The features seemed to melt and alter

DUALITY AND DEGENERACY IN A DEMANDING VICTORIAN SOCIETY

Exploring the engagement with Victorian brain science in *The Strange Case of Dr. Jekyll and Mr. Hyde* (1886) by Robert Louis Stevenson and *The Great God Pan* (1890) by Arthur Machen.

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Introduction

This thesis explores how two gothic fiction novels, *The Strange Case of Dr. Jekyll and Mr. Hyde* (1886) by Robert Louis Stevenson and *The Great God Pan* (1890) by Arthur Machen, used the functioning of the brain as a central theme and how this expresses their attitude towards brain science and Victorian society in general.

During the Victorian age many new scientific discoveries were made, including discoveries on the human brain. By the late nineteenth century a new understanding of the human mind came into existence since scientists agreed that criminal tendencies could be traced to a condition of the brain. Gall experimented with the idea that humans have two brains which operate independently and other scientists tried to discover the different functions of the two brains or hemispheres (Harrington 11). According to Sacks, the left hemisphere was "sophisticated and specialized" (2). Around 1870 an idea called “left-brain superiority” developed which is the belief that the civilized and rational functions of the brain were localized in the left hemisphere (Stiles 35-36). The right hemisphere, on the other hand, became associated with dark and evil qualities after Ferrier published an article on one of his patients in 1882 in which a woman missing a large part of her left hemisphere strangled her children (Ferrier 62-63). The right brain was believed to be dominant in social groups which were then regarded to be inferior, such as non-whites and women, and also in maniacs and criminals (Stiles 36). Also, the degeneracy theory explained deviant social behaviour and deviant physical appearances by stating that the individual suffered from a “degenerate brain” (Eckersley 278). Ultimately, this theory led Féré and Lombroso to believe that one’s criminal tendencies were determined by the structure of one’s brain (Eckersley 279).

Both Arthur Machen and Robert Louis Stevenson were interested in brain psychology. According to Anne Stiles, Stevenson was well acquainted with different scholars who researched brain science (30). Stevenson conversed with educational psychologist James

Sully, philologist and psychical researcher Fredric Myers, and with the French psychiatrist and philosopher Pierre Janet (Stiles 30). Stevenson also wrote articles on child psychology for the same magazine as Sully (Block 447). Machen also had an interesting acquaintance. According to Graf, Machen was well acquainted with Arthur Edward Waite who studied occultism and wrote various books on Thomas Vaughan, a philosopher and alchemist who engaged with the degeneracy theory in the field of natural magic (64). Machen also showed interest in a medical career since he wanted to enrol to the Royal College of Surgeons in London, but he was denied after failing his initial exam (Worth xii). The fact that both authors were interested in brain science indicates the possibility of the engagement with this science in their novels.

The research in the incorporation of brain science in the mentioned gothic fiction novels will draw on the theories and insight generated by historian of science Anne Harrington and the historian of neuroscience Stanley Finger. This thesis aims to discover the ways in which the different popular opinions on dual mind theory and degeneracy were incorporated into late Victorian gothic fictions, and to utilize the theories of mind developed by Victorian scientists as a theoretical framework for analysing the representation of the workings of criminals' and women's minds in Stevenson's *The Strange Case of Dr Jekyll and Mr Hyde* (1886) and Arthur Machen's *The Great God Pan* (1894). The overall aim of the thesis is to discover to what extent writers of gothic fiction engaged critically with the scientific debates concerning the working of the human mind and to discover their attitude to the scientific theories and society in which these theories were created.

Both authors incorporated brain science in their novels to comment on the oppressive nature of Victorian society. Stevenson and Machen both described certain characters as perceived morally right by portraying them as the pinnacle of the evolution through their appearance and as the embodiment of the sophisticated left brain through their intelligence

and civilized behaviour. They also described certain characters as perceived morally wrong by portraying them as the nadir of the evolution through their appearance and as the embodiment of the primitive right brain through their emotions and their connection to sleep and dreaming. Through the fall of various characters the authors express their resent to the destructiveness of the oppressive Victorian society. They also demonstrate that the scientific discourse of the Victorian age upheld the dominant moral framework and also the dominant gender ideology.

In the first chapter an overview of the dual mind theory and the degeneracy theory will be given in which the important figures connected to the theory will be discussed along with the development of the theory and the overall implications the theory offers. In the second chapter an explanation is given of how Stevenson engaged with the dual mind theory in his novel. This chapter will first establish Stevenson's knowledge of brain psychology and then it will demonstrate how Stevenson incorporated brain science into his text by creating characters that portray different sides of the brain. The third chapter begin by establishing Machen's knowledge of brain science. The third chapter will continue to demonstrate how Machen incorporated degeneracy theory in his novel. Then a demonstration of how mind theory is represented in Machen's novel will follow. The thesis will end with a conclusion on how Stevenson and Machen engaged with the scientific brain theories and how this reveals their attitude on the theory and the society they lived in and how women are portrayed through brain theory.

1. Dual Mind Theory and Degeneracy Theory in Victorian Society

Before being able to explore to what extent *The Strange Case of Jekyll and Hyde* (1886) by Robert Louis Stevenson and *The Great God Pan* (1890) by Arthur Machen engage with the scientific theories of their time and what attitudes towards these theories are expressed in the novels, the theory needs to be established. The two main theories in connection to brain research during the nineteenth century were the dual mind theory and the theory of degeneracy.

1.1 Dual Mind Theory

The main importance of the dual mind theory is that various nineteenth-century scientists believed that a dual mind also indicated that a single person could host two souls. After the theory was introduced by Gall many scientists used it as a way to explain insanity (Harrington, "Hemisphere Difference and 'Duality of Mind'" 618). Later medical cases followed in which a person after death was found to only have one hemisphere and doctors became interested in the power of each hemisphere (Stiles 35). A theory was established which marked the left hemisphere as civilized and rational (Stiles 35-36). Partially due to this theory, the opposite was prescribed to the right hemisphere which became associated with emotions and impulsive behaviour (Stiles 36; Harrington, *Medicine* 80). In this chapter multiple cases will be discussed of patients suffering from brain damage or mental health problems to illustrate how theories evolved and were supported by actual cases. The chapter will end with a discussion of the case of Louis Vivet. His case was arguably the most famous case of a patient with mental health problems. His symptoms embraced the hypothesis on the differences between the right and the left hemispheres in the eyes of many Victorian scientists.

The idea that a single person could have two souls came into existence after Franz Joseph Gall coined the idea that every human being has two brains. Gall lived from 1758 until

1828, and he was a doctor and a pioneer in locating the different functions of the brain. According to historian of science Anne Harrington, Gall taught that "each of the mental faculties existed in perfect symmetrical duplicate, with each pair localized in corresponding regions of the two hemispheres, so that in the end each half of the brain could serve as a complete and independent organ of the mind" (*Medicine* 11). In other words, Gall believed that humans possessed two cerebral hemispheres which could operate independently from each other and could each serve as a complete brain. In her article "Nineteenth-century Ideas on Hemisphere Differences and 'Duality of Mind', " Harrington explains that after Gall established this claim most phrenologists were inclined to believe that "any disorder that upset the perfect symmetry and presumed simultaneous functioning of the two hemispheres would have the effect of disordering the faculties involved" (618). By this Gall means the idea that insanity could be a result of incoherent or autonomous behaviour from the cerebral hemispheres (Harrington 618). Many scholars, such as Edinburgh phrenologist Hewitt Watson (1804-1881), embraced this theory. Watson believed that the signs of insanity or a two-fold personality many patients showed could be explained by "assuming pathological dissociation between the two hemispheres" (Harrington, "Hemisphere Difference and 'Duality of Mind'" 618). Alienist[1] Jean Esquirol (1782-1840) used the theory of a dual mind to explain the type of madness when man becomes "impelled to evil by one motive and restrained by the other" (Esquirol 363).

The term "dual personality" was coined by doctor Eugene Etienne Azam to describe patients such as his own patient Felida X (Rieber 143). According to doctor Robert Rieber, Ellenberg described Felida as "a one-way amnesic multiple personality" (143). By this Ellenberg meant that one of her personalities knows nothing of the other personality.

[1] An alienist is a psychiatrist who assesses the competence of a defendant in a law court.

However, the second personality knows everything about itself and the first personality (Rieber 143). Macnish described a patient who had the same symptoms. His patient was called Mary Lyall and she often fell asleep for long periods of time. When she finally woke, her right hand and arm appeared to be bereft of feeling (Macnish 187). She also seemed to be unable to hear until four days before her recovery (Macnish 187). Afterwards she claimed to have no knowledge of anything that happened (Macnish 187). Rieber explains that similarly, Felida also had "a tendency to fall into a long, deep sleep" (142). The state of sleep could last for several month at a time (Rieber 142). When Felida woke she found herself "without any recollection of what happened before going to sleep" (142). Rieber also points out that Azam noted that after Felida woke she would have a different personality from when she went into her sleep. At one occasion, her "new personality was merry and frivolous, prone to laughter and fond of jokes, whereas the pre-sleep Felida was rather serious and inhibited" (142). In 1858 Felida shifted into her second personality for about one to three hours each day and the time she spent in her second personality gradually became longer (Rieber 142). Rieber states that Felida's life eventually became unbearable because she had no memory of a major part of her life in her primal personality (143). The case of Felida was constantly referenced by other doctors and her case influenced many scientists and doctors of the day, such as psychiatrist Pierre Janet who studied her condition and wrote many articles on her signs in relation to dual brain theory (Rieber 143).

Doctor Arthur Ladbroke Wigan was another scholar who embraced the dual mind theory as proposed by Gall. In his book *A New View of Insanity* (1844) Wigan explains that he believes that he is able to prove that "each cerebrum is a distinct and perfect whole, as an organ of thought" (26). He also claims that each cerebrum is capable of having free will, often opposing the other. He explains that according to his research in the average healthy person one of the cerebra is dominant and in control over the other. The superior cerebra can prevent

thoughts from the inferior cerebra from turning into actions (Wigan 26). Insanity can occur, according to his research, when one of the cerebra begins to suffer from a functional disorder or from a positive change in structure. The healthy organ should be able to control the volition of the other cerebrum until it becomes too damaged to properly function on its own. When this point is exceeded the disturbed cerebrum will be able to defy the volition of his fellow and the person will become insane (Wigan 26).

