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Loosing the Noose: Genetics, Environment, and Suicide Rates in Male Adult Sexual Offenders

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LOOSING THE NOOSE: GENETICS, ENVIRONMENT, AND SUICIDE RATES IN
MALE ADULT SEXUAL OFFENDERS

A thesis submitted to
Regis College
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by
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Peace-building to me isn't ending a fight by standing between two opposing forces. It's healing those victimized by war, making them strong again, and bringing them back to the people they once were. It's helping victimizers rediscover their humanity so they can once again become productive members of their communities.

-Leymah Gbowee

Disclaimer: This thesis explores the nature of sexual assault and argues for the need to reexamine treatment of sexual offenders while incarcerated and upon release. Due to the prevalence of academic research regarding male adult sexual offenders, this thesis will focus solely on this demographic. In reading this it is important to remember that males are not the only ones to commit criminal sexual acts. It is also vital that we know that sexual aggression and assaults do not discriminate depending on gender. Research and observations show that this demographic of felons tend to face the harshest stereotypes not only within the prison walls, but once upon release back into the community, thus this thesis will follow this specific population.

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Indifference and neglect often do much more damage than outright dislike.

-Albus Dumbledore

Introduction:

Purple folders, purple folders signify sexual offenders. One of the first things I was told as I trained for my summer position teaching math classes to men in a community corrections facility. I was also informed that unless the men divulged willingly, I should not know or ever ask the crime they committed. Yet these purple folders automatically signified and ostracized one specific population, not only to me, and other workers, but also to the rest of the men housed in this “half way house”.

From kindergarten until high school graduation, I lived in a small valley surrounded by mountains, nature, and a community of nine hundred people. Independence and originality were highly valued and fostered, but with that I also lived an incredibly sheltered life. I graduated with 28 classmates, most of whom I knew since the first day of kindergarten. Acceptance and understanding was something we learned from the beginning. Since you sat with the same 28 classmates every day in some form there was no room for hatred or exclusion. I learned to value every soul in one way or another. From this experience, I fully believe in the power of community, thus I ended up at Regis University with a supportive community.

First semester of freshman year I took two “fun” classes, an Introduction to Peace & Justice Studies class, as well as Brain and Behavior. At the time I wished to eventually pursue a career in medicine, either neonatology or emergency medicine. My world changed that first year. Neuroscience and Peace & Justice studies relate to one another in unexpected ways. I started to see the discrepancies in our justice system in regards to

mental health issues and treatment of these men and women. I couldn't comprehend that some of my fellow peers questioned science's use of animals in research settings, but neglected human beings' dignity and life in our prison system, treating them as caged animals. Everyone has the right to their own opinion without judgment, but this realization started a fire that has yet to be put out.

I owe all this to my community throughout the years, but of course, mainly to my family. My parents brought up my sisters and I in an environment that taught us the importance of being uniquely ourselves. As I grew into my own self and learned that not all my opinions were on the same track as theirs, they allowed my own personal views to take hold, flourish, and listened to what I had to say. They taught me to respect and love every human being on this planet. We all come from different places and backgrounds and we must never be judged on such things, these things that ultimately lead us on our life's path.

Thus my community-oriented mind led me on this journey. In discerning what to write, I knew I wanted to discuss one of the many justice issues within the United States justice system. Unfortunately too many issues regarding our justice system arise and I needed to discern where this thesis needed to go. We incarcerate a lot of individuals for an array of offenses, but I wanted to understand and argue for the pariahs among this system, the most stigmatized and hated group of offenders, who upon release receive harsh and critical treatment from their community. I wish to get the point across that every human deserves dignity and humanity, thus I examine perhaps the most reviled group in our justice system, male sexual offenders.

This thesis will be an exploration of genetic, biological, and environmental factors in trying to understand what lead these men to behave in certain ways. Due to past research and the prevalence of male offenders, this thesis will specifically only examine male adult offenders. A thorough examination of certain behavioral issues and prevalent psychiatric disorders and their bases will be looked at in the sexual offender population. Certain environments that escalate symptoms and behavior will be determined and an argument as to why society critically needs to review treatment of sex offenders while incarcerated and once back in the community will be made by looking at differing cultures' standpoints on sex offenders. Success rates will not solely be determined off of recidivism rates, but also suicidal ideation and completion. In concluding this discourse, suicidal rates and the reasoning for these issues will help determine legislative reform from cross cultural examination.

Albus Dumbledore tells Harry Potter in *The Order of the Phoenix*, "Indifference and neglect often do much more damage than outright dislike". Sexual offenders, I argue, are a neglected group in not only our society, but also societies cross-culturally. Community members and society tend to justify neglectful treatment towards this minority and don't see the repercussions they reap. The suicide rate of these men calls for our attention and action in trying to change this fact. Our justice system's goal and intentions fall on blurry lines, but I argue that if our end goal is to help these men thrive and have a life once back in the community, we must question our humanity and legislative accords. Purple folders should not exist between these men and our society.

