind legs' muscles and bones performing in different functions than other homologous bones and muscles in other animals of ordinary proportions. Each successive stage that produced "the large fore-quarters and neck, entailed some adapted change in sundry of the numerous parts composing the hind-quarters," and any failures of change in the hind-quarters would have entailed a loss in speed and life.[17]

While Darwin seemed reluctant to incorporate a form of Lamarckian inheritance, he had made comments that were not lost on enthusiasts of evolution. They had noticed his accreditation of habit, use, and disuse to have "played a considerable part in the modification."[18] Darwin was positive that variations occurred due to heredity. He initially

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[13] Derek Freeman, et al., "The Evolutionary Theories of Charles Darwin and Herbert Spencer [and Comments and Replies,]" *Current Anthropology* 15, no. 3 (September 1974): 213.
[14] James Allen Rogers, "Darwinism and Social Darwinism," *Journal of the History of Ideas* 33, no. 2 (April – June 1972): 266.
[15] Herbert Spencer, *The Factors of Organic Evolution* (New York: D. Appleton and Company, 1887), 9.
[16] Spencer, *Factors of Organic Evolution*, 12.
[17] Ibid., 15.
[18] Charles Darwin, *On the Origin of Species*, (London: John Murray, 1859), reprinted in *From So Simple a Beginning: The Four Great Books of Charles Darwin*, ed. Edward O. Wilson (New York: W. W. Norton and Company, 2006), 441.

addressed heredity in the *Origin* and considerably in the *Variation of Animals and Plants Under Domestication* (1868). In the *Origin*, he commented on the observable inheritance of good and bad qualities within animals. He averred that it was obvious to breeders and strange that some people didn't pay it any attention.[19] Characteristics appearing in children, similar to their parents, made the appearance attributable to heredity. According to Darwin, the "correct way of viewing the whole subject" was to look at heredity of every characteristic as the rule and "non-inheritance as the anomaly." [20] Relationships between "all organic beings [were] due to inheritance or community of descent."[21] Lines of descent assisted in discovering permanent characteristics.[22] Observations revealed that children sometimes reverted to characteristics of their grandparents or a "remote ancestor."[23] Sometimes this occurred in the embryo, due to the parent's or ancestor's exposure to certain environmental conditions.[24] People who took on retrograde characteristics became known as "throwbacks." After the publication of the *Origin*, Darwin realized that his theory of natural selection lacked the ability to account for inheritance. He began working on a new theory that would account for inheritances of acquired characteristics. It was then that he would develop a modified Lamarckian inheritance principle.

In 1809, Jean-Baptiste Lamarck asserted that evolution progressed from simple to complex organisms. Environmental factors prodded these progressions. Variable

[19] Darwin, *On the Origin of Species*, 470.
[20] Ibid., 753.
[21] Ibid.
[22] Ibid.
[23] Darwin, *On the Origin of Species*, 457.
[24] Ibid., 731.

environments produced changes in the habits and modes of life of the different organisms; these changes gave rise to modifications or changes in the organs and parts of the organism. To survive, organisms adapted to new conditions by organically transforming and developing new structures. These characteristics or modifications, which the organism acquired over their lifetime, were then transferred to the offspring.[25] Darwin realized that natural selection did not account for principles of inheritance that were observable in many species. Dogs, for example, were known to Darwin to have displayed certain behaviors, such as the fear of butchers, which natural selection did not explain. Dogs displaying such behavior transmitted that behavior in a single generation to offspring. Darwin published an account of dogs inheriting a fear of butchers, shortly after his work on Pangenesis, in *Nature* on February 13, 1873.[26] He first began working on Pangenesis, a modified version of Lamarckian inheritance, in *The Variation of Animals and Plants Under Domestication* to address natural selection's failures. Darwin sought to explain how it was "possible for a character possessed by some remote ancestor suddenly to reappear in the offspring; how the effects of increased or decreased use of a limb can be transmitted to the child."[27] For example, Darwin argued that male strength passed on to male children. He believed that this occurred throughout generations of male children at corresponding ages. Man's mental powers had developed differently due to generational inheritances through generations of ancestors. Darwin reasoned that this occurred due to male children being prioritized above female children in highly advanced

[25] Hawkins, *Social Darwinism*, 40.
[26] Charles Darwin, "Inherited Instinct," *Nature* 7, no. 172 (1873): 281.
[27] Charles Darwin, *The Variation of Animals and Plants Under Domestication,* (London: John Murray, 1868), 357.

societies.[28] To address such anomalies as inheritance of strength within one generation, Darwin proposed Pangenesis.

Pangenesis implied that "every separate atom or unit, reproduces itself." Physiologists widely accepted that cells made up units of the body and propagated by self-division or proliferation. Cells retained the same nature and became converted into various tissues of the body. However, before cells converted into bodily tissue, they threw off atoms or granules. These granules circulated freely within the body, multiplied by self-division when supplied with nutriment. Cells that had previously divided from the parent cell were known as cell-gemmules. Cell-gemmules were transmitted from parents to offspring in dormant states. Their development depended on their "union with other partially developed cells or gemmules which preceded them in the regular course of growth." Cells throughout the body generated new organisms. These passed through the two forms of reproduction – sexual and asexual. Within this transmission, sometimes for unknown causes, one sex had stronger influence over transmission than the other. Beings produced sexually tended to vary more than beings produced asexually. Organisms which propagated asexually were not known to undergo retrogression or sinking to a lower stage of development. In animals that did not breed till maturity, when all parts became developed, the male element rarely affected the female's development. However, some animals present it as an anomaly. Darwin gives an example of Lord Morton's mare whom, when bred with a quagga, passed the defect on to future offspring of different

[28] Charles Darwin, *The Descent of Man, and Selection in Relation to Sex*, (London: John Murray, 1871), reprinted in *From So Simple a Beginning: The Four Great Books of Charles Darwin*, ed. Edward O. Wilson (New York: W. W. Norton and Company, 2006), 1204.

males. When structures change considerably during development, so does the cell, which it derived from, change greatly. Darwin, in developing his theory of Pangenesis, elaborated on variability and inheritances further. Variability resulted from "changed conditions acting during successive generations." The sexual system remained predisposed to external conditions. When affected by external conditions, its variability fluctuated. If the sexual system was not seriously affected, it failed to properly transmit the characters of the parents to the offspring. Several deviations resulted from the changed conditions acting directly on the organization of the organism.[29]

The use and disuse of organs were also thought to have been transmitted through sexual reproduction. Sexual reproduction differed, at times, slightly from budding or self-division. These processes developed into ordinary development and growth by repairing injuries. As a result, every characteristic would have been transmitted by every method of reproduction. Injurious characteristics or reversions were "faithfully transmitted – frequently even when one parent alone possess[ed] some new peculiarity." Offspring tended to exhibit the characteristics at corresponding ages, making inheritance "the rule, and non-inheritance the anomaly." When the conditions of life are opposed to a characteristic then that characteristic may not be inherited. This could mean a child could revert to ancestral characteristics. The act of reversion, or organisms tending to produce anomalies or lost characteristics, proved that transmission of characteristics and their development were distinct powers. In some cases, these powers "are even antagonistic,

[29] Darwin, *The Variation of Animals and Plants*, 357 – 374. Quotations on 358, 374, 371.

for each acts alternately in successive generations. Reversion is not a rare event." Reversion formed part of the principle of inheritance.[30]

Both Darwin's theory and Lamarck's theory of inheritance addressed the evolution of organisms through the accumulation of small changes and the inheritance of acquired characteristics based on use and disuse over a single generation. However, Lamarck lacked the concept of struggle for existence. Darwin's modified Lamarckian idea of inheritance, insistence on struggle for existence, and inclusion of retrogression made his theory an entirely different world view.[31] To many Victorian Englanders, distinguishing Darwin's theory from other evolutionary and Lamarckian ideas, modified or otherwise, was difficult. Many of Darwin's supporters embraced a form of inheritance. Replication of Darwin's ideas was filtered through other scholars' beliefs and ideas, making his original ideas sometimes misused or lost.[32] Often, Darwin's work on inheritance allowed the reader to interpret it to scientifically support their biases and perspectives.[33] Darwin's continual work on his theory, expanding it and editing it, made matters more confusing. By 1980, the *Origin* had undergone six editions, each edited differently, and expanded upon. He sometimes stressed some ideas more and changed his definitions. When coupled with his other major publications, *The Variations of Plants and Animals* (1868) and *The Descent of Man* (1871), comprehending Darwin's theory becomes a daunting task.[34] Not to mention the countless other naturalists such as Thomas

[30] Ibid., 372.
[31] Hawkins, *Social Darwinism*, 41 – 42.
[32] Ibid., 27.
[33] Rogers, "Darwinism and Social Darwinism," 268.
[34] Helen P. Liepman, "The Six Editions of the 'Origin of Species:' A Comparative Study," *Acta Biotheoretica* 30, no. 3 (September 1981): 199 – 202.

Henry Huxley (1825 – 1895) and Alfred Russel Wallace (1823 – 1913) who publicized Darwinism within their own interpretations. Countless social Darwinists also echoed Darwin, including a close friend of Darwin, Henry Maudsley. It took mental gymnastics to keep all these versions of evolution separate and intact.

Understanding Darwin's Lamarckian tendencies relies on understanding his relationship with Herbert Spencer. Having been aware of each other's works, Darwin and Spencer shared common conclusions and principles. Concerning the principle of inheritance, Darwin remarked that Spencer's ideas were close to his. Both Pangenesis' gemmules and Spencer's physiological units multiplied and transmitted from the parent to the child. Sexual elements served only as the vessel. They were agents of reproduction and repaired injuries. However, while they accounted for inheritance, Darwin did not understand how physiological units did not account for reversion. Darwin didn't agree fully with Spencer's ideas. He "concluded that Mr. Spencer's views were fundamentally the same as mine, had it not been for several passages […] [that] indicated something quite different."[35] Spencer had been moving in a social Darwinist direction. In *Principles of Sociology* (1876), Spencer applied concepts of evolution to society. All societies, he argued, were organized according to the organic world. Through development, a society's parts became distinguished and multiplied.[36] Through inheritance, "the least capable disappear[ed] by failure to get food or from [the] inability to escape […] by this process is maintained the quality of species which enable[ed] it to survive in the struggle for

[35] Darwin, *The Variation of Animals and Plants,* 375-76.
[36] Herbert Spencer, *The Principles of Sociology,* vol. II (1876; repr., Honolulu, HI: University Press of the Pacific, 2004), 437

existence with other species."[37] Darwin, in the *Origin*, agreed with the concept of struggle for survival, but never applied it directly to society. The stronger organisms lived and the weakest organisms perished in the struggle for existence.[38] Both Darwin's and Spencer's ideas of inheritance exceeded Lamarck's original concept of inheritance, but they both also differ in application.

By 1871, Darwin and Spencer both embraced a modified form of Lamarckian inheritance. Darwin admitted in *The Descent of Man*, published in 1871, that many of the physical and behavioral characteristics of humans were not explainable by natural selection alone.[39] Pangenesis initially addressed animals alone, not humans. To include humans, Darwin expanded on Pangenesis, calling it sexual selection in the *Descent*. He argues that the use and disuse of characteristics, such as language, reacted to the environment, such as mimicking bird cries, to form new language characteristics that were hereditary.[40] Characteristics, he explained, developed in the same sex at the same age and around the same year in which the characteristics first appeared in the parents. Variations in characteristics occurred throughout life in one sex or in both sexes and transmitted to both sexes modifying the individual of a species.[41] Some of these variations conflicted with the health of society. Individuals that retained primitive traits, who married and had offspring, propagated their kind and hindered society's health.[42] Darwin's and Spencer's arguments of inheriting primitive traits merge in the *Descent,*

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[37] Ibid., 708.
[38] Darwin, *On the Origin of Species*, 605
[39] Gloria McConnaughey, "Darwin and Social Darwinism," *Osiris* 9, (1950): 410; Charles Darwin, *The Descent of Man*, 799; Hawkins, *Social Darwinism*, 27.
[40] Darwin, *The Descent of Man*, 810.
[41] Ibid., 945 – 946.
[42] Spencer, *Principles of Sociology*, vol. II, 638 – 639. Quotation on 638.

which illustrates the similarity between their arguments concerning inheritance over one generation. Crediting Spencer, Darwin claimed that the fertility of species that consumed more matter in their growth increased. Degenerates, due to making up more of the poor classes, tended to have higher fertility rates that led to large numbers of offspring. Poor degenerates, due to their number, tended to survive and increase more, making natural checks difficult.[43] In his application of evolutionary theory to explain humanity's origin, Darwin used heredity to shed light on human variations.[44] These variations being the mentally and physically ill. He remained fixated on hereditary ideas. In a letter to James Crichton Browne, a friend of Dr. Henry Maudsley, Darwin requested data on the hereditary nature of insane patients. He asked if the insane wept like savages, which was a characteristic of their class. To Darwin, degenerates formed a variation of humans who retained characteristics of remote savage ancestors.[45] Heredity insisted on the possibility that all the reverted or retrograded characteristics of mankind were inheritable in single generations. Darwin's scientific approach and use of scientific methods validated heredity, reinvigorating the idea in English culture.[46] Discussions of hereditary degeneracy and its danger to people's health characterized both Darwin's and Spencer's works making their theories closer in thought. To an average reader, their ideas may appear more in agreement than in opposition. As far as English citizens knew, inheritable

[43] Darwin, *The Descent of Man*, 961 – 962.
[44] Pick, *Faces of Degeneration*: A *European Disorder, c.1848-1918*, (1889; repr., Cambridge: Cambridge University Press, 1993), 193.
[45] Charles Darwin to James Crichton Browne, February 8, 1871, in *The Correspondence of Charles Darwin,* vol. 19, ed. Frederick Burhardt and James Secord, https://www.darwinproject.ac.uk/letter/?docId=letters/DCP-LETT-7478.xml (accessed November 8, 2018).
[46] Pick, *Faces of Degeneration*, 100.

reversions were real. Concerns with degeneracy pervaded the minds of a majority of the population and not just a few eccentrics.[47] Darwin, by stressing struggle for existence and heredity, made nature a model and a threat.[48] Already people felt that they were being faced with the reality of a Darwinian struggle for existence. Francis Galton (1822 – 1911), the half-cousin of Darwin and the pioneer of eugenics, complained to Darwin that "the struggle for existence seem[ed] to [him] to spoil and not improve our breed."[49] Increasing populations made the struggle for existence apparent. With more people came more mouths to feed. England, haunted by the Malthusian principle of population, believed that increasing populations would require more food and resources which were at a set limit. As a result, more people met more struggle as poverty and famine set in.[50] The struggle for existence took place with individuals of a species, with other species, and with the environment.[51] Populations that grew and augmented created more divisions and sub-divisions. Differentiation only stopped when the organism matured before decaying.[52] London, as argued by Spencer, was a habitat that entailed modes "of life that were inferior," allowing for degradation.[53] Darwin understood that the likelihood of degeneration was more probable since varieties of species, including degenerative varieties, "tended to transform into a more distinct species."[54] If the degenerative variety

[47] Pick, *Faces of Degeneration*, 189.
[48] Hawkins, *Social Darwinism*, 44.
[49] Pick, *Faces of Degeneration*, 192.
[50] T. R. Malthus, *An Essay on the Principle of Population*, ed. Geoffrey Gilbert, rev. ed. (Oxford: Oxford University Press, 2004), 12 – 13. Originally printed in 1798.
[51] Darwin, *On the Origin of Species*, 490.
[52] Spencer, *Principles of Sociology*, vol. II, 438.
[53] Herbert Spencer, *Principles of Sociology*, vol. I (Honolulu, Hawaii: University Press of the Pacific, 2004), 97.
[54] Darwin, *On the Origin of Species*, 486.

flourished and exceeded the numbers of the parent species, it would "supplant and exterminate the parent species."[55] The healthy would be supplanted by the degenerate.