Wigan first became interested in the workings of the brain and the possibility of two independent organs functioning as the brain when he came across a patient who after his death was found to have only one hemisphere. Days before he died the man of about fifty years old was well able to have rational conversations and he even wrote verses (Wigan 40). Wigan was eventually led to agree with Gall. Wigan wrote "one hemisphere, or as I prefer to call it, one brain, is a perfect instrument of thought and ratiocination" (Wigan 41). Wigan also began to search for earlier records of people missing a hemisphere. He found that Gall had also written a report on a patient who after his death was found to miss a hemisphere. The patient was a clergyman who suffered from erysipelas on his forehead, an infection usually causing a rash on the patient's skin (Wigan 51). It randomly arose and faded. Later the clergyman became enfeebled to his left side. This resulted in the patient not being able to walk without a stick. He eventually died from an apoplexy (Wigan 51). Gall described that the patient "three days before his death he had preached, and had been occupied as usual in the instruction of youth" (Wigan 51-52). After the man had died Gall found that the right hemisphere was "a clotted substance of a dirty yellowish white" (Wigan 52).

Years after Wigan published his book, doctor David Ferrier published a related article called "The Brain of a Criminal Lunatic." In the article Ferrier describes a woman who was mentally ill. She strangled her two children to death. After this act she was admitted to the

Criminal Lunatic Asylum at Broadmoor (Ferrier 62-63). Ferrier also wrote that the woman was described to be "very intelligent as a child and a young woman" (Ferrier 62). After the woman gave birth to her first child she became paralysed on her right side and began to suffer from aphasia (Ferrier 62). She did not lose sensibility on her right side, but she often expressed to feel cold on that side. When she was admitted to the asylum she was generally "almost cheerful" and frequently expresses appreciation for the service of the nurses (Ferrier 63). Ferrier also describes her conversation to be of a "monosyllabic" manner (63). She often forgot words she needed or used the wrong word and afterwards appeared confused (Ferrier 63). On other occasions she was moody, irritable, and cross with other patients. When she felt moody she would be silent and she would occasionally try to break windows (Ferrier 63). The patient often suffered from heavy pain in the left side of her head which was resolved with the use of leeches (Ferrier 63). After she died doctors found that she had a "strikingly abnormal" left brain, missing a large part of her left frontal lobe (Ferrier 62). She was also found to have an enlarge right brain (Ferrier 62).

In her book *Popular Fiction and Brain Science in the Late Nineteenth Century* (2011), Anne Stiles argues that various scientists were encouraged to explore the respective strength of each hemisphere and their power over each other after Wigan published his findings (35). As mentioned above, Wigan already suspected that one hemisphere, or brain, is usually dominant (Wigan 26). Around 1870 an idea called "left-brain superiority" developed (Stiles 35). Left-brain superiority is the belief that the civilized and rational functions of the brain were localized in the left hemisphere (Stiles 36). Three studies largely contributed to this conclusion. Firstly, the physician, anatomist, and anthropologist Broca localized the speech functions in "the third frontal convolution of the left hemisphere" (Harrington, *Medicine,* 73). Secondly, Harrington explains that a study from neurologist and psychiatrist Hugo Liepmann concluded that the left hemisphere "predominated in voluntary, purposeful movements"

(*Medicine,* 73). Thirdly, Harrington describes that clinical studies emphasized that "most or all of the higher 'intellectual' functions, presumably associated with human beings alone, were housed exclusively in the left hemisphere" (*Medicine,* 71). One of the intellectual functions which was then associated with humans exclusively was language, localized by Broca in the left hemisphere. Naturally, the left hemisphere became associated with rational thought and civilized behaviour. Thus scientists believed that in a rational person the left hemisphere would be dominant or superior. Neurologist Oliver Sacks explains that even today the left hemisphere is regarded as "sophisticated and specialized" and "a very late outgrowth of the primate" (2).

In contrast, the right hemisphere became associated with opposite traits. Stiles mentions that most scientists in the nineteenth century associated the right hemisphere with "impulsivity, savagery, animality, and madness" and that this hemisphere was considered "a dark and mysterious territory of the brain" (36). Harrington explains that scientist argued that the right brain had a main role in "passive sensibility, emotion, activities serving trophic, instinctual life, sleep, unconscious thought processing, criminality and madness" (*Medicine* 80). According to Sacks, classical neurology focusses mainly on schematics and not on reality. Sacks explains that the left brain is "designed for programs and schematics" (2). The right brain, on the other hand, "controls the crucial powers of recognising reality which every living creature must have in order to survive" (Sacks 2). The focus of nineteenth-century scientists was not on the brain's visualisation of reality, which is a major contribution of the right brain, and thus the right brain was seen as "bizarre" (Sacks 2). The right brain was believed to be dominant in social groups which were then regarded to be inferior, such as non-whites and women, and also in maniacs and criminals (Stiles 36).

Wigan wrote that he found a patient in which the brains did not always operate as one organ, but instead produced "distinct and contradictory trains of thought at the same time" (127). He believed that this could only be explained by the hypothesis of two brains with "conflicting volitions" (127). According to Wigan, the patient was "a very intelligent and amiable man" who was able to place himself before his own eyes (126). The man was initially able to laugh at his double, and regarded him as "a subject of amusement" (Wigan 126). Later the man became convinced that he was "haunted by himself" (Wigan 126). Wigan described that the man would argue with his other self stubbornly and that the two selves would at times contradict each other to the humiliation of the man who was very proud of his logical powers (126). Wigan believed that if consensus between the two brains could not be reached it was "produced by the tyranny of one brain over the other" (127). Eventually the man decided that he did not want to go on living in this manner and committed suicide on December 31st when the clock struck twelve (Wigan 126-127). The idea of being haunted by oneself and the idea of having two brains with different personalities who cannot reach a consensus is a key element in *The Strange Case of Dr, Jekyll and Mr. Hyde*. In the novel Jekyll feels so humiliated by his second personality he believes they should no longer share a body and attempts to separate his two beings. Jekyll too decides that he does not want to continue living after he learns that his two personalities can never truly be separated and commits suicide at the end of the novel.

The previously discussed cases of Mary and Felida do not contain a record on brain functioning, so their behaviour cannot be used to test the hypothesis that the left brain is civil and sophisticated and the right brain is emotional and savage. Another mental health patient fully embodied the different views on the different brain halves. This patient was called Louis Auguste Vivet. When Vivet was seventeen he worked in St. Urbain's vineyard where he had an encounter with a viper who wrapped itself around his arm. The event had given Vivet a

terrible fright and resulted in a loss of his consciousness that evening (Faure et all 105). Afterwards, Vivet started experiencing violent convulsions which eventually led to the paralyses of his lower limbs (Faure et all 105). He was brought to an asylum because he could no longer walk and he would be taught the trait of tailor, but after a few months he started to experience violent attacks which occasionally left him unconscious (Faure et all 105). After an attack leaving Vivet unconscious for fifty hours Vivet woke up and asked for his clothes so he could go to his work in the field. He was again able to use his legs, but Vivet no longer recognized any of the other patients or the doctors who worked with him (Faure et all 105). Apparently, his personality also changed. Faure et.al. describe that Vivet "had become quarrelsome, he lacked morals, and his appetite was different" (105). Camuset also describes Vivet's change in *Un Cas de Dédoublement de lá Personalité* (81).

In the summer of 1881 Vivet was released from the hospital, since he would soon be eighteen and the Department of Justice would no longer pay for his medical attention (Faure et all 105). Months later he was admitted to the St. George asylum where he experienced "a wide variety of symptoms ranging from total paralysis to no physical complains at all; his character varied from being very impulsive and dangerous to being calm and gentile" (Faure et all 105). He was later admitted to several other hospitals and asylums and he was placed under the care of different doctors. When he was placed under the care of physician Voisin, doctor Berjon, who also worked with him, wrote that Vivet had shifting moods and easily became irritated at the least problem (Berjon 14). Voisin wrote that Vivet's condition was "a burning case of male hysteria" (213). Micale mentioned that other doctors related to the case were reminded of female hysteria (178). Later, while still under the care of Voisin, Vivet was occasionally able to walk and at other times unable to walk. Faure et all write that when Vivet could not walk "he presented a gentle character, and when he could walk, he was quarrelsome and inclined to steal" (105). The personality changes Vivet experienced are reflected in *The*

Strange Case of Dr. Jekyll and Mr. Hyde by the shift in personality Jekyll experiences when he becomes Hyde. In comparison to Vivet, Jekyll would be Vivet's "calm and gentile" personality and Hyde would be Vivet's "impulsive and dangerous" personality.

When Vivet was placed under the care of Myers and later under Bourru and Borut he was often experimented on. With the use of metal constructions and magnets the scientists could induce the patient's hemiplegia[2] and anaesthesia[3] on either the right or the left side of his brain (Harrington, *Medicine* 143). When they transferred the paralysis an interesting change in personality occurred. Myers wrote, after transferring the paralysis, that "[t]he restless insolence, the savage impulsiveness have wholly disappeared. The patient is now gentle, respectful and modest." (650). This signifies a shift to an almost opposite character. Myers also comments that in contrast to before the paralysis was transferred Vivet was able to speak in a clear manner and only spoke in response to others (650). Bourru and Burot experienced the same changes, they state that Vivet is "a different individual" when he is directed by the right hemisphere of his brain from when he is directed by the left hemisphere of his brain (127). To clarify this statement Bourru and Burot declared that "[t]he right-sided paralysis [inhibiting the left hemisphere] only lets the violent and brutal aspects of his character appear; left-sided paralysis [inhibiting the right hemisphere] transforms him into a quiet and well-bred lad" (127). According to Harrington, Myers, Bourru and Burot believed that the changes in Vivet's personality occurred because "dual, alternating action of the brain's two hemispheres" (*Medicine* 143).