Chapter 1: Overview

*In matters of truth and justice, there is no difference between large and small problems,
for issues concerning the treatment of people are all the same.
-Albert Einstein*

As of 2016, the overall incarceration rate in the United States was around 2.3 million people total; these numbers include those imprisoned in federal prisons, state prison, jails, and private facilities (Wagner & Rabuy, 2016). While the U.S.A. accounts for roughly 4.4% of the world's population, our population rates in terms of incarceration to the world account for 25% of the total global numbers (Ye Hee Lee, 2015). In fact, while some sources say, North Korea is the only country that exceeds the United States incarceration rate, others claim we already take the cake on the highest prison population with 716 per 100,000 people being imprisoned (Wagner & Rabuy, 2016; Criminal Justice Degree Hub, 2016; Subramanian & Shames, 2013). Estimates calculate that the rate of men in prison will increase 3.3% by 2020 (Harrison, 2016). These increased rates of incarceration can be seen regionally, and the reasons behind this increase can be seen through the legislative bills passed in specific states.

Colorado used to fall 23% below the national average of incarceration in 1990, but as of 2006 Colorado's incarceration rates exceed the average rate by 5%, with a 400% growth in incarceration levels over the past 20 years (Group & Przybylski, 2008). Due to different legislative actions put into place, this discrepancy of previous incarceration rates compared to modern rates, can potentially be determined (Harrison, 2016). In 1998 Colorado passed a stringent bill, The Lifetime Supervision act, imposing mandatory treatment for sex offenders, who must receive treatment in order to be considered for parole. The sex offender population in Colorado penitentiary systems has escalated. According to the Colorado Department of Corrections reports, the state prison population totaled 19,825 as of December 31, 2016 (Colorado Department of Corrections, n.d.). Of

that total prison population 14.2% received life convictions, indeterminate sentences included, 2,818 individuals exactly. Of the life conviction demographic, sexual offenders make up 63%, a total of 1,776 men (and some women) sentenced with “indeterminate” life sentences (Colorado Department of Corrections, n.d.). Due to the indeterminate sentences imposed on sexual offenders in Colorado and the fact that only a third of sex offenders have been release since the enforcement of the law, prison rates in Colorado have increased and will continue to (Harrison, 2016). If these men are eventually allowed release, they are slated with lifetime supervision, never ending their time served until death.

This thesis aims to examine one of the most reviled populations of our society today, male adult sexual offenders, and make an argument on why legislative reform is crucial in their success, as well as success in combating the prevalence of sexual assault. Through research on genetic propensities and behavior, specifically regulation of monoamine neurotransmitters, and environmental factors, success of our justice system in treatment of male sexual offenders will be evaluated. Rather than determining success solely based off recidivism rates, this thesis will explore the high suicide rates amongst this population, arguing for a more humanistic approach to treatment once released from prison. Potential alternatives to the United States harsh legislative actions will be examined cross culturally between Canada and various European countries.

A general definition and consensus of sexual assault or what actions define a sexual offender must be decided on before furthering discussion. Differing fields acquire different definitions, however for the purpose of this thesis and the research read, I will

use Colorado's definition. In Colorado sexual assault encompasses rape and various other sexual acts (The Blue Bench, 2017). Any tactic with the intention of sexual contact using physical force, threats, manipulation, pressure, all fall under pretenses of sexual assault. Colorado's definition of sexual assault encompasses many offenses from voyeurism, froteruism, to rape, meaning penetration of any kind, oral, vaginal, and anal without consent (Luxen, 2017). In Colorado a consenting individual (for survivors of sexual assault) is defined as willingly cooperating in the act and the parties consenting must be "equally free to act", meaning that incapacitation of any sort of drugs, alcohol, or intellectual or developmental disability (depending on the severity), that causes the person to not fully comprehend the intention of the act, renders consent ungiven (The Blue Bench, 2017). Thus any party who defies any of these terms cannot be deemed as a consenting party in the sexual act, thus a sexual assault has occurred by the other party/parties who initiated the sexual interaction.

Sexual crimes, and the nature of this criminal behavior, remain rather complex. Twenty-five percent of women in the United States experience an attempted or completed assault and one in seventeen men in their lifetime (Centers for Disease Control and Prevention, n.d.). Of these crimes only an average of 32% are reported and only three percent of the perpetrators will actually be found guilty and sentenced under the law (U.S. Department of Justice & National Institute of Justice, n.d.). Contrary to the many myths that float around about sex offenses, often times strangers are not the perpetrators, making this issue more complex, with around two thirds of sexual assaults occur between perpetrators known to the survivor (U.S. Department of Justice).

Our justice system fails both parties, victims and offenders. Just the term victim imposes unwanted attention on the human being who survived the sexual crime committed. They are now, under our justice system, defined by an action that occurred and not defined as a human being. Society views them now as this victim as well. Once in court, victims will then face a harrowing process of re-victimization where they will be questioned about the occurrence, reliving the events that took place. Often society is wary of one's claims and questions of doubt are brought up, however, 90%-98% of sexual assault reports are true (The Blue Bench, 2017). Victims face an excruciating time in the justice process, as well as healing process. More needs to be done by society in how sexual assault and the survivors are accepted and believed, however, this thesis looks at the other side of the bench, where we fail men who commit such acts. What circumstances lead up to their path of criminal, sexual, and sometimes violent activity? How can we better care for these human beings? More importantly how can this care and treatment provide hope and better outcomes, so sexual crimes fall, leaving fewer victims, lower recidivism rates for perpetrators, and fewer suicide attempts among this population?