Despite trying to remain positive about England's healthy future, Darwin admitted that the variability of species was "modified by various degrees of inheritance and of reversion."[56] Attempting to console his readers, he argued that degenerates propagated more depending on the environment and that "we may console ourselves with the full belief […] the healthy, and the happy survive and multiply."[57] However, by 1871, Darwin contradicted his claims that the healthy would survive. He had stated in the *Descent* that negative characteristics, such as imbecility and anti-social behaviors, appeared in families due to reversion. As a result, "the reckless, degraded, and often vicious members of society, tend to increase at a quicker rate than the provident and generally virtuous members." Unless checks were prescribed to prevent the "inferior members of society from increasing at a quicker rate," the country of England would begin to regress into ancestral conditions and decay.[58] Only five years later, Spencer argued that England, an industrial nation, faced greater potential for retrogression due to its complexity.[59] He had reinforced Darwin's conclusions on England's potential of reversion. Professionals observed and were certain that "insanity and deteriorated mental powers likewise [ran] in the same families."[60] Young members of degenerative blood had tendencies to produce long lost characteristics, or to become "throwbacks." Professionals

[55] Ibid., 482.
[56] Ibid., 475 – 476.
[57] Ibid., 500.
[58] Darwin, *The Descent of Man*, 876 – 878. Quotations on 876, 878.
[59] Spencer, *Principles of Sociology*, vol. II, 568.
[60] Darwin, *The Descent of Man*, 841.

observed throwbacks, but had no knowledge of why their degeneracy prevailed in many bloodlines.[61] Attempting to address such a mystery, Darwin argued that peoples' intellectual and moral faculties seemed to be subject to variability and inheritance.[62] Within a generation, London became home to increasing numbers of insane degenerates. With Darwin's public endorsement of its inheritability, English citizens grew more concerned.

There can be no doubt of the similarity in the arguments of Darwin and Spencer. They mirror each other in many ways, but were applied differently. Darwin focused on human evolution, Spencer focused on social evolution. However, they influenced one another. Their ideas of Lamarckian inheritance were different, but remained difficult to dissociate from each other. Their arguments concerning inheritance and heredity are hardly discernible except for their application. On several occasions they gave consideration to each other. For example, Spencer agreed with Darwin, commenting that "no one questions the accepted belief that insanity is inheritable." A successful search proving insanity to be inheritable had been made by the most competent individual – "I refer to the author" of the *Origin*.[63] Compiled with the previously discussed material, one may understand how easy it was to potentially misinterpret Darwin, intentionally misinterpret him, or confuse his evolutionary idea with other ideas. These men had their own unique visions; it is apparent they didn't remain unique. Degeneracy was degeneracy and Darwin, Spencer, and other Darwinians discussed it.

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[61] Darwin, *On the Origin of Species*, 556.
[62] Darwin, *The Descent of Man*, 868.
[63] Spencer, *The Factors of Organic Evolution*, 28 – 29. Quotations on 28, 29.

Such thinking argued that sympathetic discussions of helping the degenerate reinforced society's prevailing concern over hereditary degeneracy. Instinctive sympathy created more welfare and charity schemes which Darwin, Spencer, and other professionals argued caused reversion by allowing the mentally and physically ill to proliferate.[64] Civilized society and charity checked evolution's elimination process by building asylums and instituting poor laws. Government medical establishments complicated the process by seeking to save every life. Vaccinations preserved weak individuals who would have died, resulting in the saved "weak members of civilized societies propagat[ing] their kind."[65] Marriage provided the only check on weaker and poorer members of society. Professionals acknowledged that those with weak bodies and minds needed to refrain from marriage and from propagating their degeneracy.[66] Government programs and charity, that sought to address issues of reversion, allowed degeneracy to spread by allowing degenerates to survive and propagate.

Four major pieces of legislation, from 1837 to 1845, transferred the mentally ill from the private sphere to the public sphere. The Central Criminal Court Act, enacted shortly after Darwin's return home, transferred the power of mercy from the Queen to the Home Secretary. Judges began recording the death penalty in cases that were difficult to ascertain the defendant's culpability. In 1840, the Insane Prisoners Act allowed for the incarceration of those found insane, including the guilty before they were sentenced and the accused before the trial took place. Governmental control further asserted certification procedures, established Commissioners in Lunacy, and made county asylums accept

[64] Hawkins, *Social Darwinism*, 29.
[65] Darwin, *The Descent of Man*, 873.
[66] Ibid.

paupers as part of lunacy care by 1845.[67] The poor and insane became objects for protection and preservation. Not only did this give the impression that insane degeneracy was spreading, but that society faced destruction from within.

Darwin had made considerable advancements on the idea of inheritance in a single generation. Objections to Darwin's role in hereditary degeneracy point to the fact that Darwin had no control over how others used his theory to reinvigorate the theory of hereditary degeneracy. However, Darwin's complicated dissemination of his theory and continuous corrections provided for different interpretations. Flirtation with Spencer and modified Lamarckian ideas further complicated his vision. He had also maintained a close friendship with the individual responsible for making hereditary degeneracy a public health concern – Henry Maudsley. There exists no direct evidence of him refuting medical usage of his work. Darwin only provided praise. His work on inheritance, from the *Origin* to the *Descent of Man*, and his credibility as a scientist gave medical arguments of hereditary degeneracy all the more validity. Coupled with the ability to widely interpret his theory, his friend, Henry Maudsley, made inheritance the principle of diagnosing illnesses.

Darwin and Maudsley

Medical professionals, embracing Darwin, focused on behavioral variations and its inherited tendencies.[68] Dr. Henry Maudsley (1835 – 1918), leading physician, alienist, and pioneer in the field of psychiatry, expanded on Darwin's inheritance principle

[67] David J. Vaughan, Appendix to *Mad or Bad: Crime and Insanity in Victorian Britain* (Barnsley, England: Pen and Sword History, 2017), 168.
[68] Hawkins, *Social Darwinism*, 32 – 33.

elaborating on behavioral variations. Born in 1835, the third of four brothers, Maudsley grew up in the countryside of England. His father, a self-described yeoman, and mother, Mary Bateson, headed a farmhouse in the Parish of Giggleswick. Young Maudsley witnessed his first disease, fits, and its inherited effect within his own family. His mother's brother died of apoplexy. Later, his father died of the same affliction. Maudsley's two elder brothers died from similar apoplectic fits. His mother suffered from severe headaches regularly, making him think of her as an invalid. Beginning his scholarly career, Maudsley contributed to the *Journal of Mental Science*. His name, not known outside of Lancashire until then, began to become popular. After studying under Reverend Alfred Newth, Maudsley passed the matriculation examination at London University and decided to take medical courses. Maudsley went on to apprentice at the University College hospital for five years under Mr. J. T. Clover. His eccentric views annoyed Clover, who decided to abandon him. He continued on alone, winning six medals. At the end of his training, he won ten medals in scholarship and surgery. At 23 years of age, Maudsley became superintendent of the Manchester Royal Lunatic Asylum. Retiring only after three years to pursue his own medical practice in lunacy, he started medically promoting the idea of the inheritance of acquired characteristics.[69]

Darwin's influence on Maudsley and Maudsley's reverence for Darwin helped solidify the medical concept of inheritance of acquired characteristics in diagnosis procedures. Dr. Maudsley's popularity reached stardom. In Italy, France, and Germany, doctors quoted his works. Charles Darwin had read his works while writing the *Descent*

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[69] *Henry Maudsley Autobiography*, Digital Reproduction of Typescript, 1912, Foyle Special Collection Library, Kings College London, 1 - 7, https://archive.org/details/b21296431. (accessed November 2, 2018).

of Man, quoting him and remarking that Maudsley maintained sensible and sober views.[70] Maudsley received a copy of the *Descent* from Darwin, thanking him for the published work. In return, Maudsley sent Darwin a journal containing a lecture that touched upon a subject that interested Darwin. Printed initially in the *British Medical Journal*, August 10, 1871, the lecture addressed the inheritance of the moral senses.[71] Darwin and Maudsley nurtured a close friendship through letters and their individual works. Darwin respected and cross-pollinated intellectually with a man that many historians considered to be an unapologetic social Darwinist. Darwin claimed that the doctor wrote "vigorously and well" but it was Maudsley's ideas that interested him the most.[72] Through their close connection, Maudsley introduced Darwin to John Crichton Browne in order to obtain observations of insane patients for Darwin's "Expression" chapter in the *Descent*.[73]

With his publication of *Body and Mind* receiving wide acclaim, Maudsley embraced Darwin's theory on the inheritance of mental states, warning readers of the degenerative state that "the human brain may revert to, or fall below, the type of development from which, if the theory of Darwin be true, it has gradually ascended by

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[70] Pick, *Faces of Degeneration*, 205.
[71] Henry Maudsley to Charles Darwin, November 6, 1872, in *The Correspondence of Charles Darwin,* vol. 20, ed. Frederick Burhardt and James Secord, https://www.darwinproject.ac.uk/letter/?docId=letters/DCP-LETT-8603.xml (accessed October 20, 2018).
[72] Charles Darwin to James Crichton Browne, February 8, 1871, in *The Correspondence of Charles Darwin,* vol. 19, ed. Frederick Burhardt and James Secord, https://www.darwinproject.ac.uk/letter/?docId=letters/DCP-LETT-7478.xml (accessed October 20, 2018).
[73] Henry Maudsley to Charles Darwin, May 20, 1869, in *The Correspondence of Charles Darwin,* vol. 17, ed. Frederick Burhardt and James Secord, https://www.darwinproject.ac.uk/letter/?docId=letters/DCP-LETT-6752.xml (accessed October 22, 2018).

evolution through the ages."[74] Maudsley connected reversion and inheritance of acquired characteristics to the mental psychology of a person displaying "the brute-like characteristics that are at times witnessed among the insane."[75] He argued that there were enough insane displaying degeneracy to support the fact that "Mr. Darwin's views might be drawn from the field of morbid psychology."[76] Darwin revealed no known significant opposition to Maudsley. Hereditary insanity became scientifically credible because of Darwin and popular because of Maudsley. Maudsley's relationship with Spencer reveals the complicated nature surrounding the understanding of modified ideas of Lamarckian inheritance. Only after other works set forth the same views as Spencer, such as Henry Maudsley's *Physiology and Pathology of the Mind,* did Spencer's ideas receive wide appeal.[77] Spencer expressed concern over how similar Maudsley's ideas were to his and that there was a risk that the public might think he appropriated Maudsley's ideas.[78] Spencer worried that the "reproduction of [his] own thoughts [would] render [him] liable to the charge of plagiarism!"[79] Critical conceptions of the mind in *Physiology and Pathology of the Mind* which adopted the "cardinal conception of the *Principles of Psychology*, without at all indicating whence the conception was derived, was reviewed

[74] Henry Maudsley, *Body and Mind: An Inquiry Into Their Connection and Mutual Influence, Specially in Reference to Mental Disorders* (London: Macmillan and Co., 1870), 47.
[75] Maudsley, *Body and Mind*, 53.
[76] Ibid.
[77] Herbert Spencer to JS. Mill, June 9, 1869, in *Life and Letters of Herbert Spencer*, ed. David Duncan (London: Williams and Norgate, 1911), 140.
[78] Herbert Spencer to John Tyandall, May 11, 1868, in *Life and Letters of Herbert Spencer*, ed. David Duncan (London: Williams and Norgate, 1911), 143.
[79] Ibid.

with great applause and had a great success."[80] Maudsley, however, never credited Spencer; he credited Darwin. Spencer's claims reveal how difficult it was to dissociate Darwin's views from his. Considering the fact that Darwin and Spencer referenced each other's theory, remarking how similar they were, it only makes sense that Maudsley's interpretation of Darwin's inheritance principle appeared to Spencer to have used his ideas. No strict evidence exists suggesting Maudsley appropriated ideas from Spencer.