The results from the experiments on Vivet possibly encouraged the idea that the left brain was sophisticated and civilized and intelligent, while the right brain was emotional,

[2] Hemiplegia is a paralysis of one side of the body.
[3] Anaesthesia is artificially induced temporal loss of the ability to feel sensations to allow a surgical procedure to be performed on a patient without the patient experiencing any pain.

savage, and impulsive. This hypothesis was possibly encouraged because Vivet demonstrated behaviour earlier associated with the left hemisphere when the doctors paralysed his right hemisphere and made the left hemisphere the only operating one, and the other way around. His case was very well known in the Victorian era, which makes it likely that Stevenson did hear about it in some manner. It is also likely that he knew about the case concerning Felida since Pierre Janet, who constantly referenced it, was one of his acquaintances with whom Stevenson corresponded while writing his novel (Hacking 150-151). Stevenson's awareness of the cases and possibly the corresponding theories creates the possibility that he inspired elements of his novel *The Strange Case of Dr. Jekyll and Mr. Hyde* on these cases and theories.

1.2 Degeneracy

Another important aspect of brain science in the nineteenth century was the theory of degeneration. The theory spread fear in Victorian society. People worried that their species could be returning to a more primitive state (Eckersley 277). The theory explained deviant social behaviour and deviant physical appearances by stating that the individual suffered from a "degenerate brain" (Eckersley 278). Ultimately, this theory led Féré and Lombroso to believe that one's criminal tendencies were determined by the structure of one's brain (Eckersley 279). Lombroso argued in his book *Criminal Man* (1876) that "criminals are primitive savages who are evolutionarily backward compared to normal citizens" (DeLisi *Oxford Handbooks Online*). Lombroso explained that he believed criminals to possess a range of physical features which could be considered as evidence of their criminality (DeLisi *Oxford Handbooks Online*). DeLisi describes that these physical features could, for example, be "the size and shape of their skull, ears, forehead, and hands" (*Oxford Handbooks Online*).

Lombroso also offers a "phrenological[4] analysis of the skulls of criminals" in his initial chapter (DeLisi *Oxford Handbooks Online*). Furthermore, the degeneracy theory was especially negatively directed towards women from urban settlements. It was understood by Vorachek, Darwin, and Galton that women were more degenerate then men (Vorachek 200; Darwin 327; Galton 340).

According to Navarette, degeneration can be described as "the tendency of organic entities – of human bodies, for example, and bodies of writing – to retrogress from a complex and specialized state to one 'undifferentiated', 'primitive', and […] even brutish" (195). Eckersley explains that behaviour could be classified as degenerate and that this could be an indication of a degenerate mind (278). He mentions that degenerate behaviour was understood to be a "mere outward show of a physiologically degenerate brain" (Eckersley 278). A degenerate brain was believed to be the consequence of the indulgence of not only the individuals suffering from it, but also from his or her ancestors (Eckersley 278). Indulgence is also a key element in both Machen's and Stevenson's novel. According to Eckersley, "facial asymmetry" and also "irregularity of feature" were physical symptoms of a degenerate mind (278). Eckersley also mentioned that the "pseudoscience of phrenology" provided a more elaborate list of symptoms which could indicate that one's brain was in a degenerate state, these could be interpreted by a so called "expert" (278). Both Stevenson and Machen described the appearance of certain characters as bizarre or repulsive to indicate a connection between that character and degeneracy. Eckersley compares this nineteenth-century belief to the contemporary approach and explains that nowadays the root of "deviant behaviour" is sought in the environment of the individual, instead of in his or her body (277).

[4] Phrenology means the detailed study of the size and shape of the brain and skull as indications personality and mental capability.

Eckersley notes that nineteenth-century society feared the possibility of returning to a more primitive state (277). Vorachek emphasizes that the fear for the declining of the human condition was "common sense" in the second half of the nineteenth-century (197). Eckersley believes that this fear inspired Machen to write his novels and gave the audience a sense of "immediacy" while reading the novels (277). The idea of degeneracy appeared in England during the beginning of the second half of the nineteenth century, just after the publication of Darwin's *The Origin of Species* (Eckersley 278). According to Worth, the potential for horror in Darwin's theory "lies in its reminder that we come from beasts" and in the implication that "'underneath it all' the respectable vicar or barrister is a savage" (xxvi). Eckersley explains that "Darwin's theories of the species helped to create a framework in which the punishment of wickedness had to be psycho-physical rather than metaphysical, and sin was now punished by fall not from metaphysical grace but from the highest branches of the tree of evolution" (278). Eckersley continues to explain that Social Darwinists extended Darwin's theory on the hierarchy of evolving and evolved species to the moral and social spheres of human kind (279). Different cultures and social groups were awarded a higher or lower position in the hierarchy (Eckersley 279). The places were assigned mostly in line with the prejudices of the theorizing group (Eckersley 279). Social Darwinists made use of evolutionary theories to explain the existence of morality (Eckersley 279). They assumed that moral behaviour was an upcoming feature of their era, and concluded that natural selection was "biased against immorality" (Eckersley 279). Vorachek explains that degeneration was believed to be local to the poor and the urban working classes (200). Eckersley explains that the "hierarchy of being" which includes a social and a biological dimension, begun to classify humans as either "higher types," claiming those who were born in or had risen to high status, "lower orders" and below that "criminal types" (279). Eckersley adds that according to criminologist and

physician Lombroso and Féré, a criminal was thus a "physiologically determined entity" and his criminality was ultimately "traceable to a condition of the brain" (279).

Vorachek explains that the degeneracy theory was especially hard against working-class women (200). In *The Descent of Man* (1871), Darwin wrote that some of the female faculties are "characteristic of the lower races, and therefore of a past and lower state of civilization" (327). Vorachek mentions that this spread the belief that women were in a less evolved state in comparison to men (200). Sir Francis Galton, who was among other occupations a sociologist, psychologist, and an eugenicist, singled working-class women out because of their "draggled, drudged, mean look" (340). As explained above, the women's deviant physical appearance would be an indication of a degenerate mind, according to the Eckersley (278). Galton expressed his worry that the women's urban life was "crushing them into degeneracy" (340).

Both Stevenson and Machen incorporated ideas from the degeneracy theory in their novels to explain criminal behaviour. In Stevenson's novel, Hyde is described as by Mr. Endfield as "detestable" and "deformed" which would explain his criminal behaviour according to the degeneracy theory (43). In *The Great God Pan*, Helen is described by Austin as "repulsive" which connects her to degeneracy (43). Both novels also portray women as more degenerate than men in accordance with the theory of Vorachek, Darwin, and Galton.

2. Brain Theory in *The Strange Case of Dr. Jekyll and Mr. Hyde*

Robert Louis Stevenson could not have written a novel containing elements of the duality of mind theory without having knowledge of contemporary developments in psychology. It is very likely that Stevenson was reasonably knowledgeable about the ideas and developments concerning the functioning of the brain. Stevenson was very interested in psychology, and mainly focussed on child psychology. According to Julia Reid, Stevenson participated in "the contemporary debate about the nature of childhood," and "engaged in a sophisticated manner with evolutionist understandings of childhood, the imagination and the unconscious" (41). Stevenson wrote various essays on child psychology such as "Child's Play" and "Crabbed Age and Youth." Reid mentions that Stevenson's thoughts concerning child psychology were influential among researchers of child psychology (41). She believes that Stevenson took an evolutionist approach to explaining play and the imagination and that this was essential to the new child psychology (41). According to Dr. Poorva Bhonde, Stevenson portrays a strong knowledge about child psychology, and also reflects on the different stages of the human life in his essays (18). Stevenson's interest in child psychology is a reason to believe that he was also interested in the contemporary developments in the general field of psychology.

Furthermore, Stevenson had two very influential friends in the field of psychology: educational psychologist James Sully and French psychologist, psychiatrist and philosopher Pierre Janet. Stiles mentions that Sully belonged to Stevenson's close circle of friends, and that Stevenson often corresponded with Janet (30). According to Hacking, Janet and Stevenson also corresponded while Stevenson wrote *The Strange Case of Dr. Jekyll and Mr. Hyde* (150-151). According to Saillot and Van der Hart, Janet researched patients who "dissociated their personalities" into what Janet called separate "existences" (57). As

mentioned in the previous chapter, according to Rieber, Janet was also knowledgeable about the case of Felida, and often referenced the case (143).

Sully wrote multiple books on psychology such as *Illusions: A Psychological Study* (1881) and *The Human Mind: A Text-book of Psychology* (1892). In *Illusions,* Sully illustrates how influence of Herbert Spencer and Charles Darwin adapted to the ideas of associationism, and illustrates how these adapted ideas combined with the materialist theories of physiological psychology give an explanation of duality, primitive consciousness, and dreaming (Block 444). In 1876, Sully and Stevenson both joined the Savile Club, a traditional London gentlemen's club located in Mayfair (Block 446). Moreover, between 1876 and 1882 both Sully and Stevenson contributed to the *Cornhill Magazine* with various articles and essays (Block 447). Stevenson's contributions to the magazine include various essays later collected in *Virginibus Puerisque*, such as "On Falling in Love" (1877) and "Apology for Idlers" (1877), also "Crabbed Age and Youth" (1878), and "Child's Play" (1878) and "Truth of Intercourse" (1879). Stevenson also contributed with short stories such as "The Thrawn Janet" (1881) and "The Merry Men" (1882). According to Block, Sully's contributions included "a series of essays providing popularized evolutionist explanations of duality, primitive consciousness, illusions, and madness" (447). Block also mentions that "it was frequently the case that articles by both appeared in the same issue" (447). The two became acquainted, and in his book *My Life and Friends: A Psychologist's Memories* Sully mentions Stevenson as a "brotherly companion" (215). Both writers are said to have influenced each other's work through their discussions on psychological subjects. Sully even mentions that his essay "Dreams and their Relation to Literature" was the product of their discussions on the dream origins of Hyde in *The Strange Case of Dr. Jekyll and Mr. Hyde* (Sully 194). Also, according to Block Stevenson "suggests artistically what Sully analyses

scientifically" by employing "current psychological thought to unfold complex layers of development implicit in human personality" (445).