SUBHEADING

Analyzing the basis for sexual crime and the root cause of this severe issue remains incredibly complex. A typical profile of a sexual offender cannot be determined. Research studies aim at understanding this issue, however studies cannot take into account factors that alter sexual arousal and behavior such as impulsivity, mood, general behavior, emotional states, cognitive distortions, and situational environmental factors

(Blaauw, Arensman, Kraaj, Winkel, & Bout, 2002). Academic researchers attempt to understand this issue through multiple standpoints: sociological aspects, biosocial issues, psychological perspectives, feminist agendas, however, I assert that from the vast research provided and analyzed, sexual aggression cannot be described by just one or two components, but that many components make up the typical offender. Two main factors that are prominently seen in the sex offender population and seem to have the greatest influence are genetics and environment, as much of our formed behavior arises from the interaction of genetics and environment together (Lussier & Cale).

Sexual behavior, aggression, cognitive ability, and general behavior stem from brain sequences and signals that can be affected by the delicate and complex system of neural circuitry and regulation. Investigating sexual offenses calls for us to try to comprehend the complex behaviors and cognitive processes that each individual's brain is working under. These neural networks form and prune themselves based off of one's genetic sequence and environment, resulting in differences in behavior and overall mental stability. Behavior and neural activity prove rather complex, but some basics can be known of the interaction between the two. Our brains perceive the world around us, provide us with consciousness, and neural circuits provide us with our behaviors and reactions to these stimuli., the bases of our biological factors forms from the gene pool and environment. This relationship cannot be completely causal, as gene expression seems to affect behavior, while behavior can change gene expression, but can be causal in that behavior doesn't change the specific nucleotide sequence (Knopik, DeFries, Niederhiser, & Plomin, 2012).

For a reviled population why should their genetic and environmental influences matter? Why should we as a society care about their success? Evidence supports the notion that negative affective states precede sexual ideation (Lussier & Cale). Courts overlook the mitigating factors that are at work in sexual offenders' genetics, environment, and the correlation of the two. For true justice we must take into account these factors if the true goal is to repair the harms done to the victim, society, and offender. Mitigating factors, such as genetic and environmental influences on behavior, are currently overlooked in the court room when sentencing. I argue we must change this fact in order to not only provide justice for the perpetrator, but also for sexual assault survivors everywhere.

The United States Justice system must prove two factors with significant intent for a person to be convicted of a criminal charge: actus reus and mens rea the guilty act and the guilty mind. Finding intent and proving the act as guilty often comes rather easily with surveillance, witnesses, DNA testing, and all the resources at the court's hands that help prove a specific person was there and committed the criminal act. Proving a guilty mind becomes a rather daunting and complex task. How can other human beings look into someone's mind and prove intent of an action? How can they prove intent of an action in a specific environment that might alter an individual's cognitive behavior? Our brains and resulting behavior contain complex neural circuitries that rely on a balance of chemicals that often contain a genetic backbone. Can our justice system truly determine mens rea? In order to understand behavior we must look at genetics and the environments we were raised in. Could genetic predisposition and psychiatric disorders potentially

count as mitigating factors? We need to care for the mind. With the high rates of psychiatric and cognitive disorders seen behind the United States prison walls and new research depicting a genetic portion of criminality, I argue, that these should count as mitigating factors, at least in the type of treatment and incarceration these individuals receive.

Chapter 2: Genetics

If someone's liver doesn't work, we blame it on the genes; if someone's brain doesn't work properly, we blame the school. It's actually more humane to think of the condition as genetic. For instance, you don't want to say that someone is born unpleasant, but sometimes that might be true.

-James Watson

Researchers in Sweden conducted a triparental study where they observed children who were reared in a home with their biological mother and a step-father, while the biological father remained unattached, not influencing the child's environment. Results showed that the strongest predictor of criminal behavior resulted from the mother, then the biological father, and last the step-father, finding that genetics play a role in criminal behavior as well environmental factors, with genetics seeming to have a stronger influence. They found that out of three variables tested (criminal behavior, alcohol use, and drug use) criminal behavior and alcohol use seemed strongly correlated with genetics, 40% in this study, and non-shared environmental factors accounted for 58% (Kendler, Ohlsson, Sundquist, & Sundquist, 2015, Langstrom, Babchishin, Fazel, Lichtenstein, & Frisell, 2015). As a whole, crime rates from multiple studies depict that if one parent was convicted of a crime, then the odds of their children being convicted of a crime increase. Researchers attribute this to not only environmental factors, but genetic factors as well.

Mednick et al., conducted a study with 14,427 adoptees, biological families, and their adoptive families. The results found that the biological parent's status of criminality increased the adoptees chances of being convicted of criminal activity (Beaver, 2011). Pulling from vast sums of research, it generally shows a basis of genetics and criminality, with the heritability rate being around .5 (Vaske, Boisvert, & Wright, 2012). The other portion comes from individuals' environments. Each individuals unique characteristics can be attributed to genetics and environmental influences and typically set in early on in our life (Bond, 2001). Developmental stages at which certain environments interact with

specific gene mutations or polymorphisms, matters in terms of behavior seen in later years, with the environment being more impressionable on younger persons (Vaske, Wright, Boisvert, & Beaver, 2011). Heritability for adolescents in regards to criminal behavior after being a victim of violence themselves ranged from 29% to 40%, a large estimate. Adulthood heritability coefficients fell to 9% to 18%, suggesting that adolescents are more susceptible to detrimental environmental factors on genetics over adults. Age also matters in context of when the onset of deviance occurs as well as these genetic changes (Bond, 2001). Specifically dealing with sexual crimes, sexual offending alone has been seen to contain a genetic basis. A Swedish study found that one's risk of sexual offending increased 4-5 fold when a father or brother also committed a sexual crime, versus those whose family members did not.