Ideas concerning heredity circulated amongst Darwin, Spencer, and Maudsley. Maudsley expanded the modified Lamarckian concepts of Darwin to include degenerative variations of psychology. Natural selection afforded explanations of the survival of variations; however, Maudsley criticized it for not offering explanations for the start or progressive increase of such variations. It was the internal processes of the organism against the external processes of the environment that gives rise to initial variation and its growth through usage.[81] London, an environment, gave rise to degenerative qualities which flourished through exercise and spread through inheritance. Structures resulting from variations embodied the conditions of the environment and were prepared to flourish in similar habitats. Heredity began to apply to variations which operated through "the law of inheritance of like qualities."[82] Maudsley developed a modified version of Darwin's ideas of inheritance without any noticeable objection from Darwin.[83] Maudsley expanded on ideas of inheritance, arguing that functions developing

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[80] Herbert Spencer to JS. Mill, June 9, 1869, in *Life and Letters of Herbert Spencer*, ed. David Duncan (London: Williams and Norgate, 1911), 140.
[81] Henry Maudsley, *Body and Will: Being An Essay Concerning Will in its Metaphysical, Physiological and Pathological Aspects* (London: Kegan Paul, Trench and Co., 1883), 137.
[82] Ibid.
[83] Ibid., 137 – 138.

structures or structures developing functions were irrelevant. Every organism, he argued, coexisted with its medium.[84] Transformations of a specific species took place due to structures within organisms transforming from simple to complex tissues. Tissues assimilated material from the blood to other parts of the body making it the same as its surrounding organs. Similar to Spencer's argument, Maudsley stated that development of high tissue proceeded from lower tissue development.[85] No organism existed without its environment.[86] Environments, he believed, influenced physiological and psychological dispositions. Variations that grew by natural selection were due to external nature selecting the variation in harmony with its environment. After the selection of the variation, spread of the variation proved that nature had selected characteristics in harmony with its environment and its eventual inheritability.[87] Maudsley incorporated these ideas into his laws of variation. Laws of variation, or the idea that inheritable characteristics "derived from its parental structure," determined either degenerative or productive variations. Maudsley argued that organisms could not simply be a product of evolution.[88] Psychological variations, including insanity, began in the organism's intimate processes of internal organization in relation to its environment.[89] Insanity in an individual meant an organism had failed in adapting to its environment. Environments could not be bent towards them nor they towards the environment.[90] Such mental

[84] Ibid., 138.
[85] Maudsley, *Body and Mind*, 175.
[86] Henry Maudsley, *Life in Mind and Conduct: Studies of Organic in Human Nature* (London: Macmillan and Co., 1902), 333
[87] Maudsley, *Life in Mind and Conduct,* 335; Maudsley, *Body and Will*, 137 – 138.
[88] Maudsley, *Life in Mind and Conduct*, 334 – 335. Quotation on 334.
[89] Maudsley, *Body and Will*, 137.
[90] Henry Maudsley, *The Physiology and Pathology of the Mind* (London: Macmillan and Co., 1868), 291.

disorganization was dangerous because of heredity.[91] Those insane, argued Maudsley, were insane because of an inherited weak nature. As a result, he believed they were determined unequal in evolution and had to fall to the wayside for the healthy to lead the progression of the species. However, before so-called degenerates passed away, Maudsley thought that it was ignorant not to learn "the lesson which their history conveys" in order to discover the proper way to adapt to nature.[92] Patients in asylums and medical institutions became objects of observation for scientific enquiry. Their genetic degeneracies, it was thought, made them a threat to the progress of mankind. Readers of Darwin, Spencer, and Maudsley would have noticed the insistence on inheritance and the influence of the environment on psychological variations. While other evolutionists popularized Darwinism or social Darwinism, Maudsley relied on Darwin and solidified ideas of hereditary degeneracy in the late Victorian period.

Darwinian Heredity and Maudsley

By the late-1860s, Maudsley became fixated on heredity. He wrote of diseases resulting from the poor psychological organization caused by defective nature at the same time Darwin worked on *Descent of Man*. The inheritable nature of poorly-organized nervous systems became part of Maudsley's "tyranny of organization." Inherited defective nervous systems led to poorly functioning individuals. Nature, Maudsley argued, was in control. No one was able to disobey nature's assigned functions.[93] And all of this was inheritable. Humanity was not necessarily progressing "in the sense we

[91] Maudsley, *Body and Will*, 137.
[92] Maudsley, *The Physiology and Pathology of the Mind*, 291.
[93] Wise, *Inconvenient People*, 304.

understand progress."[94] Survival of the fittest did not always entail the survival of the highest organism. Organisms best fitted for their environment survived. Good and bad environments entailed good and bad selections. For example, environments best suited for savages assisted with humanity's progression to the savage state. An environment that best suits the savage will sponsor man's process to the savage. Nature controlled the process of moving from higher development to lower development, or degeneracy.[95] Societies may be entirely unaware, due to selfish aims dominating their egos, of moving from higher to lower states of development. An outsider would notice the degeneracy of the society and remark on the wickedness of the inhabitants. One generation's antisocial behavior predetermined the next generation's antisocial behavior. Antisocial developments in the parents determine the "mental degeneracy of his progeny."[96] Nature was indecisive and did not always pronounce a modification as good. After having birthed certain modifications, Nature went on immediately to modify the modification it just birthed "and not always for the better."[97] Degenerative evolutionary conclusions were evident by the mentally ill or insane and their increasing population in England. Like Darwin, Maudsley argued that overpopulation and preservation of the weak hindered natural selection and allowed degenerates to propagate.[98] Degenerative parents transmitted taint and fostered degenerative growth through bad example and training. Children of such parental relations tended to travel in a degenerative direction for life. Families who also pushed their offspring into intellectual pursuits made their children

[94] Maudsley, *Body and Will*, 237.
[95] Ibid.
[96] Maudsley, *Body and Will*, 293.
[97] Ibid., 180.
[98] Maudsley, *The Physiology and Pathology of the Mind*, 231 – 232.

mentally ill later in life.[99] As they succumbed to mental illness, their degeneracy, if they had children, became inheritable. Some minds were sound and stable while others were erratic and unstable. No two minds were the same.[100] There existed, through nature's imperfections, "varieties of unsound moral temperament."[101] These varieties tended to breed insanity. Positive mental states which society alienated were more likely to become the "natural degenerative product in the next generation."[102] Insane varieties conceived insane children who lacked moral and social senses.[103] The social health concern that Maudsley emphasized went beyond Darwin's original works and made hereditary insanity and degeneracy a public concern.

Varieties of insanity, or deranged mental organizations, were viewed as bridges between humanity and nature. It was science's duty to exploit and decipher humanity's relation with nature.[104] Maudsley thought that savages arose to higher orders of development through several generations of civilization.[105] However, generations of congenital defect produced severe degeneracy. Children inherit mental and physical qualities from both the father and mother. Psychological neuroses that caused mentally and physically ill constitutions were inheritable and predetermined the individual to degeneracy. Sometimes this predetermination also implied criminality. Throughout their lives, children exhibited characteristics inherited from past ancestors. Stable mental organizations tended to pass without change while other unstable forms passed in

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[99] Ibid., 237.
[100] Maudsley, *Life in Mind and Conduct*, 350.
[101] Ibid., 353.
[102] Ibid., 354.
[103] Ibid.
[104] Maudsley, *Body and Mind*, 53.
[105] Ibid., 57.

"decomposed forms or new forms of variations."[106] These variations were notable "throwbacks," or reversion, to ancestors. Epilepsy and other neuroses were characteristics of inherited mental disorganization. Psychological neuroses, Maudsley stressed, served as evidence of mental forms reverting to ancestral variations. These mental reversions occasionally met environments which favored them and allowed them to reproduce in future offspring. The "popular saying in respect of a vicious person that he comes of a bad stock [to explain antisocial tendencies] is an instinctive acknowledgment of" reversion as a principle of inheritance.[107] Maudsley applied the idea of the throwback medically to several neuroses by using the "biography," or family history. Individuals' mental disorganizations were diagnosed by their family history. Literature in the late Victorian period embraced the biography and the idea of throwbacks. Victorian literature, coupled with increasing support for Maudsley's ideas, illustrated the impact that hereditary degeneracy had on the intellectual culture of England.

Medical Conceptions of Reversion in Literature

Ideas of throwbacks, which used the biography and acknowledged a person's reversion both mentally and physically to ancestral stock, formed the basis of *The Hound of the Baskervilles*. Born in 1859, Arthur Conan Doyle emerged in an England full of contentious evolutionary theories. He entered Edinburgh University to study medicine in 1876 where he mingled with a profession known for its focus on principles of

[106] Maudsley, *Life in Mind and Conduct*, 343.
[107] Ibid.

inheritance. After finishing school, Doyle began working in the medical profession until abandoning it in 1891 to pursue writing. In 1886, he created Sherlock Holmes with the publication of *A Study in Scarlet*. By 1901, Doyle met critical success with *The Hound of Baskervilles*. Published initially in the magazine the *Strand*, Doyle captured an era in which England's intellectual culture centered their preoccupations on hereditary degeneracy. Being called to investigate a supernatural case in Dartmoor, Sherlock Holmes remained skeptical of the Baskervilles' family curse. Sending Dr. Watson to conceal his own presence in Devonshire, Holmes slowly investigated the people surrounding the Baskervilles along with Dr. Watson's personal reports. Holmes became suspicious of Stapleton, the naturalist supposedly not kin to the Baskervilles, after seeing a portrait in the Baskervilles' home. Holmes finds the portraits lining the hall fine, asking about the "Cavalier opposite to me [Sherlock] – the one with the black velvet and the lace?" Henry Baskerville responds, "Ah, you have it right to know about him. That is the cause of all the mischief, the wicked Hugo [of 1742], who started the Hound of the Baskervilles." Watson noticed that the portrait of Hugo impressed Holmes who remained fixed upon the portrait during supper.[108] After dinner, Holmes asked Watson, "Is it [the portrait of Hugo] like anything you know?" Watson cried out, "Good Heavens […] The face of Stapleton had sprung out of the canvas." Watson believed that the portrait of Hugo might actually be the portrait of Stapleton. Holmes refuted his conclusions. Instead, the portrait was an "interesting instance of a throwback."[109] Doyle, having been very familiar with the medical field, used the concept of a throwback to suggest the

[108] Arthur Conan Doyle, *The Hound of the Baskervilles*, ed. Christopher Frayling (London: Penguin Classics, 2001), 137. Originally printed in 1902.
[109] Doyle, *The Hound of Baskervilles*, 138.

retrogression of the family line from Hugo and its inherited effects on Stapleton's criminal instincts. Stapleton had been the perpetrator of the hound attacks. He held the hound on the Moors, releasing the beast to plague the minds of the Baskervilles and drive them insane. Stapleton sought to become the inheritor of the estate. Holmes discovers Stapleton to be a descendent of Rodger Baskerville, brother to the good Charles Baskervilles. Rodger Baskerville fled to South America, gaining a sinister reputation as a degenerate. He passed his degeneracy to his only son whom he named after himself. His son changed his name to Stapleton in order to move back to England. He was both physically and morally a throwback to Hugo, having inherited Hugo's degenerative characteristics from his father.[110]

Doyle uses the biography to discuss the nature of Stapleton's crimes. Holmes, in solving the case, commented to Watson that "never have we helped to hunt down a more dangerous man than he [Stapleton] who is lying younder' [points to Stapleton being swallowed by the Moor]."[111] One of Sherlock's most dangerous suspects was a man whom embodied the hereditary degeneracy and criminal tendencies that plagued Victorian England's cultural landscape. Doyle was not the only the author addressing degeneracy in literature.

Robert Louis Stevenson (1850 – 1894) inked and printed his story of degeneracy, "Olalla," in the 1885 Christmas issue of *The Court and Society Review*. Like the Baskervilles, Olalla's family contained instances of throwbacks. When the narrator visited Olalla before his departure from the fallen noble family's house, she asked him to

[110] Ibid., 157-161.
[111] Ibid., 155.

look at the portraits lining the wall. Asking the narrator, "Have you looked at my mother or Felipe [her brother]? Have your eyes rested on that picture by your bed?" The woman in that picture had died ages ago. Olalla pleads for him to "Look again: there is my hand to the least line, there are my eyes and my hair."[112] Stevenson designed Olalla as a product of generations of degenerates.

Similarly, le Fanu's vampire, Carmilla, was crafted as a result of hereditary degeneracy's perceived ongoing threat to the public. Joseph Sheridan le Fanu (1814 – 1873) seems to have created *Carmilla* under the influence of medical conceptions of hereditary degeneracy. Finished in early 1872, le Fanu serialized *Carmilla* in *The Dark Blue* in 1871. Shortly after, he included the story in *In a Glass Darkly*, his short story collection published in 1872.[113] In the story, Laura, daughter of an Austrian noble, found a portrait of her ancestor Countess Mircalla Karnstein of 1698. Like *The Hound of Baskervilles,* the portrait eerily resembled Carmilla who commented that she too might be a descendent of the countess as well.[114] The Karnsteins were a "bad family […] It is hard that they should, after death, continue to plague the human race with their atrocious lusts."[115] When revealed as Mircalla, an anagram for Carmilla, Carmilla becomes a metaphor of hereditary degeneracy. Being a vampire, she caused illness to her prey by consuming their blood. She was a plague that transmitted through the blood similar to degeneracy as it passed to offspring. Le Fanu illustrated the anxiety caused by a public

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[112] Robert Louis Stevenson, "Olalla," in *The Merry Men and Other Tales and Fables* (New York: Charles Scribner's Sons, 1887), 211.
[113] Joseph Sheridan le Fanu, Introduction to *Carmilla: A Critical Edition*, ed. Kathleen Costello-Sullivan (New York: Syracuse University Press, 2013), xvii.
[114] Joseph Sheridan le Fanu, *Carmilla*, 1872, repr. in *Carmilla: A Critical Edition*, ed. Kathleen Costello-Sullivan (New York: Syracuse University Press, 2013), 40.
[115] Ibid., 80.

health concern over degeneracy by using the vampire. Not only did Carmilla infect her own lineage, as shown with Laura, but she further made the surrounding towns full of death like a plague. Laura hoped "there [was] no plague or fever coming," - Carmilla was that plague.[116] When faced with the idea of the plague being religious in nature, Carmilla vehemently rejected the idea of the plague being sent by God. The plague, le Fanu wrote, was "natural. Nature. All things proceed from nature."[117] Carmilla appeared similar to a hereditary disease infecting people at their life source. She became a metaphor for hereditary degeneracy; her descendants, Laura and her father, were both given degenerate qualities. Laura's father was prone to illness, making him an invalid.[118] Similarly, another famous fictional woman would embody dangerous hereditary degeneracy.