Furthermore, Ed Block mentions that in the final quarter of the nineteenth century, "Victorian periodicals featured an increasing number of articles and stories treating psychological issues" (443). Various journals and magazines educated their readers about dual consciousness between 1873 and 1896 (Block 443). Block mentions the "*Contemporary Review*, the *Fortnightly Review*, the *Nineteenth Century*, and the *Cornhill Magazine*" as periodicals presenting information on psychological topics. An example of an essay featured in these periodicals is "Do We Have Two Brains?" by R. A. Proctor, which appeared in the *Cornhill Magazine* in 1873. As mentioned above, Stevenson would later write for this magazine between 1876 and 1882 (Block 447). The interest of the periodicals in psychological topics indicates that there was also an increasing public interest in psychology. The growing popularity of dual consciousness theories make it almost certain that Stevenson, who previously showed interest in the psychology, was aware of the contemporary development within the psychological field.

It can be concluded that Stevenson was well aware of the psychological developments of his century. He showed an interest in psychology and wrote various articles on child psychology (Block 447). Stevenson also conversed with Pierre Janet who researched patients with dissociated personalities and was very knowledgeable about the case of Felida (Stiles 30; Rieber 143). Stevenson also discussed related topics with his friend James Sully who studied, among other topics, duality, primitive consciousness, and dreaming (Stiles 30; Block 444). Also, during the final quarter of the nineteenth-century essays on psychology were featured more often in popular periodicals (Block 443). Stevenson also wrote for *Cornhill Magazine*, a magazine which featured various psychological essays (Block 447). There is enough evidence

to suppose that Stevenson was aware of the theories on the dual brain and duality and could have used these theories in his novels.

2.1 Duality in the *The Strange Case of Dr. Jekyll and Mr. Hyde*

In the novel, Stevenson mentions duality quite directly in Jekyll's full statement of the case. In this statement Jekyll contemplates duality within humans. He expresses his belief in the "primitive duality of man" (204). With this Jekyll means that "man is not truly one, but truly two" (204). With this claim it seems Jekyll is in agreement with Wigan's proposed theory that each brain is a complete organ of thought and has its own free will (26). Jekyll also expresses agreement with the idea that the soul or the volition of each brain often stands in opposition to the other when he articulates that there are "two natures that contended in the field of [his] consciousness" (205). Jekyll emphasizes the disagreement within himself by stating that "in the agonised womb of consciousness, these pair twins should be continuously struggling" (206). The emphasis is understandable because his dual nature is the crucial element of his problem.

Jekyll portrays his two identities as complete opposites, giving one the label "just" and the other the opposite label "unjust" (205). These moral labels demonstrate that the dominant ideology imposed judgement on behaviour. According to Jekyll, both identities would benefit from separation. The "just" identity would "walk steadfastly and securely on his upward path, doing the good things in which he found his pleasure" (205-206). This side of his identity would also "no longer be exposed to the disgrace and penitence by the hands of his extraneous evil" (206). On the other hand, Jekyll's "unjust" identity would be "delivered from the aspirations and remorse of his upright twin" (205). This resembles Wigan's idea that the two brains were each other's opposite (Wigan 26).

Wigan also proposed that one brain is usually superior and able to exercise control over the other brain, for example by not allowing the volition of the other to be transformed

into an action (26). Within the novel, Jekyll's "just" identity has been superior during most of his life, which would be his left brain according to nineteenth-century psychology. This can be concluded because Jekyll was well-respected by society. In the chapter "Dr. Jekyll Was Quite at Ease" an omniscient narrator describes Jekyll as an intelligent and kind man, which are both signs of left-brain-superiority. Also, when Jekyll changes into Hyde for the first time he says that he transferred to the "evil side of [his] nature" which Jekyll mentions is "less developed than the good" (212). Wigan also explains that insanity occurs when a damaged brain begins to control the healthy brain (26). In the case of the novel, insanity would occur when Hyde takes over Jekyll as the superior identity. Hyde's brain is not medically injured or damaged, but the change in superior identity does occur and symbolizes Jekyll's move towards insanity. The shift from Jekyll to Hyde as the superior identity happens at the moment Hyde murders Carew. Carew is described as "an aged and beautiful gentleman with white hair" who at the arrival of Hyde "bowed and accosted the other with a very pretty manner of politeness" (86). In contrast to Hyde, Carew is described through his relation to the left hemisphere, since he is described as very polite, which is a form of civility and sophistication. Carew also bears a resemblance to Jekyll who is also older than Hyde, because after Jekyll changes he states that he is "younger […] in body" when he becomes Hyde (210). Jekyll is described to have "white" hands, a colour also used to describe Carew's hair (223). Moreover, Jekyll is described as good looking, it is said he is a "smooth-faced man" (76). Finally, Jekyll is also civilized and well mannered. He is described as "good" as opposed to the "evil" Hyde (212). Also, Jekyll is said to be very kind (76). Since Carew and Jekyll are much alike, and both very much related to the left brain, the murder of Carew by Hyde, who can be seen as the personification of the right brain, can be seen as the right brain taking control over the left brain.

2.2 Jekyll as a Personification of the Left Brain

Jekyll is not only described as someone who has a superior left brain. He represents what he calls his "just" identity, opposing the "unjust" side of his identity represented by Hyde. He is also the embodiment of the Victorian idea of the left brain. The left brain was associated with civilized and rational behaviour. Harrington mentions the left brain was seen as the centre of "higher intelligence" (*Medicine* 71). Furthermore, Sacks explains that the left brain was regarded as "sophisticated and specialized" (2). Jekyll is connected to the left brain through his intelligence, his kindness, and his handsome appearance.

First of all, Jekyll is described as an intelligent man who surrounds himself with other bright individuals. The first proof of Jekyll's intelligence in mentioned in the title of the novel where he is described as *Dr. Jekyll*. To become a doctor, one generally has to enjoy a high education. Moreover, there is also a physical indication of Jekyll's intellect when it is mentioned that his hands are "professional in shape and size" (223). Furthermore, Jekyll is a very sophisticated character who defines himself as "fond of the respect of the wise and good among my fellow-men" (201). The men at a dinner party Jekyll gives for his closest companions are described as "all intelligent, reputable men" (75). Jekyll's inclusion in the description of the party indicated that he appears respectable in the eyes of society and conforms to society's expectations of how a bright individual behaves. Jekyll's accomplished acquaintances and his own indisputable intellect are the first of three elements Jekyll shares with the left brain.

Secondly, Jekyll is described as a very kind and generous man. According to Stiles, civilized behaviour was regarded as regulated by the left brain in the nineteenth century (36). Jekyll expresses his civil nature through his kind and generous actions. He is described to carry "every mark of capacity and kindness" (76). Furthermore, the novel states that Jekyll "had always been known for his charities" (118). Jekyll's civil nature is also expressed

through his patience. At one point it is mentioned that Jekyll and other men "liked to sit a while in [Mr. Utterson's] unobtrusive company, practising for solitude, sobering their minds in the man's rich silence after the expense and strain of gaiety" (76). Not only is patience a sign of civil behaviour, it also draws a clear contrast between Jekyll and Hyde, who is said to suffer an "ill-contained impatience" (87). Not only is Jekyll Hyde's opposite regarding patience, his kindness also marks Jekyll as Hyde's reverse. In his full statement of the case Jekyll declares that "as good shone upon the countenance of one, evil was written broadly and plainly on the face of the other" (212). The divide between Hyde and Jekyll makes Jekyll seem an even better person because Hyde is described so negatively. Also, just as his intelligence, Jekyll's civility connects him to the left brain.

Thirdly, the doctor is described as a handsome man. The novel attributes mental and physiological aspects of a person with moral aspects, just as Lombroso did while classifying deviant physical aspects as criminal. Lombroso states that it is unexpected for a handsome man to be a criminal (51). This indicates that it was expected for a handsome man to be respectable. Also, Jekyll's appearance does again make him Hyde's opposite. Jekyll is said to be "a large, well-made, smooth-faced man" (76). Especially in the description of their hands, the two are true opposites. Before it was mentioned that Jekyll's hands are described as "professional in shape and size" (223). His hands are also described as "large, firm" which makes him manly, and also as "white and comely" (223). In the Victorian age it was common for psychologists to regard white males as having a superior left brain (Stiles 36). Hyde's hands, on the other hand, characterize him as being more primitive, they are described as "lean, corder, knuckly, of a dusky pallor, and thickly shaded with a swart growth of hair" (223). Stiles describes Jekyll as "the pinnacle of the evolution" and remarks that Hyde can be seen as the "nadir" of the evolution (37). Finger called the brain Hyde personifies "the

primitive right" (151). Jekyll's appearance connects him to the left brain through his opposition to Hyde who is, due to his primitive appearance, connected to the right brain.

In conclusion, Jekyll can be regarded as the personification of the intelligent, sophisticated, and civilized left brain. Harrington explains that "Jekyll would tend to focus his personality in the civilized, rational left hemisphere" (*Medicine* 136). Finger also mentions that the doctor is "the personification of the cultivated left hemisphere" (151). He can be regarded as the personification of the left brain because he is intelligent and Harrington described that the left brain was believed to regulate "most or all of the higher 'intellectual' functions" (*Medicine* 71). Also, Stiles mentioned that civilized behaviour was associated with the left brain and Jekyll can be described as civil because he is very kind and generous. Finally, according to Stiles the left brain was believed to be superior in white men, so Jekyll's white, male appearance connects him to the left brain (36). Jekyll is through his appearance and kindness also very much characterized as Hyde's opposite which also forms a connection between Jekyll and the left brain since Hyde can be seen as a personification of the right brain, as will be illustrated later.

2.3 Hyde as a Personification of the Right Brain

For nineteenth-century psychologists the right brain had a more negative connotation than the left brain. Stiles mentions that the right brain was regarded as the "dark and mysterious territory of the brain" by Victorian psychologists (36). She also mentions that it was regarded as dominant in social groups which were marked as inferior, such as "women, non-whites, maniacs, and criminals" (36). Stiles also mentioned that the right brain was associated with "impulsivity, savagery, animality, and madness" (36). According to Harrington, the right brain was also associated to "emotion," "instinctual life," and "criminality" (*Medicine* 80). Four of Hyde's character traits personify him as the embodiment of Victorian notions about the right brain. First of all, he bears a bizarre appearance.