Genetic theory is highly complex, however, and one gene cannot necessarily be pinpointed as a "criminal" gene, but research supports the notion that genetics affect behavior, specifically deviant behavior in this case (biosocial perspective). Our genes code for proteins that regulate our neurotransmitters, therefore our brain circuitry and behavior (Antypa, Serretti, & Rujescu, 2013). Studies allow researchers to understand that both genetic and environmental issues act on behavior, the troubling part comes down to narrowing in on specific mechanisms of these two at play and on which specific alleles do such polymorphisms occur.

One hypothesis for the relation between genetics and criminal behavior stems from an inconsistency in neurotransmitter regulation. Synthesis of neurotransmitters happens in specific cells, neurons that are pruned and wired from a genetic foundation

and altered during development, highly dependent on the environment. As electrical impulses occur vesicles with neurotransmitters prepare for release from the synaptic terminal, where once released they bind to the post synapse, where the neurotransmitters then signal the neuron to fire. Too much or too little of a neurotransmitter causes the human brain to downregulate or upregulate. For instance downregulation in dopamine leads to Parkinson's, while upregulation is associated with schizophrenia. It is a delicate balance that holds the potential to tip over, and studies show that a lot attributes to environmental effects on genetic regulation (Plomin, DeFries, Knopik, & Neiderhiser, 2013). One prominently known gene affecting neurotransmitter function is gene MAOA, monoamine oxidase-a regulator.

Monoamine oxidase – A (MAO-A), a degradation enzyme associated with all three monoamine transmitters (serotonin, dopamine, and norepinephrine) impacts behavior and is allele specific (Hunter, 2010). Basic functions of serotonin range from sexual behavior, mood stabilization, social behavior, to inhibition of the brain pathways, with some saying it acts as the “Biological brakes on impulsive and thoughtless behavior” (Raine, 2013). Dopamine acts as the reward and pleasure chemical, along with emotional components. Norepinephrine, the epinephrine precursor, acts as our fight or flight response mechanism as well as reward. MAO-A and low level effects of this enzyme pertain to a wide array of behavior, but all can be related to disgruntled and unregulated behavior and thoughts (Raine, 2013). Aggression, violent behavior, and certain cognitive impairments all fall under observed behaviors associated with low levels of MAO-A (McDermott, Tingley, Cowden, Frazzetto, & Johnson, 2009).

MAO-A gene can be found on the X chromosome. Females end up with two X chromosomes, while males have an X and a Y chromosome, meaning that any discrepancies in the MAO-A gene cannot be accounted for in males because the lack of another X chromosome to override the dysfunctioning allele (McDermott et al., 2009). Replicated studies and further research support this notion, low activity of the MAO-A gene in males' results in negative effects, both neurological and psychological. Findings show that females don't have as "exaggerated" consequences, if they express any mutations or weakness's on the X because they receive two X's (Pinsonneault, Papp, & Sadee, 2006). Meyer-Lindenberg and colleagues (2006) looked at women and men who expressed the low activity allele of MAO-A; he results depict further evidence that MAO-A polymorphisms occur differently in men versus women. Inhibition circuitry was less active in men than in women with this phenotype, suggesting that women compensate for their polymorphism. Inhibitory control in the cingulate cortex and less activity in the orbitofrontal cortex, meaning less regulation over emotions, is the most significant finding linked to low activity of MAO-A (Meyer-Lindenberg, 2006). Consequences of this poor self-regulation and connectivity show increased risk for antisocial behavior as well as increased chances of victimizing, sexual or non-sexual (Vaske, Boisvert, & Wright, 2012). Females tend to display higher thresholds for genetic risks of disorders, while males seem to show low threshold, meaning that even small changes in genetics can manifest in criminal-like behavior (Beaver, 2011).

MAO-A polymorphisms show atypical behavioral responses. Studies show that males with a genetic mutation (low activity specifically) of MAO-A test positively for

increased testosterone levels and lower levels of MHPG (norepinephrine metabolite), MHPG specifically resulting in less metabolism of norepinephrine, while all males show increased aggressive behavior. Researchers hypothesize that due to male's higher levels of testosterone this suppresses certain genetic factors, specifically when talking about low activity in the MAO-A allele, giving them a "double whammy" for aggressive behavior. Researchers believe that more than just a polymorphism of MAO-A must occur for aggressive behavior to manifest. Caspi et al (2002) studied certain effects that seem important and found that childhood maltreatment along with the polymorphism may trigger violent behavior (Hunter, 2010).

Brain structures involved with emotional regulation and behavior, specifically the limbic system (hippocampus, amygdala, anterior thalamic nuclei, and limbic cortex) tend to be smaller in those with a MAO-A polymorphism, depicted in studies using structural MRI's (Hunter, 2010). In sum, the research suggests that the low activity allele is associated with some negative neuropsychological consequences, and that these consequences may be exaggerated among males because males are not afforded some of the biological protective factors (i.e., inactivation, "backup" gene/allele, less testosterone) that weaken the effects of the X-linked MAO-A polymorphism.