Printed in *The Whirlwind* in 1890, Arthur Machen (1863 – 1947) wrote *The Great God Pan.* He begins the story with Raymond, a doctor, performing experimental surgery on a young woman named Mary. Minutes after the surgery, Mary becomes a hopeless idiot, having "seen the great God Pan."[119] Raymond claimed to Mr. Clark, his friend, that he could show people the real world through his experimental surgery.[120] When Machen transitions to the foreign character of Helen Vaughan, who takes several children on mysterious journeys into the woods, a young boy, straying a little too far, becomes traumatized after witnessing Helen dancing with a naked man. Upon seeing a satyr's head on an old Roman ruin, and saying that the satyr resembled the man that was with Helen,

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[116] Ibid., 32.
[117] Ibid., 36.
[118] Ibid., 48.
[119] Arthur Machen, *The Great God Pan*, 1894, repr. in *The Great God Pan and Other Horror Stories*, ed. Aaron Worth (Oxford: Oxford University Press, 2018), 14 – 15.
[120] Ibid., 10.

he descends into epileptic fits, violent hysteria, and eventual imbecility.[121] Helen lures another child into the woods who returns with hysteria. Helen then disappears.[122] Years after Mary's experimental operation, a mysterious woman shows up. Clark meets with his friend Villiers, who relates to him the deplorable state of his friend Herbert. Herbert had once been very prosperous until he had married. He descended into a degenerate state becoming a vagrant. The woman he had been with "corrupted him body and soul."[123] Villiers and Clark investigate Herbert's former wife together. Clark gazed "intently at the small pen-and-ink sketch of a woman's head […] Clark gazed still at the face." While viewing the sketch, he heard a voice saying, "Clark, Mary will see the God Pan!" He then asked, thinking of Mary, who the woman was. Villiers replied, "That is the woman whom Herbert married." Clark realized that the woman was not Mary; but had all the features of Mary.[124] At the heart of a rash wave of suicides lay Mrs. Beaumont who, Clark discovered, had met with the gentleman before he died due to a "shock of nerves." Mrs. Beaumont, Clark learned, was the former Mrs. Herbert, who retained all the features of the woman from the photo. Mrs. Beaumont was Helen.[125] Villiers and Clark demanded that Helen hang herself. If she refused, Clark and Villiers said that they would expose her to the public. Helen accepts death and commits suicide. Upon death, she transforms back and forth from a man into a woman until finally shifting into a jellylike substance. Helen resembled Mary in her portrait, making her Machen's example of a throwback. Mary, pregnant during Raymond's operation, had a child named Helen. Machen's usage of the

[121] Ibid., 18 – 19.
[122] Ibid., 20.
[123] Ibid., 22.
[124] Ibid., 30 – 31.
[125] Ibid., 46.

throwback illustrates hereditary degeneracy passing from Mary, due to her operation, to Helen in a single generation. However, the operation is also suggested to be almost supernatural. While many physicians agreed on the inheritability of degeneracy, the causes of degeneracy remained debatable. In a letter from Raymond to Clark, Raymond suggested that the operation resulted in the God Pan impregnating Mary. Madness impregnated her. Raymond attempted to raise the child, but she became too much and he had to send her away. Madness followed her; Raymond commented to Clark that he had already known of the boy who became hysterically mad and an imbecile.[126] Machen presents Helen not only as personified madness in this sense, but also as a product of madness in procreation. Hereditary degeneracy plagued the minds of Victorians. Procreation, or transferring degenerative natures to offspring, brought marriage and children under the gaze of medical professionals.

According to Maudsley, marriage allowed for the creation of insane varieties due to offspring inheriting mental organizations. With inherited degeneracy, no effort changed or made up for the taint. Free will depended on an individual's nature, which was inherited and survived as a "means and instrument between motive and act." Maudsley emphasized that the hereditary nature of an individual influenced the person's actions and will. Professionals embraced this ideological position which stressed hereditary degeneracy's role in producing insanity and criminality. Sir Arthur Conan Doyle's character Stapleton exemplifies hereditary degeneracy's role in criminal insanity. Several prison surgeons, in conjunction with Maudsley's observations, observed an increase in the number of criminals who were "weak-minded or epileptic, or come of

[126] Ibid., 53 – 54.

families in which insanity, epilepsy, or other neurosis exist[ed]." Many of the prisoners had died from diseases that revolved around the nervous system. These degenerate criminals, professionals believed, existed as a distinct criminal class or species marked by retrograde characteristics. They had inherited a disorganization of the mind. Their strong impulses prompted rare occurrences of good actions and more occurrences of bad actions. According to Maudsley, conscience corrected some of these actions but, due to habit and self-command being inherited, the conscience likely did not correct all negative actions - especially if natural instinct dictated anti-social behavior. Even in civilizations like England where man was most advanced, argued Dr. William Benjamin Carpenter (1813 – 1885), there existed large numbers of people "in whom a bad heredity and depraved surroundings have tended to foster the lower animal nature." However, not all physicians and alienists abandoned treatment. Some thought that degeneration could be corrected to some degree, if caught early. Criminals composed the true class of "fallen man." However, Carpenter argued that vice and virtue were subject to breeding; both could be bred in and out of generations of families. Maudsley had ascertained that families of criminals suffered degeneracy due to close relations, through inheritance, to epilepsy, insanity, and other neuroses.[127]Cesare Lombroso (1835 – 1909), Italian physician and criminologist, agreed with Maudsley.

Lombroso applied ideas of heredity to neuroses which marked criminals as a different species. More female criminals suffered from moral insanity and hereditary

[127] Maudsley, *Body and Will*, 56 – 65. Quotations on 56, 65; William B. Carpenter, *Nature and Man: Essays Scientific and Philosophical* (London: Kegan Paul, Trench and Co., 1888), 406. Quotation on 406.

criminality than male criminals.[128] Dr. Alexander Morison (1779 – 1866), a Scottish physician and early alienist, further argued that "transmission of a disposition to insanity, is said to be more frequent in the mother than the father." If the condition existed in both parents then it was a certainty that the child would be insane in life.[129] The family history of the patient became important by it revealing the source of the afflictions in many degenerate criminal cases. Many female criminals, as observed by Lombroso, also exhibited characteristics of epilepsy, as commonly observed in their family history.

Professionals believed that epilepsy, among many other pathological neuroses, was hereditary and implied that entire epileptic families existed. Dr. William Alexander Francis Browne (1805 – 1885), an asylum physician that pioneered forms of occupational and art therapy, warned that hereditary epilepsy had been shown to exist. Individuals suffering from forms of epilepsy had inherited it from their ancestors. Some of its features, argued Browne, such as slight deviations of character and brief incoherence, made it difficult to diagnose epilepsy properly. Epileptic crimes in which the patient had no recollection or true perception of the act further complicated medical observations. Monstrous and motiveless crimes which were "modified by the hereditary or paroxysmal tendencies," should always be investigated as to their origin argued Dr. Browne.[130]

Family histories that contained neuroses, if proven in court, cast doubt on the defendant's culpability. Criminals were often characterized or argued to be suffering

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[128] Caesar Lombroso and William Ferrero, *The Female Offender*, ed. W. Douglas Morrison (London: T. Fisher Unwin, 1895), 293.
[129] Alexander Morison, *Outlines of Lectures on Nature and Treatment of Insanity*, 4th ed. (London: Longman, Brown, Green, and Longmans, Paternoster Row, and Samuel Highley, 1848), 295.
[130] William Alexander Francis Browne, *Epileptics: Their Mental Condition* (London: J. E. Adlard, 1865), 21.

from epilepsy. As a result, they were degenerates.[131] People with emotional disturbances, as argued by medical professionals, had defective judgment and were becoming degenerative. Emotions marked the nature of the individual and resulted from an inherited nervous system.[132] Criminals were almost always diagnosed with predispositions to forms of epilepsy which caused them to commit crimes. In one case, a woman, whose brother nearly murdered her with a knife, had an epileptic sister that gave birth to a deranged daughter. The family's hereditary predisposition to epilepsy explained why the woman's brother attempted to murder her.[133] Physicians continually referred to the criminal's family history to find such inheritable predispositions to degeneracy. Degeneration caused retrograde movements that contradicted perceived notions of evolution's progressive movement. Retrograde characteristics, including epilepsy, replaced healthy characteristics to produce morbid human varieties.[134]

Alienists and physicians accepted as fact that degenerative criminals lacked morality. Criminal actions, they believed, were because of their predispositions to moral insanity. People lacking morality were defective and were on the "road to, or marks [of], race degeneracy." Moral degenerates spread degeneracy by having children. These children became part of the morbid variety.[135] Antisocial moral developments, ranging from epilepsy to homosexual relationships, predisposed the individual to extreme forms of insanity.[136] Medical professionals believed that insanity resulted from moral or

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[131] Ibid, 22.
[132] Maudsley, *The Physiology and Pathology of the Mind*, 149.
[133] Maudsley, *Body and Mind*, 66.
[134] Maudsley, *The Physiology and Pathology of the Mind*, 247 – 248.
[135] Maudsley, *Body and Mind*, 67.
[136] Maudsley, *Body and Will*, 293.

physical reversion. They agreed that the cause of insanity was mostly physical, with defective organ development commonly being the cause. When faced with no physical evidence of defective organ development, doctors determined the cause of insanity to be the individual's defective moral nature. It was assumed that nothing accidentally caused madness. Several causes linked together caused most psychological diseases. Insanity, however, sometimes rested in the nature of the person and appeared because of a series of linked causes.[137] Alienists who studied the causation of insanity agreed with the linked causes of insanity.[138]

Individuals, argued Dr. Alexander Morison, exhibited their hereditary dispositions to insanity through their inherited characteristics. Those inherited characteristics, when coupled together, were enough to produce insanity.[139] Maudsley also recognized this fact and expanded on it in his tyranny of organization, which stated that thoughts, feelings, and actions were organized into the nervous system, modifying its development. Moral manifestations, as a result, determined physical organization. Moral insanity produced physical changes within the nervous system over the period of the individual's mental life.[140] These morbid peculiarities were believed to have marked some inherited disorganization of the brain.[141] Maudsley stressed that it "shattered moral character, […] especially in young children." However, the extent of the damage to the nerve structure remained a mystery. In children, epileptic convulsions effaced the conscience. Children of good constitution who suffered from such fits were made morbid in nature and lacked

[137] Maudsley, *The Physiology and Pathology of the Mind*, 226-227.
[138] Maudsley, *Body and Mind*, 67.
[139] Morison, *Outlines of Lectures,* 294.
[140] Maudsley, *The Physiology and Pathology of the Mind*, 228.
[141] Maudsley, *Body and Mind*, 67.

moral senses. Englishmen and Englishwomen faced a degenerative environment making everyone at every age predisposed to insanity. Given people's perception of the inheritability of these dispositions to moral insanity, it seemed that degenerates would soon replace the healthy species. Acute mania, medical professionals observed, created similar moral changes in teenagers of fourteen and fifteen years old. Persons suffering from moral insanity may have not known right from wrong. Medical opinion held that such persons remained unimpressionable by good influence; eventually, the social characteristics of the individual became nonexistent.[142] Heredity, according to doctors, not only dictated the appearance of epilepsy, but also neuralgia.

Neuralgia, or intermittent pain along the nerve, remained thought of as hereditary. It had been observed, like epilepsy and other neuroses, to exist in a family's bloodline. Families with neuralgia were also observed by doctors to exhibit other insane neuroses, including epilepsy. Medical professionals believed that these hereditary defects suggested imperfection in the inheritance of the central nervous system. Certain fibers and cells within the defected nervous system only lived for a certain amount of time in perfect harmony with their environment. Drinking and other immoral vices tended to produce degeneration in the nervous centers that also resulted in neuralgia.[143] Inherited nerve organization affected individuals' conscious acts. In this manner, stated Dr. Jackson, it was believed that epilepsy and neuralgia caused immoral character. Mental disease elements degenerately affected the brain.[144] Future generations that inherited the

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[142] Maudsley, *Body and Will*, 261 – 263. Quotation on 261.
[143] Radcliffe et al., *Diseases of the Spine and of the Nerves* (Philadelphia: Henry C. Lea, 1871), 155 – 156.
[144] J. Hughlings Jackson, *The Factors of Insanities*, 1894, repr., (London: Danks and Son, 1894), 17.

degenerative cerebral centers would organize them into their constitution. These degenerative cerebral centers, argued Maudsley, caused negative actions, such as crimes, to become the nature of the individual. Nervous center afflictions in one generation concentrated in the next generations and affected the sensory and ideational centers. As a result, families developed predispositions to insanity. One family member may have been insane while another may have been epileptic. Some individuals suffered from nervous degeneration through the senses. Others suffered through their intelligence-organizing consciousness or the nerves.[145] Increases in strength appeared simultaneously in generations of family which suffered from epileptic, moral, or neuralgia insanity.

Insane individuals were observed to possess excessive strength, as if being assisted by a supernatural agent.[146] Maudsley had witnessed degenerate children, birthed from insane parents, containing instances of "morbid action" in the sensory-motors and reflexes. A child, he wrote, was found "raving mad as soon as it was born." This case found traction in medical circles due to its extreme strength in its legs and arms. Four women were required to restrain the child.[147] Similarly, le Fanu's Carmilla displayed the same supernatural strength as a vampire.

Laura grew concerned when Carmilla exhibited traits associated with the medically certified insane. She asked herself if "she [Carmilla], notwithstanding her mother's volunteered denial, [was] subject to brief visitations of insanity."[148] General Spielsdorf, having lost his daughter to Carmilla, exposed her as a vampire when she

[145] Maudsley, *Body and Mind*, 68
[146] Spencer, *Principles of Sociology*, vol. I, 236.
[147] Maudsley, *The Physiology and Pathology of the Mind*, 300.
[148] Le Fanu, *Carmilla*, 30.

entered the chapel. They both flew into a rage. Spielsdorf grabbed an axe to put an end to the degenerate in front of him. Suddenly, as the axe swung toward her, Carmilla dodged and grabbed the wrist of the general, forcing him to drop the axe.[149] A teenage girl had the strength, as described by Maudsley and other doctors, to force a military man to drop his weapon. The vampire's connection to Victorian medical perceptions of degeneracy was much more extensive.