Secondly, he has criminal tendencies and is associated with groups such as women and criminals and non-whites. Thirdly, Hyde is very impulsive and not in control of his emotions. Finally, he is described as primitive.

First of all, Hyde has a strange appearance and a it is hard for various characters to describe him. Sacks mentioned that the right brain was also seen as "bizarre" (2). In his full statement of the case, Jekyll discusses Hyde and mentions that "[e]vil […] left on that body an imprint of deformity and decay" (212-213). Furthermore, in a conversation between Utterson and Enfield, the former asks about Hyde's appearance. Enfield explains that "He is not easy to describe. There is something wrong with his appearance; something displeasing, something down-right detestable" (43). Enfield concludes that Hyde "must be deformed somewhere; he gives a strong feeling of deformity, although I couldn't specify the point" (43). Later, Utterson meets Hyde and feels "unknown disgust, loathing and fear" when he looks upon him (66). The fact that it is hard to describe Hyde mirrors the fact that it was hard for psychologists to describe the right brain. As mentioned before, Sacks explains that the focus of the nineteenth-century was on schematics. This made it easy to discover the functions of the left brain, but hard to describe the functions of the right brain because it is mostly concerned with recognizing reality (Sacks 2). Hyde is also said to have "dark secrets." This might have been how psychologists felt about the right brain since it had many negative connotations, but its functions were yet to be fully discovered.

Secondly, Hyde is associated with criminality and criminals. According to Stiles and Harrington, the right brain is also associated with these labels (Stiles 36; Harrington *Medicine* 80). In his full statement of the case, Jekyll mentions that "all human being, as we meet them, are commingled of good and evil, and Edward Hyde, alone, in the ranks of mankind, was pure evil" (213-214). Jekyll also calls Hyde "the evil side of [his] nature" (212). Also, Jekyll mentioned that, after he first became Hyde, he knew himself "at the first breath of this new

life, to be more wicked, tenfold more wicked, sold a slave to [his] original sin" (210). Apart from the evident evil associations Hyde bears, he is also described to carry a "murderous mixture of timidity and boldness" (66). Apart from the descriptions, Hyde also actually undertook criminal activities. First of all he trampled a young girl and left her screaming (34). Secondly, Hyde was "haunted for in every corner of the land as the murderer of Carew" (198). Earlier in the novel it is confirmed that Hyde was indeed the murderer as a maid recognized him (87). Hyde is truly a criminal and is through his criminality associated with the right brain.

Thirdly, Hyde was associated with femininity since he is said to have female characteristics. After Jekyll takes on Hyde's identity he is said to experience "the approaches of the hysteria" (192). Hysteria can be described as a "nervous weakness" (Biggs 246). It was believed to occur "largely among women" in American and European cultures (Biggs 246). Hysteria was largely associated with the female mind. Moreover, Stiles mentioned that Hyde seems to be "young and effeminate by virtue of his diminutive stature" and describes him to hold "dandyish tastes" (37). Hyde is connected to both criminals and women, two groups in which the right brain was said to be dominant in the Victorian age. It can be concluded that through his connection to these groups Hyde is also connected to the right brain and to immorality.

Fourthly, Hyde can be described as impulsive and emotional. As mentioned before these are both traits associated with the right brain (Stiles 36; Harrington, *Medicine* 80). A maid once sees Hyde conversing with Carew and describes how Hyde "seemed to listen with an ill-contained impatience" (87). Then, while the maid is still watching Hyde, she describes that "all of the sudden he broke out in a great flame of anger, stamping with his foot, brandishing his cane, and carrying on […] like a madman" (87-88). Hyde can also not control his patience and his anger when Utterson addresses him and says that he recognizes him from

a description given by a shared acquaintance. Hyde demands to hear who described him to Utterson. Utterson mentions that they are both acquainted with Jekyll to which Hyde impatiently responds "with a flush of anger": "He never told you" (64). Once again Hyde demonstrates his hatred and anger. Stiles also mentions that she believed Hyde to be an "emotional liability" (37). Hyde's violence and fits of emotion associate him with the right brain because these were accepted associations Victorian psychologists shared on the right brain.

Finally, Finger describes Hyde as "the growing personification of the 'primitive' right hemisphere" (151). Both the right brain and Hyde are described as primitive. Psychologists believed the right brain regulated "activities serving trophic, instinctual life" (Harrington, *Medicine* 80). In the novel, Utterson describes Hyde as "hardly human" (66). Stiles also argues that Hyde can be seen as the "nadir" of the human evolution (37). Close to the notion of Hyde being primitive, the right brain is also seen as associated with "animality," according to Stiles (36). Hyde is described as "dwarfish" and to have hands with "a swart growth of hair" (65;223). The hair gives him an animalistic connotation, and together with his dwarfish appearance one might associate him with a primate. Furthermore, John Kelman wrote an introduction to the novel in which he mentions that "the fact that fragments of a very remote past and of primitive instincts of the brute seem to be still capable of leaping up into conscious life" (19). In the novel Jekyll also describes Hyde as "the brute that slept within me" (245). The sentence by Kelman can be interpreted as the "primitive instincts of the brute" Hyde, who is "leaping up" inside Jekyll, again referencing Hyde as a primitive being. Hyde is the personification of the right brain because the right brain was said to be primitive and Hyde is connected to primitive beings and the fear of degeneracy through his appearance.

In conclusion, Hyde is hard to describe, just as the right brain was hard to describe for nineteenth-century psychologists. Also, Hyde is criminal, feminine, impatient and can said to

be primitive which are all qualities he shares with the right brain. Therefore, Hyde is the true personification of the right brain. Also, according to Wigan, the two brains would usually oppose each other (26). In a similar fashion, Jekyll and Hyde truly oppose each other since one is described as evil and impatient and primitive, while the other is described as kind, patient, and civilized. Wigan also stated that between the two brains there is usually one dominant brain (26). As mentioned before, between Jekyll and Hyde a superior character can also be appointed, namely Jekyll, the "just" identity, because before the first transformation Jekyll was seen as a respectable and intelligent man. Intelligence was believed to be regulated by the left hemisphere. Wigan also describes that insanity can occur when one suffers from a shift in the superiority structure, when the damaged brain begins to control the volition of the healthy brain (26). The same can said to be happening within Jekyll and Hyde. In the beginning Jekyll is in control and changes into Hyde only when he desires to, but later Jekyll states that his "new power tempted" him and that he eventually "fell in slavery" to it (216). At this point Jekyll becomes insane since he does not exercise full control any longer and will start the road to his death. Since the characters of Jekyll and Hyde and the structure between them resemble so much of what the nineteenth-century psychologists believed about the dual brain, it can be said that together Jekyll and Hyde mirror the brain and individually Jekyll personifies the left brain while Hyde personifies the right brain.

2.4 Women in *The Strange Case of Dr. Jekyll and Mr. Hyde*

Only a slim amount of women appear in the story and their presence is always brief. This may lead to the believe that female characters are insignificant in the novel. Andrew Lang even states that "no woman appears in the tale" (Lang 201). The opposite is true, however. Women do not have major roles in the story, and many do not speak, but they do appear frequently throughout the narrative. Many of the women are described through features associated with the right brain. Stiles explains that just like criminals, women were

often believed to have a superior right brain (36). In this novel, their relation to the right brain is mostly apparent through their emotions and their inability to control these and also through their evil appearance and their relation to dreams. Women appear mostly in relation to Hyde, which could indicate his relation to the right brain. Five appearances of women will be discussed and their description will be discussed in relation to the right brain.

The previous chapter states that the right brain was associated with, among other groups, women (Stiles 36). It was not uncommon to assume that the right brain is dominant in a woman. Within the novel there are only few mentions of female characters. The women who are mentioned do show behaviour associated with the right brain. The first mention of a female character in the novel is in "The Story of the Door". Here, a young girl is "running as hard as she was able down a cross street" (34). Not much is said about this girl besides the fact that she was trampled by Hyde and afterwards remained "screaming on the ground" (34). First of all, the fact that she was running can be seen as impulsive. Impulsive behaviour was believed to be regulated by the right brain after Louis Vivet, a patient with a dual personality disorder, showed "savage impulsiveness" when his left brain was medically paralysed so the right brain was the only operating one (Myers 650). Secondly, screaming is associated with emotion or pain, which was also associated with the right brain (Harrington, *Medicine* 80). The girl is about "eight or ten," which makes it acceptable for her to be impulsive (34). Also, screaming is natural after being trampled. The reader learns only about two actions of the girl and these are both associated with the right brain, even if the behaviour was natural for the situation. After the incident with the little girl, her family is furious at Hyde. The women are described to be "as wild as harpies" (37). Again it is perfectly natural for these women to be angry, however, they are not described by any other feature than their anger. The present male character is the doctor, he is said to experience "the desire to kill [Hyde]" when he lays eyes on him. However, he remains calm and does not act on his emotions (36). The women, on the

other hand, have a hard time controlling their anger and the doctor explains “we were keeping the women off him as best we could” (36-37). Other women in the novel are also mostly associated with the right brain.

Another female character appears in the part called “The Carew Murder Case”. This part features a “maid servant” who oversees Hyde trample another victim (85). The woman is described in terms of her emotions, which again associates her with the right brain. Before she witnesses the spectacle, she is described as “romantically given” (85). Furthermore, when she describes the encounter she does so “with streaming tears” (86). Another aspect of her behaviour can also be associated with the right brain, since the right brain was said to regulate “sleep” and “unconscious thought processes” (Harrington, *Medicine* 80). The maid demonstrates two different behaviours associated with unconscious thought processing and sleep. First, when she sits down next to the window through which she will later see Hyde, she is said to immediately fall “into a dream” (86). Dreaming is an unconscious thought process and was thus believed to be regulated by the right brain. Secondly, after she witnessed Hyde trample his victim “[a]t the horror of these sights and sounds, the maid fainted” (88). In this context, fainting could be described as the right brain taking over in a calm manner. This woman is not only defined by her right brain. The right brain is dominant because of her connection to sleep and dreaming and her emotions. If she also possesses a functional left brain both are operating and define her. When the maid sits down under the window it is said that “never had she felt more at peace with all men or thought more kindly of the world” (86). This could be classified as a very civilized thought and shows that even though she shows more features of the right brain, she is not completely defined by it.