A Dutch family in the 90's support the MAO-A hypothesis. Fourteen males out of one family exhibited abnormal behavior ranging from aggression and impulsivity to rape and exhibitionism, as well as all exhibiting an intellectual disability (OMIM, n.d.). Brunner and other scientists, upon investigation into this familial behavior, found that this disorder is a recessive X-linked trait, specifically allele Xp 11.2, the gene that regulates

MAO-A levels, leading to a deficiency of MAO-A, thus an increase in the monoamines (Palmer, et al., 2016 & Hunter, 2010). While rare, Brunner's syndrome, perhaps can be applied to other behaviors. Other males in recent years who express this phenotype exhibit similar characteristics as the original Dutch family, with behaviors including mild intellectual disabilities, aggressive outbursts (violent behavior being one), specifically stress induced, difficulties with understanding female friendships, deviant sexual behavior, and hyper sexuality (Palmer, et al., 2016 & Hunter, 2010). Not only is Brunner's syndrome associated with genetics, but adolescent stress and abuse seem to correlate with this disorder (Palmer, et al., 2016, OMIM, n.d.). Perhaps there are differing intensities of this disorder and diagnosis of this disorder are off as these specific behaviors can be categorized as deviant and problematic and overlooked easily.

MAO-A is vastly researched, however, Meyer-Lindenberg describes that multiple genetic factors are at play in these behaviors seen, monoamine oxidase just happens to have a located allele identified (Meyer-Lindenberg, 2006). Other genetic factors that tend to lead persons to exhibit violent and antisocial behaviors are known, just not specifically identified (Hunter, 2010). Another known and researched genetically based contributor to violent behavior and antisocial behaviors is serotonin and the mechanisms in that neurotransmitter system.

Serotonin levels are environmentally, as well as biologically determined, with certain environments along with specific genetic characteristics, leading to the highest propensity to see an increase or decrease in levels. This can be seen in levels of 5-HIAA, the serotonin transporter gene, a serotonin metabolic enzyme in both the brain and the

body, which is located on chromosome 17, with a known polymorphism 5-HTTLPR (Antypa, Serretti, & Rujescu, 2013). Researchers find that 5-HIAA concentrations taken from cerebrospinal fluid have both genetic and environmental implications in the levels observed (Higley et al., 1996; Higley and Linnoila, 1997). A negative outcome of 5-HIAA levels is associated with childhood trauma and childhood abuse and deregulation of the serotonin receptors.

Lower levels of 5-HIAA are associated with infants who have been separated from their mothers permanently over their mother raised companions, impulsive-aggressive behavior was also higher in these motherless rhesus macaque monkeys (Higley et al., 1996; Higley & Linnoila, 1997). In human children cerebrospinal fluid 5-HIAA levels correlate to exposure of violence as a child, specifically in regards to trauma. The transporter gene of serotonin works on stabilizing stress sensitivity (Moberg et al., 2011). Stress levels affect the serotonergic system directly, which acts as an inhibitory system. Hiccups in the system lead to an array of problems, one of these being increased impulsivity and aggression.

Genetics and one's environment can show different phenotypic traits, depending on the genes and the type of environment that individual is in, increasing chances of offending. Genetics and environment can also affect psychiatric disorder propensities. Psychiatric disorders and cognitive impairments, the two most highly correlated confounding variables in male sexual offenders (Fazel, Grann, Kling, & Hawton, 2010), can really be pinpointed on the monoamine neurotransmitters, with genetic polymorphisms of these seeming to contribute to impulsive behavior and risk taking

(Bartol & Bartol, 2015; Vaske, Wright, Boisvert, & Beaver, 2011). Research also shows significant GABA effects in criminal behavior. Genetic theory already is a highly complex issue, as well as neurotransmitter functioning in regards to mental illness. Research however backs up the notion that these transmitters, along with enzymes that help in function are related to such diseases, which are found in many cases concerning sexual offenders (Raine, 2013, Moberg et al., 2011). Genetic factors act on phenotypes expressed in psychiatric disorders and certain environments heighten the phenotype expressed, however just because someone exhibits a predisposition does not mean that they will inherently partake in criminal.

Psychiatric disorders exceed rates in the prison population than in the general population. General trends find that about one out of five adults in the general population experience a mental illness or 18.5%, specifically. Rates of mental health disorders in prison environments range from 45-64% depending on federal prisons to jails (American Psychological Association, 2014, National Alliance of Mental Illness, n.d.). Rates of increased psychiatric disorders in incarcerated environments as well as the general rate of incarceration rates rose after deinstitutionalization, closure of mental hospitals, in the 1960's (American Psychological Association, 2014). Repercussions of deinstitutionalization and the lack of resources or programs for mentally ill individuals manifests in high incarceration rates, with prisons now being the "de facto state hospitals" (Daigle et al., 2007). Non-sex offenders exhibit high rates of psychotic spectrum disorders, while sex offenders express high proportions of impulse control disorders, cognitive impairments, and Cluster B personality disorders over the prison

demographic as a whole (Stinson & Gonsalves, 2014). As this thesis explores genetic propensities, environmental influences, and high suicide rates in sexual offenders, the underlying mechanisms of impulse control, cognitive impairments, and Cluster B personality disorders will be the main focus.