Vampires took on characteristics of degenerates suffering from epilepsy and suicide. Maudsley provided case examples where patients, who were admitted to asylums, suddenly experienced suicidal and homicidal maniac impulses. One patient was observed to be suffering from epileptic maniac fits. The patient had the symptoms of those resembling epileptic seizures of petit mal. Beginning in his toes, he complained that a strange feeling rose to his head, which led to momentary lapses in consciousness. During these attacks, he felt apt to violence. The attacks disappeared for a long time, since he was sixteen years old, but returned much later in intervals. Sleeplessness almost always preceded his seizures. Violence followed fits of epileptic vertigo, an epilepsy very similar to petit mal, in which the individual lost consciousness.[150] Other professionals validated such cases by presenting their own observations. Dr. Armand Trousseau (1801 – 1867), a French internist who created new methods in treating croup and malaria, commented that "sudden and irresistible impulses are of usual occurrence after an attack

[149] Ibid., 88.
[150] Maudsley, *The Physiology and Pathology of the Mind*, 353 – 354.

of petit mal, and pretty frequent after a regular convulsive fit."[151] Many of these patients attempted to escape through suicide, similar to Carmilla.

Upon her arrival, Carmilla's mother describes her daughter as in "delicate health, and nervous, but not subject to […] any kind of seizure […] being in fact, perfectly sane." [152] She attempts to reassure Laura's father, as if trying to hide her daughter's degenerative qualities. Similar to epileptics, Laura observed Carmilla expending "all her energies […] to suppress a fit." She later notices how Carmilla looks at her greedily with "a momentary glare of insanity." Eventually that glare collapsed into violence with Carmilla feeding on others.[153] Her vampiric feeding on Laura represented hereditary degeneracy corrupting Laura. She became unconscious after being bitten while being plagued by visitations of demons in her dreams. Quickly, le Fanu wrote, she became sleepless.[154] Carmilla haunts Laura long after her death, mirroring medical descriptions of reoccurring epileptic fit.[155] As the household grows more worried about Laura's health, they call for doctors. The doctors witness what is believed to be a seizure that, without medical assistance, would extinguish Laura's life in a fit.[156] Le Fanu characterizes the story's main characters, Laura and Carmilla, using medical conceptions of degeneracy. Vampires exhibited, during the day, an "appearance of a healthy life" similar to those who were predisposed to degeneracy. When the vampire became

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[151] Armand Trousseau, *Lectures on Clinical Medicine*, trans. P. Victor Bazire (London: The New Sydenham Society, 1868), 27, quoted in Henry Maudsley, *The Physiology and Pathology of the Mind* (London: Macmillan and Co., 1868), 354.
[152] Le Fanu, *Carmilla*, 21 – 22.
[153] Ibid., 51.
[154] Ibid., 46 – 47, 52.
[155] Ibid., 96.
[156] Ibid., 62.

"disclosed to light in their coffins," as insanity betrays its character to the medical observer, "they exhibit all the symptoms" of a degenerate.[157] Similarly, epilepsy remained hidden in some insane patients. Patients with incomplete attacks appeared entirely themselves. They continued their conversation with people around them, performed actions that seemed intended by their will, and when the condition stopped, the patient had no recollection of what happened.[158] Le Fanu's usage of medical conceptions goes further.

In *Carmilla*, people, according to the Baron, became vampires when a wicked person attempted to extinguish their life. By committing suicide, the person became a vampire.[159] Morison argued that suicidal mania and suicidal symptoms resulted from a predisposition to insanity and from the malformation of the nerves that created an inability to adapt to one's surroundings. Individuals that attempted suicide likely derived the condition from their ancestral families in which suicidal impulses and insanity occurred. Through hereditary transmission, suicidal impulses destroyed bloodlines. Individuals with hereditary suicidal insanity were observed to have experienced suicidal impulses at or around the same age.[160] Unconscious activity allowed professionals to perceive the act of sleepwalking as another sign of degeneracy.

Dr. William A. Hammond's, Surgeon General of the US Army Medical Corps, research into unconscious activity found critical reception in England. His research suggested that the imagination was activated during sleep, but did not control the human

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[157] Ibid., 93.
[158] Browne, *Epileptics: Their Mental Condition*, 15.
[159] Le Fanu, *Carmilla*, 95.
[160] Morison, *Outlines of Lectures*, 224.

body by itself without the causes impressed on the intracranial circulation.[161] Epidemics of nightmares prevailed under certain forms. Ideas of vampirism existed all over the world. Charles Nodier (1780 – 1844), an influential French author that introduced younger Romantics to Gothic literature, explained that every family in Morlachia had a vampire or its vukodlack. Vukodlacks appreciated their own insanity and sometimes combated it with medicine and prayer. Sometimes they reverted to suicide and were often men or women of rank. In the case of *Carmilla,* the vukodlack was a noble. Only during sleep did they become monsters that fed on the living and awoke others in terror.[162] Carmilla appeared in the dreams and sleepless nights of her victims, mirroring Hammond's conclusions. She appeared to Laura before biting her as a "black animal that resembled a monstrous cat." As a beast, Carmilla "continued toing and froing with the lithe sinister restlessness of a beast in a cage. […] I [Laura] was terrified." Laura awoke with a scream.[163] When committing such acts, Carmilla claimed to be dreaming.[164] Doctors were unable to help her to recover.[165] Like Nodier's vukodlacks relying on prayers, Carmilla bought a talisman designed to ward off vampires.[166] She ignored religious superstitions and argued that the talisman was dipped into an antidote for malaria or a bloodborne pathogen similar to the vampire.[167] Instead of religious cures, vampires came under the lens of science as a disease to be combated. Le Fanu did not

[161] William A. Hammond, *Sleep, Sleeplessness, and the Derangements of Sleep* (London: Simpkin, Marshall and Co., 1892), 58.
[162] Hammond, *Sleep*, 138 – 139.
[163] Le Fanu, *Carmilla*, 46.
[164] Ibid., 25-26.
[165] Ibid., 36.
[166] Ibid., 34-35.
[167] Ibid., 50.

mistakenly use medical descriptions and terminology to describe vampires. His usage of sleepless symptoms was also characteristic of degeneracy.

Victorian England faced several instances of sleep disorders which, medical professionals argued, were forms of degeneracy. Sleepless patients brought vampires to the minds of professionals and the public since sleep disorders involved unconscious activity at night. In one such case, the patient had fits of nightmares. Once asleep, he complained of demons sitting on his chest. These intense dreams continued a few minutes after falling asleep.[168] Nightmares, doctors agreed, acted like diseases upon the body and produced both mental and physical deterioration. Sufferers of sleeplessness and intense dreams became, over time, mentally and physically weak. After several nights, the patient's pupils contracted and he grew pale. Fighting the diseased nightmares, he grew exhausted. He was barely able to compose some lines describing the condition of his mind and body. In the early 1700s, witnesses of sleepwalkers attributed somnambulism to supernatural causes. Sleeping individuals performed intricate actions typical of conscious activity. Science, having expelled the idea of sleepwalkers being possessed, had yet fully developed a theory to explain unconscious activity and the involvement of the will.[169] Dr. Hammond expanded on ideas of inheritance to include the sleepwalker. Patients experiencing sleepwalking had inherited it, he believed, citing the fact that a patient's brother had the same symptoms, proving that sleepwalking ran in the bloodline. Sufferers of somnambulism were full of family histories of restlessness. Physicians identified sleep

[168] Hammond, *Sleep*, 142.
[169] Ibid., 147 – 149.

derangements and its hereditary nature as a form of insanity caused by deranged nervous systems.[170] Le Fanu uses similar medical conceptions when creating Carmilla's character.

Awaking from a nightmare, Laura found Carmilla covered in blood before she vanished. When discovered later, Carmilla claimed that she had no recollection of her actions. She only recalled a restless night "of bewilderment and darkness." Like a sleepwalker, she claimed to "know absolutely nothing." Patients suffering from somnambulism made similar claims when it came to their unconscious activity. Laura's father wished to tell his theory, but had to first ask Carmilla if she had "ever been suspected of walking in [her] sleep." Carmilla replied, "Never, since I was very young indeed."[171] Her childhood sleepwalking illustrated her deranged nervous system and predisposition to insanity. The vampire in this deranged form became a metaphor for degenerates and their deranged nervous systems in Victorian England. Sleepwalking and fits of nightmares seemed similar to symptoms of certain epilepsies, making it hard to distinguish between the two.

In many cases of epilepsy, stated Jackson, the body lacked the general epileptic characteristics and the occurrence of fits. Only a couple of convulsions may have occurred.[172] Despite one or two epileptic convulsions, some patients experienced no convulsions which made it hard to detect epilepsy. Between the best constituted individual and the most insane individual, Jackson believed that there were people that

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[170] Ibid., 159, 237, 173.
[171] Le Fanu, *Carmilla*, 57.
[172] J. Hughlings Jackson, *Cases of Disease of the Nervous System in Patients The Subjects of Inherited Syphilis* (London: J. A. Churchill and Sons, 1868), 5. Originally printed in *The Transactions of the St. Andrews' Medical Graduates Association*, vol. I, 1868.

composed the line of continuation from sane to insane. These intermediates shared the nature of both the healthy and the degenerates. At the border of insanity, "persons in their modes of thought, feeling[,] and will show[ed] marked peculiarities or positive eccentricities which make them remarked as [un]like the ordinary run of men." While these individuals appeared normal, they were believed to have had insane temperaments. Their minds were predisposed to insanity and betrayed themselves through their eccentricities.[173] The more that alienists and physicians published research, the more insanity marked hereditary degeneracy.

Maudsley remarked that some people strongly and arrogantly "disclaim or deny most earnestly the existence of any hereditary taint, when all the time the indications of it are most positive." Prevalence of degeneracy in the royal families, Maudsley wrote, failed to make the stigma of degeneracy as a fashionable occurrence.[174] Individuals that suffered from degeneration and belonged to wealthy families were stigmatized. Dr. William Browne, after diagnosing patients. observed many of them attempting to conceal their diagnoses from their family. Family members, unaware of the diagnoses, called for physicians to treat the degenerate family member as they entered the later stages of the derangement in asylums. Physicians observed the later stages of degeneration due to accidental attacks which occurred randomly and not because of arrangements made by the family.[175] Physical appearances, such as muscle expressions in the face and body,

[173] Maudsley, *Body and Will*, 283-284. Quotation on 284.
[174] Maudsley, *The Physiology and Pathology of the Mind*, 243-244. Quotation on 244.
[175] Browne, *Epileptics: Their Mental Condition*, 4.

were believed to have betrayed the individuals and "their moral character."[176] Le Fanu uses similar ideas to describe Carmilla.

As a Christian funeral passed by, Carmilla's face underwent extreme change, which illustrated her moral insanity. She alarmed and terrified Laura. Carmilla's face became "horribly livid; her teeth and hands were clinched, and she frowned and compressed her lips […] and trembled all over with a continued shudder as irrepressible as ague. […] gradually the hysteria subsided."[177] Her physical appearance betrayed her fit and her predisposition to degeneracy. Patients with unsound temperaments, stated Maudsley, were predisposed to degeneracy. They became marked by defective moral feelings and actions that led them into madness or badness.[178] Phthisis, or tuberculosis, and vampirism were closely allied in the cultural mindset of Victorian England.

Before science aided humanity, people conferred with religious authorities to understand the physical and mental degeneration caused by Phthisis.[179] Early phthisis, or tuberculosis, was, like other forms of insanities, highly difficult to diagnose. Its hereditary tendency made it like other neuroses – a threat to society. The insane often masked phthisis. Its hereditary predisposition made it apt to develop into insanity. Seven percent of the insane experienced insanity alongside tuberculosis. After many years of family degeneration, Maudsley and other professionals believed the two diseases

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[176] Maudsley, *Body and Will*, 284.
[177] Le Fanu, *Carmilla*, 32.
[178] Maudsley, *Body and Will*, 285.
[179] Gregory W. Rutecki, "Consumption and Vampires: Metaphor and Myth Before Science," *Hektoen International: Journal of Medical Humanities* 9, no.2 (Spring 2017): https://hekint.org/2017/03/04/consumption-and-vampires-metaphor-and-myth-before-science. (accessed December 6, 2018).

appeared to occur consecutively.[180] The sufferers appeared pale, coughing up blood, similar to vampires.[181] Hysteria over vampires usually broke out during outbreaks of phthisis. Phthisis remained a mysterious condition until 1882 when Robert Koch identified the M. tuberculosis. He gave science domain over the mystical underpinnings of phthisis. Robert Louis Stevenson embodied the Victorian era's threat of hereditary degeneracy and its phthisic connection in "Olalla."

Readers interpreting "Olalla" as a vampire story do so unaware of the medical research in hereditary degeneracy and phthisis in the late 1800s. Recovering from his wounds, the Scottish soldier lay in a Spanish hospital until the doctor suggested for him to take up temporary residence with a local noble family. Like le Fanu's *Carmilla*, the noble family created by Stevenson was "once a great people […] [but they had] fallen to the brink of destitution."[182] Descending from a degenerative noble father, the old half-witted woman transferred degeneracy to her children.[183] Felipe, the son, had imbecilic characteristics with a face and a mind of a child. He had reoccurring fits with causeless anger.[184] Shortly after arriving at the estate, the protagonist heard screams.[185] Consistent screams produced doubt of Olalla's, Felipe's sister, healthy state. The "savage and bestial strain that ran not only through the whole behavior of her family," wrote Stevenson, burrowed into the foundations of their love for each other.[186] In an attempt to speak to Olalla, the Scottish soldier pushed his hand through a pane of glass, cutting his wrist.

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[180] Maudsley, *Body and Mind*, 98.
[181] Rutecki, "Consumption and Vampires."
[182] Stevenson, "Olalla," 161.
[183] Ibid.," 163.
[184] Ibid.," 167, 170, 172.
[185] Ibid.," 185.
[186] Ibid.," 208.

Hoping for Olalla to come to his aid, he searched for her only to find her grandmother. Seeing his cut wrist, "her great eyes opened wide, the pupils shrank into points, […] she came swiftly […] stooped and caught [him] by the hand," biting him to the bone. Correlating to descriptions of insane patients, the degenerative grandmother experienced supernatural strength and "sprang at [him] again and again, with bestial cries […] her strength was like that of madness."[187] Like a vampire, Stevenson's character sought blood. However, unlike the supernatural creature, Stevenson's vampire was the modern medical conception of a vampire – a degenerative suffering from phthisis. The last member of a tainted bloodline is likely to die insane, or phthisic, or both argued Maudsley. They were both considered to be "concomitant effects in the course of degeneration."[188] Comparing "Olalla" to Maudsley's medical research reveals the grandmother's actions as a result of her phthisic lack of healthy blood. Hereditary arguments concerning inheriting insane temperament also attributed insanity to physical injuries.