The third woman to appear in the novel is Hyde’s landlady. This woman is also quite dubious in terms of brain superiority. First, she is described as an “ivory-faced and silvery-haired old woman” (94). Then, it is mentioned that she has “an evil face, smoothed by

hypocrisy" (94). This is a feature of right-brain-superiority, but on the other hand "her manners were excellent" (94). Excellent manners were believed to be regulated by the left brain because it was said to be "sophisticated" (Sacks 2). The last piece of information given of the woman is that when she believes Hyde to be in trouble a "flash of odious joy appeared upon the woman's face" (95). The fact that it came up suddenly, in a "flash," makes it impulsive. Also, the odiousness of her joy makes her seem unpleasant. Unpleasantness does not bear a direct relation with the right brain, however, in combination with the earlier mentioned "evil face" it can be said that her right brain at least defines part of her character.

Fourthly, Jekyll's maidservant and cook are described as hysterical women, crying loudly in the scene where they appears. We meet Jekyll's servants in "The Last Night", when Mr. Utterson comes to visit Jekyll's household because Mr. Poole is worried about Jekyll and believes someone else to be in his study. At the moment Mr. Utterson enters the house, "the housemaid broke into hysterical whimpering" and the cook was "crying out" (144). Then Mr. Poole and Mr. Utterson discuss the situation and "[b]lank silence followed, no one protesting; only the maid lifted her voice and now wept loudly" (145). Various men are present in the scene. However, while they seem to be able to control their emotions, the women are not capable of this. These women are again described only by features related to the right brain.

Finally, Jekyll describes his experience as Hyde and mentions "[o]nce a woman spoke to him, offering, I think, a box of lights. He smote her in the face, and she fled" (244). In this scene the woman in not described at all. As she is the final woman to appear, it can now be concluded that all women in the novel appear only in relation to or in the presence of Hyde. Not once is Jekyll in the presence of a female character or does Jekyll have a conversation with a female character in the novel. He does describe occurrences where he saw or met women as Hyde in his full statement of the case, but does not experience contact with women himself. Even during the scene with the maid and the cook, the servants are afraid of Hyde

and not of Jekyll. When Mr. Poole and Mr. Utterson reach Jekyll's study the former wanders if it is Jekyll's voice they hear, but Mr. Utterson replies that "[i]t seems much changed," which means that he is most likely Hyde at that point (Stevenson 148). The fact that women appear more frequently in relation to Hyde indicates Hyde's connection to the right brain. Jekyll's lack of direct experience with women could indicate his rejection of the right brain. Charles Campbell offers another explanation and proposes that women in the novel concern "the suppression of sexuality and the resulting sadistic behavior of men" (310). Campbell explains that the novel concerns "the violent acts of the sadistic unconscious of the male characters directed against women" (320). In this view the explanation that women tend to appear around Hyde and not Jekyll could be that Hyde represents the "violent acts of the sadistic unconscious" and therefore needs to be around women to express the "sadistic behavior of men" since he is the right brain and thus the criminal and violent side.

In conclusion, women in the novel are described mostly or entirely through their relation to the right brain. This is in line with the nineteenth-century idea that women are believed to have a superior right brain (Stiles 36). Female characters tend to appear only in relation to Hyde, which could indicate his connection to the right brain and Jekyll's rejection of this same brain as he does not directly encounter women. The scientific discourse of the Victorian age upheld not only the dominant moral framework, but also the dominant gender ideology by forcing certain labels on women and depicting them as less developed than men through science.

2.5 Conclusion

The analysis of *The Strange Case of Dr. Jekyll and Mr. Hyde* shows that Stevenson was well aware of the psychological developments of his time and incorporated the dual brain theory into his novel to comment on the use of moral labels in scientific research and the oppressive state of the Victorian society. It can be concluded that Stevenson was aware of the

dual mind theory because he was interested in psychology and wrote articles on child psychology. Also, Stevenson made friends among very influential psychologists such as James Sully and Pierre Janet. Stevenson incorporated the dual mind theory in his novel by portraying Jekyll as the left brain and Hyde as the right brain, and also by portraying women as governed by their right brain. The fact that Jekyll wished to hide part of his personality by separating himself from this part of himself demonstrates the oppressive nature of his society. Science in the Victorian era had a moral dimension since scientists used science to attribute mental and physiological aspects of an individual with ideological constructs such as good and evil. In the novel this is reflected by the fact that Hyde, who is seen as evil, is also deformed, and the fact that Jekyll and Carew are described as respectable men who are also handsome. Connecting moral labels such as "just" and "unjust" to the different brains demonstrates society's resent towards certain behaviour. The labels also indicate that scientists tried to enforce morals on science, even though morals are man-made and cannot be used to explain science. The novel argues that the oppressive society is destructive since it drives certain people to ruin for not meeting the society's standard. Furthermore, the novel illustrates how science upheld the dominant gender ideology by portraying all female characters in agreement with the scientific theories which state that women are less developed and dominated by their right brain (Vorachek 200; Darwin 327; Galton 340; Stiles 36).

3. Brain Theory in *The Great God Pan*

There is only slim evidence of Machen's interest in the workings of the brain. In the year 1880 Machen first visited London. He was about to start his medical career by studying at the Royal College of Surgeons in London. However, Machen failed his initial examinations and was not allowed to enrol. Afterwards, he returned to his family in Wales with the idea of becoming a journalist (Worth xii). Machen's intention to study the surgeon's art indicates that he was interested in the medical world and the workings of the human body. Moreover, Worth believes that Machen was aware of contemporary ideas about the brain. He suggests that "[w]ithout question Machen's interest in, and treatment of, the brain in both these stories [*The Great God Pan* and *The Inmost Light*] draws upon contemporary developments in neuroscience" (Worth xiv). Worth also argues that in his novels Machen suggests that "modern disciplines are only catching up with the 'sciences' of a bygone age" (xiv). As an example Worth mentions that the "grotesque recapitulation of forms" Helen undergoes in *The Great God Pan*, during her death, do not only resemble the evolutionary ideas of Darwin, but share a closer resemblance with the evolutionary theories of Thomas Vaughan, a seventeenth-century alchemist, with whom Helen shares her last name. According to Arthur Edward Waite, alchemists, during Vaughan's time, extended their doctrine of evolution to "the soul and spirit of man" (xxix). They also believed in what Waite calls the "kingdom of Nature," "all existing substances […] contain elements or seeds of a higher perfection in any given direction than they can normally manifest" (xxix). As examples of "substances" Waite gives "the substance of spirit and soul, of animal and vegetable life, of metals and of stones" (xxix). According to Waite, the alchemists suggested that "there is no practical limit to their progress towards perfection" (xxix). The alchemists' interest in perfection originated in their fear for degeneracy. Also, the alchemists insisted that "man is the agent and dispenser of Devine [sic] power for the development of his own and the latent energies of all earthly things" (Waite

xxix). Finally, they believed that achieving the "union of individual consciousness in the universal consciousness of God" was the culminating essence of the evolutionary theory in relation to mankind (Waite xxix). In alchemy a scientific discourse and a spiritual discourse are combined. It is reasonable to accept that Machen knew about Thomas Vaughan and his work since Waite, who collected articles from Vaughan and published various books on Vaughan, was a "good friend" of Machen according to Susan Johnston Graf (62). Graf later mentions "Waite was not only a lifelong friend, but also a strong influence on Machen" (64). She mentions that Machen and Waite worked together to discover how the Order of the Golden Dawn, of which they were both members, was founded, since they believed the available story to be apocryphal (58). It can be concluded that Machen showed an interest in medical studies through his attempt at a medical career. Furthermore, it is reasonable to assume that Machen based his stories on contemporary scientific developments and that he was aware of evolutionary theories from Vaughan through his friend Waite.

3.1 Degeneration in the *The Great God Pan*

Navarette explains that Machen focusses on "the devolutionary quality of degeneracy" in *The Great God Pan* as well as in other novels (195). In accordance with Vorachek, Darwin, and Galton, Machen portrays female characters as possibly degenerate in *The Great God Pan*, as well as in some of his other novels. Eckersley mentions that in Machen's novels "the degenerate possibility is in the female sex" (285). Eckersley continues to point out that throughout Machen's novels imagery of wedding-nights often surrounds scientific acts and traumatic senses (285). Eckersley also suggests that both science and the sense of trauma identify "a fear of some primitiveness in women which can be released through an unbalanced and perverted carnality" (285). Even though the possibility is in the female body, men usually cause the degeneration to occur. Eckersley explains that "women submit to appalling acts at the hands of men, through which the women become monsters of both physiological and

moral degradation, and the fascinating slime of evil finds a way into the world" (285). In *The Great God Pan*, Mary submits to Dr. Raymond and lets him perform a surgical operation on her which will allow her to "see the god Pan!" (Machen 7). After a short moment of ecstasy "the wander faded, and gave place to the most awful terror" (15). After this account Mary "never recovered her reason" (107). Nine months later Mary gives birth to Helen and "a few days after the child was born, she died" (107). Thus, Dr. Raymond degrades Mary and gives the slime of evil a way into the world through the birth of her child Helen, who will be the cause of death for many men she will encounter in her life.

Helen is physically ambiguous and this indicates that she is a more primitive being and has a degenerate brain, which would indicate that she has an increase possibility to become a criminal, since Féré and Lombroso believed criminality was "traceable to a condition of the brain" (Eckersley 279). In the novel, Helen is physically described by Austin and Charles Herbert. Also, her physical appearance is described by Dr. Robert Matheson, who explains her features while she dies. This section will focus on the description of Austin and Herbert, Matheson's description will be the subject of a later section. The descriptions from the two gentlemen contradicted themselves in saying that Helen is both beautiful, but also loathsome and curious. Austin describes Helen to have once been "the most beautiful woman and the most repulsive" (43). Charles Herbert describes Helen as a "strange beauty" when illustrating how he met her to Villiers (33). There is a reasonable argument for believing that Helen could make a gruesome impression on men if she wanted to. While discussing Helen, Austin tells Villiers that when a man tried to describe Helen to him, the man "positively shuddered as he tried to describe the woman, but he couldn't tell why" (44). Navarette argues that Helen corrupts men by "introducing her male friends to her father" (189). Her father being the great god Pan. How she does this is not described, but it is reasonable to assume she carries his features at least partially through her looks. Even though she is also described as

being pretty, Helen's disturbed looks indicate a form of degeneration. Also, similarly to Hyde, her physique could indicate a sense of primitiveness. Possibly, her degenerate indications could give the men an uncanny feeling and be the cause of their uneasiness.