Correctional facilities report that mental the illness rate differs between criminal culpability, with data taken from 1998 in the national correctional survey finding that men with persistent serious mental illness have a higher rate of being convicted of a sexual crime compared to individuals without a mental illness (Harris, Fisher, Veysey, Ragusa, & Lurigio, 2010). Aggravated sexual assault specifically shows linkage between psychiatric disorders and rates of incarceration. In the general population, rates of aggressive sexual crimes are relatively low, however when studies control for clinical or psychiatric participants, rates of aggravated sexual assault increases (Sarkar, 2013). Overall only a minority of sexual offenders depict a serious mental illness (defined as schizophrenia, major depressive disorder, and bi-polar) however therapeutic treatments work and thus researchers believe other forms of mental illness must be prevalent in this population, showing that though the disorder may not be “serious” there is some mental component to the behavior being exhibited (Hazelden Publishing, n.d. & Harris, Fisher, Veysey, Ragusa, & Lurigio, 2010). Stinson and Gonsalves, 2014 found in their research that sexual offenders had significantly high diagnoses of impulse control disorders, cluster B personality disorders, and cognitive disorders such as cognitive impairments and pervasive developmental disorders . Sex offenders exhibit low social skills and often

times cannot maintain positive intimate relationships, while rapists, specifically, exhibit varying antisocial behavioral traits (Bartol & Bartol, 2015).

Deviant behavior, including violating social expectations, does not always manifest itself in criminal activity, however often times in criminal behavior this deviant behavior threatens and harms others (Robbins, 2015). Violent behavior manifests itself highly in the general population in those with co-occurring conditions like substance abuse, psychopathy, and personality disorders, which in turn are the greatest predictors for violent behavior in those with serious mental illness (Harris, Fisher, Veysey, Ragusa, & Lurigio, 2010). Personality disorders and behavioral disorders are high among sexual offenders and compared to the rest of the population, physical and sexual abuse during childhood was reported more, as well (McCuish, Lussier, & Corrado, 2015). More research shows that any form of maltreatment, including sexual, physical, or emotional abuse or neglect, tends to be higher in individuals diagnosed with personality disorders, specifically antisocial and borderline personality disorder (Battle et al., 2004; Bierer et al., 2003; Helgeland & Torgersen, 2004; Johnson et al., 2001; Lobbestael, Arntz, & Bernstein, 2010; Zanarini et al., 1997; Afifi et al., 2011; Igarashi et al., 2010; Tyrka, Wyche, Kelly, Price, & Carpenter, 2009). Severely abused children tend to depict higher rates of violent behavior and antisocial tendencies, along with low levels of MAOA (Raine, 2013). It appears that the most critical period for antisocial personality disorder and when environment seems crucial and needs to be nurturing, are the early formative years, along with a genetic predisposition (Pement, 2012). As a whole, inmate populations show an exceedingly disproportionate amount of family history of alcohol

abuse, divorce, criminality, and physical, emotional, and sexual abuse (Blaauw, Arensman, Kraaj, Winkel, & Bout, 2002).

Cluster B personality disorders symptoms manifest in overly dramatic and unpredictable behavior (Mayo Clinic). Specific disorders categorized as Cluster B are borderline personality, antisocial personality, histrionic, and narcissistic personality disorder. Antisocial personality disorder seems the most prevalent among the personality disorders in sexual offenders. Rapists score highest in the antisocial personality disorder context (Ernoehazy & Shlamovitz, 2015). Antisocial personality disorder is generally characterized as a disregard for other people. Baron-Cohen (2011) describes antisocial personality disorder as having “have no awareness of how they come across to others, how to interact with others, or how to anticipate their feelings or reactions. Their empathy mechanism functions at level 0” (Campbell, 2012). Specific symptoms include risky behavior, impulsivity, aggression, deceitfulness, lack of restraint, and oftentimes substance abuse (Mayo Clinic, n.d.).

Antisocial personality disorder, again like other psychiatric disorders, is rather complex and researchers recognize that under certain environments and contexts antisocial disorder manifests itself in varying ways, ranging from social behavior to sexual (McCuish, Lussier, & Corrado, 2015). Multiple genetic factors must be taken into account as well as the environment in the manifestation of antisocial personality disorder according to the polygenic multiple threshold model used to understand this disorder (Beaver, 2011). In a study that looked at chances of being arrested based off of previous

parent arrests, the results found that individuals predisposed to antisocial disorder and whose parents were arrested are significantly more likely to be arrested multiple times, compared to those who just had parents arrested, but were not likely to develop antisocial tendencies (Beaver, 2011). In juvenile offenders antisocial behaviors are seen more than in non-delinquent peers (Wanklyn, Ward, Comrier, Day, & Newman, 2010). Children raised in an abusive household test for lower levels of MAOA and increased antisocial personality disorder. Adults diagnosed with a Cluster B disorder were exposed to higher amounts of violence during their childhood, compared to controls who had not been diagnosed with a personality disorder (Moberg, et al., 2011). Antisocial personality disorder increases at least nine times, research shows, when a MAO-A deficiency and childhood abuse are mixed (Morse, 2011). Scientist found that maltreated children who expressed the normal MAOA allele were less predisposed to develop antisocial tendencies (Moberg et al., 2011).

As a whole, crime rates from multiple studies depict that if one parent was convicted of a crime, then the odds of their children being convicted of a crime increase. Researchers attribute this to not only environmental factors, but genetic factors as well. Mednick et al., conducted a study with 14,427 adoptees, biological families, and their adoptive families. The results found that the biological parent's status of criminality increased the adoptees chances of being convicted of criminal activity (Beaver, 2011). One study found that differences in genetics accounted for about 50%, while another found genetics to explain 40% of observations, concluding that genetic phenotypes play a critical role in deviant behavior (Beaver, 2011; Langstrom et al., 2015). The other portion

comes from individual's environments. One may carry a specific genotype, but expression won't occur unless under certain circumstances, while on the other hand, being in certain environments may lead to inactivation of one's genes (Plomin, DeFries, Knopik, & Neiderhiser, 2013).