Patients suffering from physical injuries to the cranium, wrote Maudsley, suffered "marred moral character and will." After being injured, the brain began to slowly degenerate for an extended period of time, producing irritability and gradually weakening the mind. Shortly after the accident, "the person who appear[ed] perhaps to be all right […] turn[ed] out to be all wrong, and irretrievably wrong, years after it." The suffering patient remained extremely excitable. Frequent outbreaks of anger culminated in maniacal fury. Deliriums arose from fevers. Over the years the patient became exhausted

[187] Ibid.," 205 – 207.
[188] Maudsley, *Body and Mind*, 98.

physically and mentally, leading to early dementia and morbid degeneration. It was believed that injuries to the head developed temperaments and "quality of mind [of] one who ha[d] inherited a distinct tendency to insanity."[189] Characteristics of robust constitutions, dark hair, and strong or violent passions, argued Morison, were found in those with inherited degeneracy. Those that retained such characteristics were predisposed to fits of mania. People of light-colored hair, however, were less likely to develop furious tendencies and less likely to have fits of mania. People's tendency to insanity was further measured by their eccentricities.[190] Injuries to the brain were thought to have led patients to unstable states. Fever-producing deliriums produce anti-social actions, becoming "ever increasing [in] mischief as [the] habit makes the way of disorder easier and the return to order harder."[191] Insane deliriums were considered by medical professionals to be hereditary and were exhibited, in great number, in the patient's mind, manner of life, and study.[192]Despite other probable factors in the production of insanity, Maudsley and other physicians and alienists never ignored the power of heredity.

The entire nature of the individual rested on their inborn nature. No amount of labor could cure corrupted inborn nature. Maudsley believed that curing individuals was as hopeless as "attempt[ing] to rear the massive structure of a royal palace upon foundations […] only for a cottage as to impose the superstructure of a large, vigorous, and complete culture upon the rotten foundations which an inherited taint of nerve

[189] Ibid., 270 – 272. Quotation on 270; Maudsley, *Body and Will*, 270 – 271. Quotation on 271.
[190] Morison, *Outlines of Lectures*, 297.
[191] Maudsley, *Body and Will*, 272.
[192] Morison, *Outlines of Lectures*, 163.

element implies."[193] The stronger the hereditary disposition, the less probability there was to obtain a cure. Morison agreed, predispositions to hereditary degeneration made relapses impossible to escape.[194] Dr. Forbes Winslow (1844 – 1913) insisted that the prognosis of various insanities depended on the durations of fits, characteristics, origin of the fits, and the hereditary nature of the patient. The more hereditary the nature of the disease, where the characteristics resembled those of other family members, the more unfavorable the prognosis was. Having managed asylums after his father's death, Winslow worked predominantly with the criminally insane. The public recognized him as the famous man that worked on the Jack the Ripper and the Georgina Weldon cases. Like Maudsley, Winslow referred to Darwin's authority. An insane person, as "Dr. Darwin says, […] who has a small family of children to absorb his attention, his prospect of recovery is but small, as it established the maniacal hallucination is more powerful than those ideas which ought to interest the patient most." When patients resided under morbid delusions, their prognosis became unfavorable.[195] This became more of an issue when faced with women under morbid delusions. Alienists, when faced with female patients, extended arguments of hereditary insanity to the female sex due to their childbearing capacities.

Hereditary Degeneracy in Women

Evolutionists, including Darwin, believed females were more primitive than males. Women had developed differently within the evolutionary development of

[193] Maudsley, *The Physiology and Pathology of the Mind*, 258.
[194] Morison, *Outlines of Lectures*, 253.
[195] Forbes Winslow, *Lettsomian Lectures on Insanity* (London: John Churchill, 1854), 67.

humanity.[196] This interpretation of the different evolutionary developments of men and women was also shared in literature. Machen embodied female primitive types in his novella *The Great God Pan*.

In *The Great God Pan*, suicidal mania spreads from a mysterious woman known as Mrs. Beaumont to the men that associate with her. Beginning seemingly with an upper-class lord, suicides began to spread. Gradually, men become horrified, worrying about which one of them was next. The suicides appeared abnormal due to their seemingly pathologic nature – suicide was not like smallpox.[197] Shortly after the first suicide, another man, who meets Mrs. Beaumont, commits suicide. Machen, by alluding to Mrs. Beaumont's, or Helen's, seemingly diseased nature, personified suicidal mania.[198] He presented hereditary degeneracy in its most viral form. Helen, being female, transmitted madness through sexual contact. While she did not marry, her acts of intercourse and the viral spread of degeneracy exemplified the ongoing concern about the hereditary nature of the threat that degeneracy posed to everyone. Lombroso and Ferrero stated that characteristics of a race organized and fixed itself through the action of time and hereditary transmission through females.[199] Medical conceptions of the menstrual cycles reinforced ideas of women's predispositions to degeneracy.

Many professionals, including Maudsley, believed that women's menstrual cycles caused "mental and physical derangement." Women suffering from insane neuroses had minds plagued with disease. Many women, it was believed, suffered acute insanity due to

[196] Darwin, *The Descent of Man*, 1204 – 1205.
[197] Machen, "The Great God Pan," 37 – 39.
[198] Ibid., 41, 46.
[199] Caesar Lombroso and William Ferrero, *The Female Offender*, 109.

suppressing the menstrual cycle. Asylums contained many women suffering acute insanity. Mania was observed to have occurred in episodes that correlated with the menstrual cycle. Medical professionals characterized women suffering from the acute mania as having talkative, erratic natures that were antisocial in behavior. One such female patient regressed into depression or confusion that lasted three weeks or longer. Sometime later, the patients would awaken to clarity. Again, Maudsley believed that cures were not possible. Curing a female patient's acute insanity only lasted until the occurrence of another attack which followed the menstrual cycle.[200] In women, and men of their descent, headaches, physicians argued, indicated graver neuroses that were inherited from ancestors.[201] After the female mind degenerated, she was thought to be immune to acts or attempts of a cure. Maudsley suggested that the mind was connected to the menstrual cycle and, against popular opinion, that the menstrual cycle may have occurred in men in some form.[202] Epilepsy marked the lack of moral sanity, according to Lombroso, making women with epilepsy immoral.[203]

Attacks, or fits that were antisocial, wrote Maudsley, exhibited symptoms that were "evidence of an insane neurosis produce[d] by epilepsy, or insanity, or both, in the family." It was these observations that supported medical opinions of the menstrual cycle's kinship to epilepsy.[204] Epilepsy and its hereditary tendencies brought females under excessive medical observation designed to explain various neuroses. Medical professionals accepted puberty as the period when outbreaks of insanity occurred the

[200] Maudsley, *Body and Will*, 87 – 88. Quotation on 87.
[201] Radcliffe et al., *Diseases of the Spine*, 189.
[202] Maudsley, *Body and Will*, 89.
[203] Lombroso and Ferrero, *The Female Offender*, 298.
[204] Maudsley, *Body and Will*, 89.

most. During puberty, it was believed that the body rapidly changed, which strained the mental stability of the mind. Females were considered to be more prone to insanity due to their biology. Puberty disturbed the circulation of blood and acted upon the nerve functions.[205] As puberty acted on the nerve centers, women grew prone to morbid processes that gave way to insanity.[206] Hysteria also developed during the nerve centers' degeneration.

Young women exhibiting anti-social behaviors, inherited predispositions to insanity, or going through puberty were thought to be prone to hysteria. Alienists agreed that women came under either puberty or inherited predispositions that made them likely to become mentally degenerative and morally deteriorated sometime in their life.[207] Prostitutes, Lombroso wrote, particularly suffered from a retrogressive morality that closer resembled ancestral characteristics. Moral insanity within women, especially prostitutes, returned atavistic characteristics to modernity. Lombroso stressed that moral insanity in women appeared within the first period of matrimony. Anti-social behaviors developed first with revulsion toward the husband, indifferent treatment of children, and eventual attempts at revenge towards the husband by mistreating the children. Women with moral insanity insisted that they were correct in spending money on extravagances to be young. When confronted, morally insane women threatened to commit suicide or leave the family.[208] Society was not oblivious to women's role in childbirth and rearing.

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[205] Ibid., 90.
[206] Radcliffe et al., *Diseases of the Spine*, 156.
[207] Maudsley, *Body and Will*, 260, 264.
[208] Lombroso and Ferrero, *The Female Offender*, 309 – 310.

Any degeneracies the mother retained were found in their children – the future of society. Machen's Helen embodied these ideas in a sensational manner.

As Mr. Herbert's wife, Helen led Herbert to degeneracy, both physically and mentally. Herbert lost his fortune because of Helen, and became a degenerate.[209] Revealed later to be Helen, Mrs. Beaumont led all men she met to suicide. She infected them, changing them into degenerates.[210] Helen's mother, Mary, passed her degeneracy to her daughter. Children, like Helen, of degenerate women suffered from neglect. Machen made the idea more sensational by suggesting that not only do children retain the degeneracy of the mother, but women also spread degeneracy to those whom they maintain personal relationships with. Readers may note Helen's sexual promiscuity. While she is not a prostitute, she embodies the fear of a patriarchy; she was an empowered woman and dangerous. These feelings of sexual promiscuity extended ideas of degeneracy to women considered sexually active or working the streets.

Moral insanity, Lombroso argued, affected many female prostitutes, leading them to taking up residence in asylums. Prostitutes were believed to have shown additional symptoms, including obscenity and "unnatural vices."[211] Female criminals with moral insanity were commonly diagnosed with epilepsy which was thought to have extinguished their maternal instincts.[212] Melancholia, one of the several symptoms of moral insanity, caused delusions in women.[213] Cited as positive insanity breaks by Dr. Maudsley, these breaks in women's character were argued to have occurred during the

[209] Machen, "The Great God Pan," 22.
[210] Ibid., 37, 38, 41.
[211] Lombroso and Ferrero, *The Female Offender*, 311.
[212] Ibid., 154.
[213] Maudsley, *Body and Mind*, 90.

menstrual cycle. While they were symptomatic of moral insanity, they also occurred due to the influence of degenerated organs or puerperal insanity.

J. Batty Tuke, Scotland's influential alienist during the late 1800s, addressed the issue of women's tendency to insanity. Puerperal insanity, he argued, occurred with pregnancy either during pregnancy, following parturition, or months after the pregnancy during lactation.[214] Puerperal insanity during pregnancy not only caused the mother to become predisposed to insanity, but also made the child predisposed to insanity. Several cases throughout Europe reinforced Tuke's argument. In one case, a lady, feeble in her constitution, rescued her husband in revolutionary France several times. Months after delivering a daughter, also feeble in constitution, she became a degenerative maniac. She was observed committing acts of violence and never recovered. The insanity of the mother, Morison wrote, reappeared in the children, who manifested the same hereditary insanity around the same age.[215] Additionally, some women faced melancholia. Feeling indifferent, women's melancholia appeared during pregnancy and increased their tendency to commit suicide. Gradually, Maudsley argued, the melancholia became organized into the woman's character.[216] Maudsley observed women suffering from melancholic symptoms to experience moral tribulations with fancy cravings. Forgoing treatment allowed the condition to develop permanently and turn into puerperal insanity.[217] Loss of blood also impacted mental health.

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[214] Ibid., 91.
[215] Morison, *Outlines of Lectures*, 296 – 298.
[216] Maudsley, *Body and Mind*, 91; Maudsley, *The Physiology and Pathology of the Mind*, 148.
[217] Maudsley, *Body and Mind*, 91.

Women who lost great amounts of blood were said to have had their senses afflicted. Loss of blood was believed to cause hysteria, which caused anti-social behavior and insanity.[218] Le Fanu's Laura mirrors these medical conclusions. Having had her blood drained by Carmilla, Laura began showing signs of ill-health. She believed her ill health resulted from her nerves.[219] Medical professionals argued that mental and physical disturbances disappeared as the blood improved. Often, Maudsley stated, the same lack of blood in children suffering from chorea would produce forms of hallucinations. Blood, it was believed, led to perverted conditions, be they inherited or introduced from the outside, causing sensory disorders.[220] Healthy activity, he stated, demanded healthy relations between the nerve-cells and the blood. When the relation descended into disorganization, the blood and nerve-cells relations with the surrounding organs changed. Blood that flowed through "infected districts" produced weak activity. Blood carried these inferior activities further, prolonged them, and provided the beginnings of degeneracy.[221] Women also experienced puerperal insanity after parturition.

Puerperal insanity after parturition was thought to have occurred within a month after birthing the first child. Similar to insanity of pregnancy, a mixture of childishness and dementia was observed to develop alongside acute incoherent mental characteristics. Women observed experiencing hallucinations commonly exhibited cold, pale, and

[218] Maudsley, *The Physiology and Pathology of the Mind*, 117.
[219] Le Fanu, *Carmilla*, 52.
[220] Maudsley, *The Physiology and Pathology of the Mind*, 118.
[221] Ibid., 461.

clammy skin. Their pulse was either quick, small, or random.[222] Laura, in *Carmilla*, exhibited similar symptoms.

Three weeks after being bitten, Laura appeared pale with dilated and darkened eyes. She complained that her nerves caused her "perceptions [to become] benumbed."[223] According to Maudsley, once the symptoms subsided, the female patient tended to sink into confusion until waking up as if from a dream.[224] Laura similarly awoke from her sleepless state because of her nightmare. She experienced hallucinatory sensations until she became unconscious.[225] Similarly, medical professionals found that sleepless nights ensued with "extreme and noisy incoherence."[226] Carmilla completely disappeared during Laura's restless nights. Laura, because of Carmilla, was sleepless and incoherent. She remained haunted by Carmilla, suggesting the disorganization of her nerves.[227] Insanity of lactation, produced by the physical exhaustion of feeding children, became worse, it was thought, the longer the child breastfed. Maudsley and other professionals connected insanity of lactation, puerperal insanity, and insanity of pregnancy to heredity. Heredity dictated which women were degenerates. During the phases of a woman's life lay these three insanities that dominated ideas of women's role in society.[228] Doctors believed children, as a result of women's predisposition to degeneracy, were always threatened

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[222] Maudsley, *Body and Mind*, 92; Maudsley, *The Physiology and Pathology of the Mind*, 396.
[223] Le Fanu, *Carmilla*, 52.
[224] Maudsley, *Body and Mind*, 92.
[225] Le Fanu, *Carmilla*, 51-52.
[226] Maudsley, *The Physiology and Pathology of the Mind*, 396.
[227] Le Fanu, *Carmilla*, 46, 53, 54, 57, 96.
[228] Maudsley, *Body and Mind*, 93.

with exposure to physical and mental neuroses. There existed several cases of children born criminal from birth.