According to Eckersley, the account of Helen's death is described as a "flickering backward-run down the evolutionary tree towards protoplasm" (283). As mentioned above, the description of the death of Helen is given through a letter from Dr. Robert Matherson. First, the doctor initiates by stating that he saw "the work by which man had been made" repeated before his eyes (100). This indicates that he would have seen Helen's body degenerate back into a primitive form at the root of the evolutionary tree. Secondly, Matheson mentions that he sees "the form waver from sex to sex" (100). Then, Matheson mentions he saw her body "descend to the beasts whence it ascended from" (100). He continues to describe that he saw "that which was on the heights go down to the depths, even to the abyss of all being" (100). Thus, he witnessed her body return to the beginning of evolution and eventually it became "a substance as jelly" (100). Navarette mentions that this passage is defined by "dissolution" and in agreement with Eckersley, she also expresses her belief that "Helen's death throes embody a reverse ontogeny" (190).

According to Navarette, the protoplasm which Helen's body eventually becomes reveals her origins. Navarette describes the protoplasm as "sublimely abject substance-indefinite, unstable, amorphous" (190). Navarette mentions that Helen's father, Pan, is described as a similar creature (190). Pan is described as "neither man nor beast, neither the living nor the dead, but all things mingled, the form of all things but devoid of all form" (12). This description of Pan is true to his nature since he combines human, bestial, and divine elements (Merivale 76). Helen is also described along these lines just before she dies, she is described by Dr. Matheson as "a horrible and unspeakable shape, neither man nor beast" (101). Through this deformation of her body, Helen becomes the "quintessential site of Gothic

horrors," according to Navarette (190). She mentions that the reader would regretfully recall the time when they could criticize the intruding boundary of a primitive kingdom, as opposed to living in a time when this boundary is unclear and humans have the possibility to degenerate (190). She explains that society's introduction to protoplasm led to the suggestion that mankind existed not at the top of the evolution. Huxley explained the human position as being in an "intermediate kingdom, a sort of biological No Man's Land" where "it is admittedly impossible to draw any distinct boundary line" between what he named "the vegetable world" and "the animal" (134-135). According to Huxley, calling an organism an animal or a plant was a matter or mere convention (134-135). In a society which fears returning to its primitive state the suggestion that they are not distinct from a vegetable for other reason than convention must be a threatening thought.

Further evidence of degeneration in the novel can be found in its structure. Navarette mentions that "narrative hesitations as well as the stylistic disruptions of '*The Great God Pan*' thus serve as signposts of linguistic and structural degeneration" (193). Just as *The Strange Case of Dr. Jekyll and Mr. Hyde*, the novel is filled with omissions and gaps. Earlier in het analyses of the novel Navarette herself commented that "various episodes are truncated, their conclusions inconclusive: manuscripts are sealed at just the moment when it would appear that long sought revelations are imminent" (191). An example of a disruption in the novel occurs when the reader is just about to learn what Rachel, Helen's childhood friend, saw in the forest that made her so upset. Mr. Clarke, who was reading the account, closes the book in which the history is recorded and claims that such a "wild story" is "too incredible, too monstrous" and that "such things can never be in this quiet world," leaving the reader to guess what Rachel saw (28). Another mystery in the novel is how Helen induces the gentlemen to make themselves a subject to suicide. The men are similar to Dr. Lanyon who lost the will to live in *The Strange Case of Jekyll and Hyde* after seeing Jekyll's transformation. Navarette

argues that the "linguistic and structural degeneration" can be regarded as "analogous to biological and cultural dissolution" (193). Navarette uses a theory from Bourget to substantiate her argument. In his book *Essais de Psychologie Contemporaine*, Bourget draws a correlation between literary decay and organismal degeneration and he also treats textual decomposition as a sign of cultural collapse and decay.

Reading the novel with Vaughan's theory of evolution in mind, it is possible to explain why Doctor Raymond believed Mary could indeed "see the great god Pan!" (Machen 7). It is possible Doctor Raymond believed Mary could unite her consciousness with Pan's because, just as all other substances, her soul and spirit contain the "seeds of a higher perfection," and in doing so Mary would become the peak of the alchemists evolutionary theory (Waite xxix). Doctor Raymond could have believed that with the lesion he made in her brain he allowed seeds to grow and make contact with the divine. According to Waite, Vaughan believed that humans were "agent" and "dispenser" of the divine, so Doctor Raymond possibly believed humans were connected to the divine and only needed a manner to communicate with it (xxix). The doctor mentions that "present day men of science are unable to account for the presence, or to specify the functions of a certain group of nerve-cells in the brain" (6). He continues to say that he is aware of their function and that "with a touch," possibly meaning the lesion, he can "bring them into play" and "complete the communication between this world of sense and," then he stops his sentence and says that he will finish the sentence later (7). Later he mentions that "a spirit will gaze on the spirit world" (7). The communication will thus be between Mary and the spirit world. The spirit world is the divine the alchemists believed humans could contact. After the doctor performed his operation and the veil was lifted for Mary, she only experiences a brief moment of ecstasy which could indicate Machen's doubts about the older alchemists theories.

Another moment in which Vaughan's theory can help clarify the events in the novel is during Helen's death. The jelly-like substance she eventually becomes could be explained to be the higher-perfection seeds alchemist believed al substances to have. The fact that Helen could change her shape during her death could be explained from the fact that these seeds or elements were manifested in all substances throughout nature. Even though Mary only lasted a short while in the universal consciousness, Helen is presumably connected to her father Pan and through her divine connection possibly to all other substances in nature. This would explain her ability to physically change to other forms. Helen represents the homunculus in the alchemist's theory and therefore her death represents the downfall of the alchemists.

3.2 Austin and Villiers as the Personification of the Left Brain

There are two characters who could be said to contain a superior left brain, namely Austin and Villiers. First of all, both are male. Austin is described as "white," and Villiers is described as "attired in the regulation uniform of a man about town, trim, glossy, and eminently well-to-do" and "well dressed" (96; 31; 32). White males were usually believed to have a superior left brain (Stiles 36). In *The Strange Case of Dr. Jekyll and Mr. Hyde* Stevenson uses Jekyll's good looks to create more opposition between him and the dwarfish, deformed Hyde. By describing Villiers's pleasant appearance Machen creates a similar dynamic between Villiers and Helen.

Secondly, both men are described as intelligent. According to Harrington, the left brain was believed to regulate "most or all of the higher 'intellectual' functions" (*Medicine* 71). Austin was, according to Villiers, "famous for his intimate knowledge of London life, both in its tenebrous and luminous phases" (37). The novel implies that Villiers's mind is in a chronical curious state and he "prided himself as a practised explorer" (31). It is also described that Villiers stood "with undisguised curiosity, and with that gravity only known to the systematic diner, had just enunciated in his mind the formula" (31). The left brain fits

within the nineteenth-century schematics and was believed to operate in a systematic manner (2). Both Villiers and Austin are connected to the left brain through their intelligence and Villiers is also described as systematic which is also a feature of the left brain.

Furthermore, Villiers shows kindness and generosity to Herbert when he meets him. When they start walking together Villiers says: "Take my arm, you don't seem very strong" (30). Later that evening he "game him a meal" and eventually Villiers gave Herbert "a small present of money" (36). Just as with Jekyll, Villiers civility is illustrated through his kindness, which connects him further to the left brain.

In conclusion, both Austin and Villiers can be described as the personification of the left brain in *The Great God Pan*. White males were usually associated with the left brain (Stiles 36). Both Austin and Villiers are male and Austin is explicitly described as "white" (96). The men can also be described as the personification of the left brain because they are both described as intelligent. According to Harrington, the left brain was believed to regulate "most or all of the higher 'intellectual' functions" (*Medicine* 71). Finally, Villiers demonstrates his sophistication, which is also a trait associated with the left brain, through his generosity and kindness towards Herbert (Sacks 2).

3.3 Doctor Raymond and Helen as the Personification of the Right Brain

It is hard to determine whether or not Machen was aware of the popular mind theories of the nineteenth century. Therefore, it is also difficult to decide if he incorporated these theories in his novel. It could be said that some characters are described to be governed by their right and other to be governed by their left brain. An example of a character who could have a dominant right brain is Doctor Raymond. The doctor is connected to the right brain because he can be said to have criminal tendencies, and because the description of his laboratory matches descriptions of the right brain.

First of all, the doctor mentions that he has been called a “quack,” a “charlatan,” and an “impostor” (2). This would imply the doctor is a criminal, and criminals were usually believed to have a dominant right brain according to Stiles (36). He is also referred to as a doctor which would imply intelligence and left-brain dominance. Where he has been educated remains a mystery, however, and it is unclear whether or not he actually works as a doctor or if he only researches fantasies such as seeing the great god Pan.

Secondly, the doctor is not physically described in detail, it is said that he is a “middle-aged man, gaunt and thin, of a pale yellow complexion” (2). On these descriptions no conclusions can be drawn regarding his dominant brain. His laboratory, on the other hand, is described in more detail and reveals the doctor to have a dominant right brain. The room is described as a dark an bizarre place. The narrator calls it a “dreary room” (9). Clarke notices that there is an “odd odour” which does not remind him of “the chemist’s shop or the surgery” which would have explained and justified the smell since they are in a laboratory (10). Also, there is a “sad grey light” which lightens the room (8). Finally, the room makes Clarke wonder about the “bizarre effect of brilliant light and undefined darkness contrasting with one another” (9-10). Sacks mentioned that the right brain was also seen as a “bizarre” territory and Stiles mentioned that is was seen as “dark” and “mysterious” (Sacks 2; Stiles 36). The laboratory physically represents the “bizarre,” “dark,” and “mysterious” qualities of the doctor’s mind which connect him to the right brain through the absence of much light and the strange smell and bizarre effects of the lights. Furthermore, Doctor Raymond mentions that the smell could make one sleepy, and moments later Clarke is described to be dreaming (10-11). Harrington described that the right brain was believed to regulate “sleep” and “unconscious thought processes” (Harrington, *Medicine* 80). The doctor manages the sleep of the people in his laboratory, namely Clarke and Mary. This also relates him to the right brain.