Rosalind Franklin, Maurice Wilkins, Francis Crick, and James Watson altered biological sciences and humanity after discovering the DNA structural complex. Watson may be a bit outdated with his quote (see chapter title), but the basis remains the same, we can now understand it in different context from our evolving advances in science. He highlights the dichotomy between illnesses of the body versus illnesses in terms of the brain, as well as bringing in a humanistic approach. We may not be born unpleasant, but genetic makeup predisposes us to certain propensities of showing phenotypes for aggressive and deviant behavior, specifically when put into situational circumstances and specific environments. Many biologists, behaviorist, and geneticist like to say, "biology is not destiny", but for sexual offenders and the mix of mental illness, other genetic factors, and stagnate environments, a path more destined for death potentially rests in their hands.

Chapter 3: Suicide

But in the end one needs more courage to live than to kill himself.

-Albert Camus

Global suicides, in the general population, occur at a rate of 16 per 100,000, while United States data from 2002 showed that suicide in prisons and jails was 47 per 100,000, with some research finding that it can be between 58 to 150 per 100,000, either way, exceeding the general population's rate by at least three times (Mumola, 2005; Fazel, Grann, Kling, & Hawton, 2011). Cross culturally these increased rates are consistent with Sweden reporting in one study an increased risk of 18 times higher in incarcerated or released convicts compared to non-criminals (Haglund et al., 2014). This epidemic of suicide amongst incarcerated and released convicted criminals poses such a problem that the International Association for Suicide Prevention created a task force specifically to address suicides in just this demographic (Daigle et al., 2007). Theories as to why this high suicide prevalence amongst prisoners and those released exists range from strictly the idea that these men enter incarceration with preexisting mental health issues, or that the environment they are subjected to once incarcerated increases risk, but the strongest research points to a cocktail of the two interplaying with one another (Haglund, et al., 2014; Daigle, et al., 2007; Fazel, Grann, Kling, & Hawton, 2011). For completed suicide attempts while in custody, psychological autopsy shows previous suicidality, as well as psychiatric comorbidity and traumatic life events as the strongest predicting factors (Fazel, Grann, Kling, & Hawton, 2011). Suicidality, attempts and completions, also show a genetic influence, with Brent et al., (1996) and Brent and Mann (2005) finding from various twin and adoption studies that suicide, in the absence of a psychiatric disorder runs in families. Voracek and Loibl (2007) report the heritability rate to be around 21-50% (Anytpa, Serretti, & Rujescu, 2013).

Risk factors in the general population and ideation of suicide include multiple psychiatric disorders, specifically affective, psychotic, and personality disorders (especially antisocial) (Haglund, et al., 2014). Rates of these disorders among convicted men exceed the general population, with 53.6% being diagnosed with at least one type of psychiatric disorder, and many more men suspected of going undetected (Haglund et al., 2014). Incarceration poses stress and mentally harmful situations for men who already express high risk vulnerability for mental health issues; these two factors, in combination, increase risk of suicide (Blaauw, Arensman, Kraaj, Winkel, & Bout, 2002). Incarceration of these men, specifically sexual offenders, creates a perfect storm of isolation, mixed with emotional and cognitive states that already predispose them to vulnerabilities, especially regarding self-harm and suicide (Daigle, et al., 2007). Psychiatric issues do not determine one's destiny of being a perpetrator or that individual's suicidal ideations, however research shows suicidal desires increase five-fold compared to the sexual offender population without mental health issues (Jeglic, Spada, & Calkins Mercado, 2013). Shockingly of the completed suicides within prison walls, about 97% of the victims did not receive screening for suicidal behavior upon entrance into the facility (Hayes, 2010). Serotonin, as mentioned previously, has implications for many different psychiatric disorders, as well as directly being involved in stress regulation and impulse control, but it also is scene in suicidal behavior, with specific genes being accounted for in higher suicidal ideation and aggression (Moberg, et al., 2011 & Antypa, Serretti, & Rujescu, 2013). Different psychiatric problems foster themselves and show symptoms under specific environments that allow certain behaviors to exacerbate themselves.

Stressful events, whether current or past events, often mitigate suicide ideations and completions (Antypa, Serretti, & Rujescu, 2013). Holmes and Rahe Life Events Stress Scale, calculates 43 life events and rates them on a scale of how stressful they are to one's everyday life. Imprisonment ranks number four, under death of a spouse, divorce, and marital separation (Blaauw, Arensman, Kraaj, Winkel, & Bout, 2002). Using this scale the potentiality of a mental breakdown is then calculated (The American Institute of Stress, n.d.) The psychological theory of the diathesis stress model can be used in understanding these risk factors of suicide (Antypa, Serretti, & Rujescu, 2013). Diathesis refers to genetic and environmental influences, the nature and nurture aspect, while the stress refers to the stressors in life that then leave the individual vulnerable to whatever predisposition disorder they had triggering it (Antypa, Serretti, & Rujescu, 2013 & Alley Dog, n.d.). Different environmental factors of our jail and prison system pose high risk factors for any convicted criminal incarcerated, overcrowding seeming to be a significant risk factor, but the highest correlation between suicide and prison environment stems from single cell placement, often times segregated housing units, more commonly known as solitary confinement (Fazel, Grann, Kling, & Hawton, 2011). Hayes (2010) reports that 60% of prisoners were occupying a single cell at the time of their death, with 38.4% being in isolation and another 29.3% of completed suicides had a history of being placed in segregation (Hayes, 2010). Often we think of segregated housing unit being strictly for dangerous persons or those who have broken a rule in the prison environment, however often times prisoners deemed unsafe in the normal prison environment are placed in solitary confinement, this being called “protective housing” (Zoukis). Sexual offenders

fall low on the totem pole in prison and often receive this type of housing while incarcerated.