In one case, a child of five or six years old repeatedly attempted to kill its stepmother. Another case presented a child that could not resist stealing and repeatedly attempted arson. Several case files consisted of children with suicidal mania. Medical professionals were faced with a range of disorders which plagued the mental constitutions of children, including homicidal mania, kleptomania, pyromania, and suicidal mania. All of these conditions in children, it was believed, sprang from an acute hereditary predisposition to insanity.[229] Images of Machen's immaculate Mary and her mad daughter Helen brought images of mad children to mind. Helen's dance with the satyr caused a boy to descend into early imbecility. She also caused another child to develop hysteria. Helen was born a degenerative child.[230] Like women, physicians and alienists found children facing melancholia, delusions, and morbid impulses. Children that cried excessively were considered by many to be degenerates at birth. Painful emotional reactions, Maudsley thought, impressed on their nerves causing reactions of all kinds. Children that suffered from degenerative nerves were considered to be products of the inherited defects of syphilis.[231] Public humiliation followed syphilis like other neuroses. Studying the inheritance of syphilis in a girl, Dr. John Hughlings Jackson (1835 – 1911), an early neurologist and prominent observer of epilepsy, found that the girl had not acquired the disease; he had studied all the family members. He found that the son of the family suffered from an "inherited taint." Suffering from the inherited syphilis, the

[229] Maudsley, *The Physiology and Pathology of the Mind*, 313.
[230] Machen, "The Great God Pan," 18 – 20.
[231] Maudsley, *The Physiology and Pathology of the Mind*, 319.

woman's third child developed fits and convulsions.[232] Syphilis was physically and mentally degenerative, which caused many medical professionals to believe that it gave rise to insanity. Alienists believed syphilis gave rise to degenerated nerve centers that caused disorganization of the mind. Families with hereditary syphilis were widely considered to be degenerative and anti-social.[233] By 1902, Maudsley argued that men influenced a child's inherited qualities as much as women did. However, he did not lessen women's responsibility in spreading degeneracy. He argued that children that inherited good qualities most likely did from their mother. It was still possible that the child inherited good qualities from the father. Due to the female element in his ancestry, the father influenced inherited conditions. Both men and women contained elements from both sexes that transmitted to the offspring.[234]Medical professionals understood degeneracy as a reversion from healthy states to unhealthy and insane states.[235]

Henry Maudsley, Alexander Morison, Hughlings Jackson, Lombroso, Forbes Winslow, William A. Hammond, William. A. F. Browne, and several others embraced ideas of hereditary degeneracy.[236] They understood that mental disorganizations and neuroses resulted from an inherited predisposition. In cases of insanity, medical professionals studied the family of the individual to determine the amount of inherited taint and ill-training that made up the individual's degeneracy.[237] Heredity was evident to

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[232] Jackson, *Cases of Disease*, 17.
[233] Maudsley, *Physiology and Pathology of the Mind*, 288, 319, 422.
[234] Maudsley, *Life in Mind and Conduct*, 347 – 348.
[235] Pick, *Faces of Degeneration*, 178.
[236] Jackson, *The Factors of Insanities*, 20; Winslow, *Lettsomian Lectures*, 156; Cesare Lombroso, *The Man of Genius*, The Contemporary Science Series, ed. Havelock Ellis (London: Walter Scott, LTD., 1891), 5 – 38.
[237] Maudsley, *Body and Will*, 269.

them, having been "set down as a fact of observation, that mental derangement in one generation is sometimes the cause of innate defiance or absence of moral sense in the succeeding generation." Mental derangements were believed to cause morality to degenerate first. Declining moral senses allowed for the development of degeneracy in the individual and future offspring.[238] Followers of Lombroso, like Maudsley, had based their works on Darwin's modified inheritance principle. Lombrosians argued that degeneration caused large portions of mental and physical disorders. Many degenerates were thought to have had inherited it from their parents who were insane, syphilitic, phthisic, or injured in accidents. Degeneration was believed to be growing "rapid and fatal." Lombroso argued that only idiocy or sterility stopped the growth of degeneracy.[239] Heredity formed the basis of understanding people's ill-health. Without modern genetics, psychology and medicine understood heredity and inheritance based on Darwin's work in biology.

Historians ignore the influence that Darwin's idea of heredity had on medical professionals diagnosing physical and mental diseases. Medical practices and pre-Freudian psychiatry employed Darwin's inheritance principle in their diagnoses of male and female patients. Their reliance, and in some cases expansion, on Darwin's idea of reversion within his wider inheritance principle helped to create a credible public health concern over degeneracy. As exhibited in Victorian literature of the period, the English were concerned over the future of their country. Literature contained various characters and plots that mirrored the medical conceptions of hereditary degeneracy. Additionally,

[238] Ibid., 270.
[239] Lombroso, *The Man of Genius*, 5.

the principle of inheritance sometimes showed up in arguments in court. These instances emphasized the seriousness of the threat that degeneracy posed to society. Hereditary degeneracy was argued to have created very dangerous criminals.

Hereditary Degeneracy in Legal Discourse

Hereditary legal defenses found traction in the 1880s and onwards. Each defense succeeded differently, depending on the crime and the gender of the offender. Men met stern judgments and death sentences. Women that committed the same serious crimes faced guilty judgments, but were not sentenced to death. A range of crimes from larceny to murder committed by males and female were defended or prosecuted using legal arguments founded on theories of heredity. These defenses intended to prove the defendant's inability to prevent himself or herself from committing crimes. It was in their nature. As medical professionals researched heredity, they made heredity important in order to understand criminal acts. Men, however, met several barriers to successful pleas in the 1860s and 1870s.

At the Old Bailey Court, January 12, 1874, the jury unanimously found William Parker guilty of murder. They strongly recommended to the court that they have mercy on him due to his depression caused by losing his wife. Hereditary arguments linked the defendant's inability to control his actions to his inherited mania. John Rouse testified that the defendant was in a "very low and distressed state." Nothing betrayed eccentric behavior. He appeared "quite right." Instead, the defense deliberately used the defendant's aunt who, in 1848, grew very ill in body and mind, to prove the defendant's inherited taint. While she was never violent, her mind became extremely ill and

unresponsive after six months. Catherine Millard, another aunt of the defendant, testified that her sister was not violent and that she never slept or ate. Eventually the house surgeon suggested removing her to an asylum but she refused and kept her sister at the house where she grew more depressed. John Rowland Gibson, surgeon at the Newgate Jail, commented that "the presence of skill and arrangement in an act does not show itself in permanent and continuous insanity, but in outbursts of mania from time to time." Insanity, he stated, was difficult to detect and gave no clues to what existed prior to an attack of acute mania. Depressed individuals were believed to either commit acts of suicide or murder. Attacks of mania were observed to have occurred suddenly like "an attack of epilepsy." The defense sought to connect the attacks of mania to the hereditary nature that prevented the defendant from controlling his actions. This, in turn, provided doubt concerning the defendant's culpability. With only his aunt suffering from the same neurosis, little evidence existed to prove hereditary degeneracy within the family bloodline. The other sister had not experienced any of the symptoms, nor were the defendant's mother and father degenerates. Doctors provided little significant evidence that proved the defendant's hereditary nature. As a result, the court sentenced Parker to death. [240]

Like Parker, Thomas Smithers killed the daughter of Sarah Wheeler in her parent's house. Summoned to face his crime, the jury sentenced Smithers to death in September 1878. The defense called Mary Ann Walker, the prisoner's grandmother, to the stand to connect the defendant's actions and health to his hereditary taint. His

[240] *Old Bailey Proceedings Online* (www.oldbaileyonline.org, version 6.0, 17 April 2011), January 12, 1874, Trial of William Parker (t18740112-123).

grandfather, also named Thomas Smithers, was taken from his home in 1830 to the St. Pancras Infirmary. He later went to Hanwell Asylum in 1840. Her son, Joseph Smithers, the prisoner's uncle, had been sent to Colney Hatch Asylum and later committed suicide by throwing himself under a train. The prisoner's other uncle, John, died at Colney Hatch Asylum as well. Three members of the family met their end due to madness. Smithers' father remained strange in manner but never went to any asylum. In his life, Smithers experienced "fit and foam at the mouth […] it came on suddenly." Several men had to hold him when the fits occurred. Richard Cresswell, surgeon at East Moulsey, concluded that the described symptoms matched epileptic fits. He argued, "it is a well-known recogni[zed] fact in medical science that insanity is hereditary […] it often skip[ped] one generation and develop[ed] itself in the next," making it likely that he inherited a disorganization of the mind. Epileptics were "very apt to commit sets of violence."[241] Even with significant evidence of hereditary degeneration, the nature of the crime and the defendant's appearance of being able to reason signed his fate. Frederick Treadaway, another murderer brought to justice in 1877, presented the same issues.

Medical professionals believed that Treadaway suffered from epileptic vertigo – a degenerative disease. Dr. Rhys William, a member of the Royal College of Physicians in Edinburgh, argued to the jury that the described symptoms illustrated "undoubtedly epileptic vertigo." Epilepsy was a hereditary "disease of the brain." Surgeon William Smiles disagreed and stated that he had seen nothing physically indicating epilepsy.[242]

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[241] *Old Bailey Proceedings Online* (www.oldbaileyonline.org, version 6.0, 17 April 2011), September 16, 1878, Trial of Thomas Smithers (t18780916-826).
[242] *Old Bailey Proceedings Online* (www.oldbaileyonline.org, version 6.0, 17 April 2011), February 5, 1877, Trial of Frederick Treadaway (t18770205-246).

Treadaway, too, was sent to death. His case illustrated the jury's focus on active volition, the judge's emphasis on morality, and the court's laymen understanding of insanity's characteristics. Morality demanded justice. Medical testimony at court gradually became more important. As medical professionals expanded knowledge of degeneracy and heredity, men became considered more predisposed to hereditary degeneracy. By the 1880s, more and more criminals brought into the Old Bailey used hereditary legal defenses.

Males that committed serious crimes of violence found a receptive jury. William Holt Brandt, indicted for the murder of his brother in May 1887, claimed irresponsibility due to his hereditary mania. Mary Louisa Brandt, the victim's mother, testified that her father had been committed to an asylum in Liverpool. The defendant's father died from paralysis. William Brandt had attempted to take his life three times before the incident saying, "he preferred death to anything." Henry Hayward, the defense's medical witness, argued that the defendant was out of his mind. On Sunday evening, before the crime, the defendant was in a "state of mania, temporarily insane […] the maniacal excitement passed off." However, manic states reoccurred frequently. Evidence of his father's paralysis and his maternal grandfather dying in an asylum "strengthen[ed] my [Hayward's] opinion I then formed – madness sometimes step[ed] over a generation." Hayward goes further, connecting hereditary insanity and the patient's being "out of his mind," stating that, "his perception of right and wrong [was] temporarily lost." He challenged the legal understanding of culpability. Charles Sellars, having known of the prisoner's childhood, believed him to be "not right in his head" at an early age. Brandt was eccentric and silly. The defense explored the patient's history in relation to his

childhood state, illustrating the usage and effectiveness of the biography in court. James Arness Carter, headmaster of the asylum, went as far as to label the defendant "idiotic." Henry Charlton Bastian, physician at University College Hospital and at the Hospital for Paralysis and Epilepsy, commented on the defendant's weak-minded state as not being entirely imbecilic but below average intellect. Brandt was found guilty and sentenced to imprisonment for his insanity.[243] William Holt Brandt presented a strong case of hereditary mental and physical degeneracy. Doctors agreed on his perception of right and wrong being impaired due to hereditary degeneracy. Joseph Wood's defense also used evidence of hereditary epilepsy to plead insanity.

Indicted in May 1890, Wood was charged with the murder of Nelly Wood, his child. Susan Crane, Wood's aunt, claimed that Wood had been up many nights due to taking care of his sickly son. Ann Wood, mother of the defendant, testified that the defendant's father was afflicted in the head, which paralyzed him for six months. Her other son had also suffered from fits. His first fit occurred when he turned five. It was a "very bad one; he is black with it – Mr. James Conroy attended him – it was an epileptic fit." Her father's sister, Sophy Brown, had also been committed to Norwich Asylum. The prisoner had four fits since he was married. James Wright Hill, a doctor, diagnosed the patient to have suffered from malformed nerves and "thought he was epileptic." He sometimes experienced loss of memory, which parallels a "type of epilepsy" that betrayed itself by temporary attacks that produced unconsciousness and lost memory. The defendant's eye pupil appeared similar to an epileptic's eye pupil. Henry Charlton

[243] *Old Bailey Proceedings Online* (www.oldbaileyonline.org, version 6.0, 17 April 2011), May 23, 1887, Trial of William Hold Brandt (t18870523-658).

Bastian agreed with Hill's diagnosis. Having studied insanity, he claimed that the defendant clearly suffered from an epileptic fit but in the minor form of epilepsy known as petit-mal. Coupled with insanity in three generations of his family, the defendant had likely inherited degeneracy, which made the crime an impulsive act. Within the same family, "epilepsy and insanity are intermixed." The jury found Joseph Wood "guilty of the act, but insane at the time" and ordered him to be detained.[244] Unlike men, women found juries more open to ideas of hereditary degeneracy before 1880.