Doctor Raymond is described to have been brought in connection with criminal tendencies and his laboratory is a physical representation of the bizarre and dark right brain, just as Hyde's physical appearance indicates his connection to the right brain. However, there is no indication of his emotions and whether or not he is controlled by them. Furthermore, neither is he described to be savage or primitive, which would also have indicated right-brain dominance. It is questionable if Machen intentionally portrayed Doctor Raymond as a personification of the right brain. However, the analysis demonstrates that the doctor does represent the right brain in the novel.

Another character who has a dominant right brain is Helen. Her questionable appearance and her relation to degeneration have been discussed. The fact that her physique is hard to determine is a reflection on the fact that the properties of the right brain were hard to determine for scientists. Just as Hyde she is described to look as if she has dark secrets which was generally the belief about the right brain. Moreover, after Austin saw Helen for the first time he describes to Villiers that the only sensation he can compare her to is "that odd feeling one sometimes has in a dream" (76). This also creates a relation between Helen and the right brain by comparing her to a feeling in a dream. Both emotions and unconscious thoughts and sleeping were said to be regulated by the right brain (Stiles 36; Harrington, *Medicine* 80). The final connection between Helen and the right brain is simply that she is a woman. Women were usually dominated by their right brain according to nineteenth-century scientists (Stiles 36).

Helen can also be said to be the personification of death. In the second half of the nineteenth century, women also became associated with death (Guthke 186). Guthke mentions that before the second half of the nineteenth century artists portrayed death as having many forms, both male and female (186). After the shift towards a female representation of death, death was often portrayed by two women who were "not always neatly distinguishable from

each other" (Guthke 186). Guthke calls them "the angel of death" and "the seductress" (186). He also mentions that "hints of motherliness" can be associated with either of the women (186). In the novel, these two women are Helen, the seductress, and her mother Mary, the angel of death, who dies a few days after giving birth to her. Guthke mentions that an interchangeability came into existence between love and death, "to the point where one may be mistaken for the other" (187). Helen represent this aspect of death by seducing men and instead of making them fall in love with her, she makes them fall in love with the idea of death. Guthke mentions that the connection between women and death originated from male anxiety for "the closeness of women to biological or animal 'nature'" (190). He explains that the "manifest subjection of woman to the biological process reminds man of his own creatureliness, of his own biological origin" and that therefore women remind men of their eventual biological death (190). Helen represents her connection to nature through her connection to the god Pan, who was attributed with "natural settings" through all his existence in religion and literature (Merivale 1).

Furthermore, just as Hyde, Helen represents qualities and desires Victorian men and women had to repress in order to remain respectable. After an encounter with Helen most men commit suicide, an example is Mr. Crashaw who was last seen by Villiers in the company of Mrs. Beaumont, which is a name Helen gave herself, before he committed suicide (80). According to Merivale, nineteenth-century author Swinburne widened the concept of Pan by stressing his "power to terrify" (76). Machen similarly draws upon Pan's terrifying qualities and uses them to demonstrate the danger in the oppressive nature of the Victorian society. As mentioned above Helen corrupts men by "introducing her male friends to her father" (Navarette 189). When Helen introduces men to the god Pan, she evokes inhibitions within these men society would not allow them to act upon. Halperin and Winkler mention that Pan "functions as a 'figure of the repressed' who incarnates the idea of a hallucinatory and

undirected sexuality" (16). Moreover, according to Halperin and Winkler, the god Pan stimulates "dangerous and unregulated desire in others" (16). Similarly, Helen creates unregulated desire in the upper-class men, but since the men wish to remain respected they cannot act upon their strengthened desire. Just as Hyde eventually choses death above the embarrassment of not complying to the expectations of society, the upper-class men who met Helen and her father can no longer live with the shame of wanting to behave in an unaccepted manner and the idea that they may never act upon their desire without being judged for it.

3.4 Conclusion

The analysis of *The Great God Pan* demonstrates that Machen was aware of the scientific developments of his time and incorporated the degeneration theory and the dual mind theory into his novel to comment on the repressive nature of the Victorian society. It can be concluded that Machen was aware of the degeneracy theory because he was interested in a medical career and was friends with Waite, who studied Vaughan. Machen incorporated the degeneracy theory into his novel by portraying Helen as humanities degeneration during her death and by filling the novel with omissions and gaps which represent "linguistic and structural degeneration" (Navarette 193). The repressive nature of society is portrayed through the wish of upper-class men to commit suicide after they encountered Helen and her father who evoked "unregulated desire" in the men (Halperin and Winkler 16). The men cannot live with the shame they feel for wanting to behave in an unaccepted manner and the knowledge that they may never act upon their desires.

Conclusion

It can be concluded that both Stevenson and Machen were well aware of the theories that apply to their novels. Stevenson mainly incorporated the dual mind theory in his novel. This theory is mainly concerned with the psychology of the brain and Stevenson was very interested in psychology. His main interest was in child psychology, he wrote multiple influential essays in this field. Also, Stevenson had multiple friends and acquaintances who were influential in the psychological field such as James Sully, who wrote various books on psychology in which he addresses the dual mind theory, and Pierre Janet, who worked with patients such as Felida X (Stiles 30). Furthermore, the media established an interest in psychological studies during the second half of the nineteenth century (Block 443). The journal Stevenson occasionally featured in also addressed psychological issues in articles such as "Do We Have Two Brains?" by R. A. Proctor. It can be concluded that because of his own interest in psychology together with the interest of the media and his friends Stevenson would have known about the dual brain theory.

Machen mainly incorporated the degeneracy theory into his novel together with elements of alchemy, mainly focussed on Thomas Vaughan. Machen would have known about Thomas Vaughan, since he was a good friend of Arthur Edward Waite, who studied Vaughan and collected articles on him and wrote various books about Vaughan and his work (Graf 64). Machen was also interested in pursuing a medical career, since he wanted to study at Royal College of Surgeons in London. He was, however, not permitted to enrol. Still, it can be assumed that Machen was aware of the degeneracy theory and of the alchemy studies of Vaughan.

Both authors also expresses their attitude towards the theory they incorporated in their novel and express resentment towards the oppressive nature of the Victorian society. Both authors use characters to portray outward respectability and oppose these characters with

characters who represent the aspects of one's personality one needs to hide to remain respectable in the eyes of society. In *The Strange Case of Dr. Jekyll and Mr. Hyde*, Jekyll represents the outward respectability. He is labelled the "just" side of Jekyll's personality and represents the left brain through his intelligence, his kindness, and his handsome appearance. In *The Great God Pan* outward respectability and the left brain are portrayed through the characters Austin and Villiers because of their kindness, generosity, intelligence, and the fact that they are white males. The side of one's personality which needs to remain hidden from society to remain respectable is presented by Hyde in Stevenson's novel. Hyde is marked as the "unjust" side of Jekyll's personality by Jekyll and he represents the right brain through his bizarre appearance, his criminal tendencies, his associations with minority groups, his impulsive behaviour, and his connection to the primitive. The repressive nature of the Victorian society is represented though the fact that Hyde is marked as "unjust" and that Jekyll wished to create Hyde to "no longer be exposed to the disgrace and penitence by the hands of his extraneous evil" (206). Stevenson comments on the fact that Victorian science contained a moral dimension which marked certain traits as moral and other as immoral, and on the destructiveness of an oppressive society by indicating that Jekyll can no longer live with the shame of having unaccepted desires and the knowledge that he will not be able to act upon them and remain respected. He demonstrates the damage a restrictive society does by showing how it first leads Jekyll to split his personality with a mysterious potion and eventually leads him to destroy himself. In Machen's novel Helen represents the desires people hide in order to be respected in society because she represents the god Pan who is said to evoke an "unregulated desire" in others (Halperin and Winkler 16). She also represents the right brain through her ambiguous appearance, the fact that she is a female, and her connection to feelings and dreams. The repressive nature of society is portrayed in the novel through the wish of Helen's victims to commit suicide after their desires were strengthened by

Helen or Pan. The men cannot live with the shame they feel for wanting to behave in an unaccepted manner and the knowledge that they may never act upon their desires. The fact that the men are led to commit suicide rather than act upon their desire demonstrates how restrictive the society is and demonstrates Machen's resent towards this society.

In conclusion, both authors incorporated scientific theories as a tool to demonstrate their resent towards the moral dimension of Victorian science, which was used by scientists to attribute mental and physiological aspects of an individual with ideological constructs such as good and evil. Both authors also demonstrated that the scientific discourse of the Victorian age upheld not only the dominant moral framework, but also the dominant gender ideology. They demonstrate this by portraying all women in the novels as having a superior right brain through their connection to emotions, sleep and dreams, which is in agreement with the dual mind theory. Also, Stevenson and Machen demonstrate the dominant gender ideology found in Victorian science by portraying women as more degenerate through their appearance, which is in agreement with degeneracy theories of Vorachek, Darwin, and Galton. Finally, both authors incorporated scientific theories to express their dislike of the repressive nature of the Victorian society. Characters are not free to act upon their desires while remaining respected in their society because science marked certain behaviour as signs of a degenerate brain or as immoral. The fear of not complying to the expectations of society together with the shame of wanting to behave in an unaccepted manner and the idea that one may never act upon their desire without being judged eventually led Jekyll in *The Strange Case of Dr. Jekyll and Mr. Hyde* and several upper-class men in *The Great God Pan* to commit suicide, which demonstrates Stevenson's and Machen's resentment towards the oppressive nature of the Victorian society.

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