Degenerate Women in Court

Women's bodily functions, medical professionals agreed, made them predisposed to insanity. Such ideas were not lost in court. In July, 1862, Ann Cornish Vyse faced justice for the murder of her child, Alice Kate Vyse. The defendant's sister, Sarah Saunders, testified that the defendant had been noticeably different after the death of her infant. She exhibited antisocial behavior and fits of despondency that sometimes turned violent. Edwin Payne, physician to the defendant, had removed blood that interfered with the defendant's breathing. He remarked that the defendant's menstruation cycle affected her judgement as it "affect[ed] the brain of [many] women." Her nervous system was in a terrible state. The trial proceeded into hereditary examinations of the defendant's morbid condition. Richard Vine, the defendant's uncle, committed suicide in a fit of insanity. He had never been right in the head and had a "rather weak […] intellect." The son of another cousin, on the father's side, was confined to an asylum in Bethlehem on two

[244] *Old Bailey Proceedings Online* (www.oldbaileyonline.org, version 6.0, 17 April 2011), May 19, 1890, Trial of Joseph Wood, (t18900519-457).

occasions. Another cousin, Elizabeth Dennis, was restrained to her house due to being of unsound mind. Dorothy Heard, another relative, was also affected in the mind. Dr. Hood reinforced Vine's testimony and showed the records of the insane family members. James Haynes Heard, admitted in 1851, suffered from a "deep-seated" insanity. He was never cured and later was discharged. Dr. Hood argued that medical professionals recognized insanity "as a matter which continues from generation to generation; that is, all kinds of insanity – it may be dormant, and show itself by paroxysms." Ann Trick and Mary Trick commented on the pedigree of Vyse, stating that her grandmother was known to have attempted suicide. Vyse's second cousin was also known to be a harmless lunatic. Dr. Forbes Winslow testified that her predisposition to insanity and her act resulted from the suppression of the menstruation cycle. Suppression of the menstruation cycle affected the brain. Such symptoms were argued to be undoubtful signs of insanity. The family's degenerate history, Winslow argued, illustrated her unsoundness of mind. Paroxysms of madness brought the defendant's culpability into question. Dr. Copland, another physician, agreed entirely with Dr. Winslow's conclusions. Ann Cornish Vyse was found "not guilty, being insane."[245] Puerperal mania's, or insanity after pregnancy, inheritance became recognized in court in 1869.

Adelaide Freedman, indicted for the murder of her newborn child, found a successful defense in hereditary puerperal mania. Rebecca Marks, sister of the defendant, testified that the defendant seemed "vacant and strange" four months before the prisoner was to be confined with her child. After the birth of her child, the defendant exhibited

[245] *Old Bailey Proceedings Online* (www.oldbaileyonline.org, version 6.0, 17 April 2011), July 7, 1862, Trial of Ann Cornish Vyse (t18620707-745).

strangeness in appearance and manner. She often appeared melancholic and attempted to hang herself. Marks expanded on the defendant's history of hereditary degeneracy, stating that "all the family through have been insane." Her mother and two aunts were degenerates. Her brother also suffered from mental degeneration. Having poisoned her child and herself, Freedman survived in the hospital. She displayed signs of extreme depression and tried to strangle herself while there. Nurses remarked on her being "very low spirited." Morrison, surgeon to the prisoner in her period of confinement, observed her being wild and vacant. He became suspicious of her sanity. She exhibited signs of puerperal mania which developed into acts of violence to loved ones. There were no fixed time periods, argued Morrison. Insanity could arise suddenly. The defendant displayed the melancholic type of puerperal mania which, Morrison argued, left her incapable of controlling her actions. Hereditary taint had played a role, he insisted. However, he also stated that he was "never informed that there was insanity in the family till after the deed was committed." It was believed that large proportions of people suffered from puerperal mania and did so because of hereditary taint. The prosecutor bolstered the defense's argument. Puerperal mania, Morrison stated, pronounced itself long after the birth. Dr. Henry Letheby agreed with Morrison, telling the jury that the prisoner had all the symptoms that led to uncontrollable impulses. John Rowland Gibson, observing the prisoner in jail, agreed that she was in "a peculiar condition, amounting to a form of insanity." The defense proceeded to give witnesses affirming the insanity of the defendant's mother, grandmother, and great-grandmother. Jury members cut testimonies off and expressed unanimously that the prisoner suffered from mental degeneration. She was found not guilty on the grounds of insanity and was ordered to be detained at her

majesty's pleasure.[246] Hereditary puerperal mania won its first case. Ann Noakes, having murdered her child, faced another receptive jury in April 1880.

Noakes had murdered her child of 16 months old. Ellas Crouch, Noakes brother called by the defense, testified to the hereditary degeneracy of the defendant. Their father, he stated, was mentally eccentric and had attempted suicide twice. Their mother was also eccentric and sometimes shut herself up in her room for days at a time. Their uncle and aunt also suffered from eccentric natures. Freedstock Crouch, Noakes' other brother, commented that Noakes was "in the family way [insane]." John Walter, Physician at London University, testified that Noakes suffered from a disease of the womb. Her womb had enlarged, which caused periodical blood loss to constant blood loss. This, compounded with her distress days before her confinement, gave her no time to recover. Insanity arose, argued Walter, "most frequently in females where there [was] some uterine disease; in this case you have not only the [hereditary] predisposing tendency to insanity, but you have the debilitating disease of the womb, also tending to produce insanity." These afflictions generally led to suicide or homicide. Noakes, he believed, had acted under homicidal mania, which affected her notions of right and wrong. She did "not know she was doing a guilty act." John Rowland Gibson, a fellow of the Royal College of Surgeons and medical officer at Newgate Jail, agreed that Noakes suffered from a "breaking up of the mind."[247] Women continued facing positive sentencing when using hereditary legal defenses. Their initial successes reflected the general attitudes toward

[246] *Old Bailey Proceedings Online* (www.oldbaileyonline.org, version 6.0, 17 April 2011), November 22, 1869, Trial of Adelaide Freedman (t18691122-36).
[247] *Old Bailey Proceedings Online* (www.oldbaileyonline.org, version 6.0, 17 April 2011), April 26, 1880, Trial of Ann Noakes (t18800426-428).

women. Medical professionals blamed women's evolution and bodily functions as the cause of their inferiority politically, mentally, and physically. Criminals were thought in court and in medicinal science to be an outcome of hereditary reversion. As a result, the criminal became a factor of the ongoing public health concern. Trials were very public, which drove home the idea that criminals were degenerates. They were clear examples, as understood by onlookers and readers of Maudsley, Darwin, Spencer, and other professionals, of the threat degeneracy posed to society.

Conclusion

Citizens feared that delinquents were the "blight if not a revolutionary threat that undermined the social aggregate as a whole." Criminals were the "moral sewage," that never "deodorized nor floated out to sea." Degenerates were thought to be polluting the city and the people. Darwinists thought that Britain's isolation protected it from degeneracy but were faced with Darwin's findings of the morbid metamorphoses experienced on islands.[248] The public, under Darwin's and Maudsley's influence, could not help but be pessimistic. The future seemed grim.[249] Visions of the future developed into "lingering degeneration of the individual, the procreation of a stunted race." Degeneracy became a growing problem that many thought "demanded social action."[250] Dr. Carpenter stated that the idea of hereditary insanity and other degeneracies paralyzed the public during the late 1800s. Heredity paralyzed "every virtuous effort, more withering to every noble aspiration." Environments and heredity endangered children's

[248] Pick, *Faces of Degeneration*, 178.
[249] Ibid., 180.
[250] Ibid., 195.

healthy instincts, turning future generations into criminals, delinquents, and degenerates. John Stuart Mill, in his autobiography, felt "as if I was scientifically proved to be the helpless slave of antecedent circumstances; as if my character and that of all others had been formed for us by agencies beyond our control, and was wholly out of our own power."[251] English Victorians worried that they were automata predisposed to their inherited nature.[252]

Overpopulation gave way to the reality of sharply declining birthrates all over Europe. However, the middle and upper classes experienced declining birthrates more sharply than others. Combined with the current ideas of degeneracy, statistics of increasing crime and prostitution, contagious diseases like consumption, and increasing numbers of insane and imbecilic persons, fear was unavoidable. All the "worthless" individuals thrived at the expense of the healthy individuals. The environments influence in deciding which characteristics thrived and passed through generations led educated citizens to point to industrialization as the problem. The factories and urban conditions produced environments that allowed the ill-minded, poverty-stricken, and criminal classes to thrive. Because of these conditions and ideas of reversion, experts seeking to monitor and control degeneracy grew in importance.[253] From the 1840s to the 1850s, more and more patients entered asylums. A total of 14,560 degenerative patients existed in hospitals, asylums, and licensed houses of England and Wales in 1849. Six years later, in 1855, the number of degenerative patients had risen to 20,493. By 1865, the number of

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[251] John Stuart Mill, *Autobiography* (London: Longmans, Green, Reader, and Dyer, 1873), 169, quoted in William B. Carpenter, *Nature and Man: Essays Scientific and Philosophical* (London: Kegan Paul, Trench and Co., 1888), 306.
[252] William B. Carpenter, *Nature and Man,* 315.
[253] Hawkins, *Social Darwinism*, 218.

degenerates certified insane had increased to nearly 30,000. In 1866, the numbers of certified insane degenerates had surpassed 30,000. Maudsley believed the increasing statistics were because of increasing legislation that brought many unreported cases under observation, paupers being committed to asylums, and governmental actions which prolonged the lives of degenerates. Maudsley believed that the number of insane were increasing due to the fact that individuals were being declared insane before actually being proven so. More people entered asylums and lived longer with low discharge rates. With these causes in consideration, "it must be admitted that a steady increase of about 1,000 a year in the insane population of England and Wales […] does seem to point to an increase more than proportionate to an increasing sane populating."[254]

The degenerative classes seemed favored by the environment and heredity to determine the future course of society. They composed the majority of the population as stated by medical discourse. Supported by Alfred Russel Wallace (1823 – 1913), an English naturalist and Darwin supporter, Darwin argued that human intelligence triumphed in civilized societies, unlike savage societies. He hoped for the moral and intellectual triumph over the degraded race. Despite being optimistic, Darwin warned people that the "degeneration of a domestic race" was due to human society allowing the poor and reckless "to breed so wantonly and injuriously." Unlike degenerates, morally superior citizens married later in life and spread at a slower pace. As a result, retrogression overtook progress.[255] These developments led to a century of anxiety over

[254] Maudsley, *The Physiology and Pathology of the Mind*, 230.
[255] Gregory Claeys, "The 'Survival of the Fittest' and the Origins of Social Darwinism," *Journal of the History of Ideas* 61, no. 2 (2000): 236 – 237. Quotations on 237.

degeneration of the healthy race.[256] Legal, literature, and medical discourse were "replete with data, images and explanations concerning the degenerative consequences of modernity."[257] H.G. Wells, an author not discussed, also stated that the other non-white European races would die out and disappear if they did not produce healthy individuals.[258] Maudsley believed humans remained linked to their ancestral stock and subject to variations which could at any time reappear in civilization. Anxiety over hereditary reversion became more pronounced when medical professionals based their practices and ideas on Darwin's modified Lamarckian inheritance principle, which included the principle of reversion. Laws of reproduction stating that offspring exhibited the "features and qualities like those of its parents" went to the heart of England's culture.[259]

In response to Darwin's inheritance principle, medical reformers sought to engineer a new environment that would prevent the inheritance of crime, poverty, and disease. New environments suited to sane and morally upright individuals would curb the survival of morbid variations.[260] Darwin's scientific acceptance of heredity created a foundation that allowed medical professionals to raise public health concerns over degeneration.[261] In England, Darwin remarked, the "weak members of civilized society propagate[d] their kind" and that "it is surprising how soon a want of care, or care

[256] Ibid., 239.
[257] Hawkins, *Social Darwinism*, 219.
[258] Claeys, "The 'Survival of the Fittest,'" 239.
[259] Maudsley, *Life in Mind and Conduct*, 337 – 338. Quotation on 338.
[260] Hawkins, *Social Darwinism*, 218.
[261] Ibid., 216.

wrongly directed, leads to the degeneration of a domestic race."[262] Marriage was the key to controlling degeneracy and "all ought to refrain from marriage who cannot avoid abject poverty for their children." Darwin continued to argue that, "if the prudent avoid marriage whilst the reckless marry, the inferior members tend to supplant the better members of society."[263] Society's decline rested solely on heredity rather than social conditions. Analogies between humans and stock breeding only made inheritance of characteristics more persuasive. Medical professionals' insistence on Darwin's ideas of inheritance over a single generation allowed for hereditary degeneracy to persist in the minds of professionals into the 1900s. Degeneracy, by the end of the 1800s, became recognized by many professionals as "the failure of the human organism to adapt to the enormous changes in the conditions of life experienced during the past half century." Disease was viewed as a marked failure of adaptation to life which led to "disorder, decay, and death." However, for some strange reason, degenerates just increased despite the idea that they were failing to adapt. Perhaps the healthy were failing to adapt. To eliminate the degenerates, physicians, alienists, and evolutionists believed that the healthy had to beat them in a struggle for existence. When faced with overwhelming opposition of the healthy, they believed that the immoral and insane would be unable to prosper.[264]

Historians rarely examine hereditary arguments in relation to Darwin's modified inheritance principle. The same inheritance principle is found, and sometimes modified,

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[262] Charles Darwin, *The Descent of Man and Selection in Relation to Sex*, rev. ed. (New York: D. Appleton and Company, 1882), 134.
[263] Ibid., 618.
[264] Hawkins, *Social Darwinism*, 220.

by various leading medical professionals. Darwin had maintained communication with leaders in the field and never once denied their work. He only provided praise. Within medical literature espousing ideas of inheritance and reversion, the reader will find references to Darwin. By relying on his scientific work, medical professionals made hereditary degeneracy or reversion a health concern. Reversion was, after all, an evolutionary possibility. The violent crimes rocking Victorian England only provided proof of degeneracy's threat to society. In 1888, Jack the Ripper reminded the people of London of the extreme danger imposed by degenerates. Authors became intoxicated with ideas of inherited taint, degenerates, and hereditary criminals. The public had no choice but to face what many physicians and alienists had been arguing. Degeneracy threatened society and individuals. Darwin's legacy rests on how one factor of natural selection, his modified Lamarckian principle of inheritance, came to influence medical conceptions of mental and physical diseases. These conceptions justified the ideological conception that there existed different varieties of human beings. Eventually, in Germany, such justifications would be given to explain the threat that the Jews posed to the state. Without Darwin, it is hard to state whether the idea would had developed or would had petered out sooner than it did.

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