Specific types of sexual offending seem to play a role in the ideation of suicide. Men sentenced for high profile sexual offenses such as rape or other non-consensual acts with adults and any offense with children posed increased risk of suicide compared to other sexual offenses (Webb et al., 2012). Hypotheses as to why child perpetrators experience increased risk are due to psychiatric disorders as well as the fact that a high proportion themselves experienced this form of abuse (Glasser et al., 2001). As a whole sex offenders, compared to the non-sex offender convicted population, exhibited increased self-harm behavior, so much so that the researchers could predict self-harm behavior in sex offenders (Stinson & Gonsalves, 2014). Of the completed suicide demographic almost half of the victims committed a personal or violent offense, specifically 43.4% (Hayes, 2010).

Differences come into play regarding the onset of psychiatric instabilities in relation to suicide. Jeglic, Spada, and Mercado (2013) looked at inmates and the different timings of their attempts. Three categories were determined: men who attempted suicide only prior to incarceration, men who only attempted while incarcerated, and men who attempted both prior and during their duration. Differences in cognitive impairments and psychiatric issues were found. Notable findings rest in the data that shows that for the group who attempted suicide only once incarcerated, cognitive impairments were much higher than the other two groups, specifically with the diagnosis being an intellectual disability. Along with neuropsychological aspects and psychiatric impairments, suicide

attempts also correlate with environmental risk factors (Jeglic et al., 2013). Of all the men who attempted suicide they found that a preponderance of them came from histories of abuse, neglect, removed from homes when younger, had family members with records, or came from single parent homes (Jeglic et al., 2013). Childhood abuse and aggression as children showed increased risk of suicide attempt, so not only does childhood abuse have implications in aggressive behaviors and impulsivity, but it also appears to increase suicide ideation in adulthood (Brodsky et al., 2001; Moberg et al., 2011).

Early developmental environments play a role in incarceration rates, mental health disorders, and suicide risk, these variables being comorbid to one another. As a whole, inmate populations show an exceedingly disproportionate amount of family history of alcohol abuse, divorce, criminality, and physical, emotional, and sexual abuse, while 47% of those who committed suicide had a history of substance abuse themselves (Blaauw, Arensman, Kraaj, Winkel, & Bout, 2002 & Hayes, 2010). Jordan et al, reported high suicidality risk within inmates who experienced traumatic life events, while inmates who did not report traumatic events risk factor for suicide fell dramatically. Offenders have recently been found to have at least 6 times higher rates of psychiatric hospitalizations compared to the public at large, specific diagnosis being schizophrenia, bipolar, and depression. One can easily see the correlation between mental health issues and suicidal risk and sexual risks. In sexual offenders, prevalence of psychiatric disorders is high, environmental factors mitigate the issue with developmental environments and the current environments playing a role, and suicide risk is high for these individuals. Distal stressors, environmental factors, set up a fragile biological psychological foundation,

with Roy et al., asserting that this foundation leaves an individual exposed to suicide when a future stressor occurs (Antypa, Serretti, & Rujescu, 2013). These biological and environmental factors highly relate to the previous chapters genetics and environmental influences seen in criminal behavior.

Implications of serotonin in suicidal behavior are strong, with impaired impulse control, aggression, and a direct link of suicide attempts and success being documented (Moberg et al., 2011). Low levels of 5-HTT within the cerebrospinal fluid of suicidal individuals imply that somehow neurotransmission has been thrown out of whack, due to a disruption in all of the serotonin system (Antypa, Serretti, & Rujescu, 2013). 5-HIAA levels are decreased in completed suicide attempts, strengthening the serotonin theory (Moberg, et al., 2011). Moberg et al., (2011) expand on this theory with biological and environmental factors. Low levels of 5-HIAA in cerebrospinal fluid of persons who attempted suicide and were exposed to violence during childhood, expressed more pronounced aggression as adults, while suicide attempts among those with high levels of 5-HIAA would show controlled aggressive behavior (Moberg et al., 2011). Aggression and impulsivity (two behavioral aspects of both antisocial disorder and deficits in MAO-A) both are endophenotypes (shown behavior) seen in suicidality and violent behavior (Moberg et al., 2011; Turecki, 2005).

Remember that impulsivity and aggression are endophenotypes of MAO-A polymorphism, and both behaviors are seen in antisocial personality disorder. The MAO-A gene is once again, consistently implicated in increased aggression and impulsivity under stressful conditions (Antypa, Serretti, & Rujescu, 2013) These two behavioral

factors are also seen in suicidal behavior, and while not all suicides are impulsive, aggression towards oneself is used in attempting or completion of suicide (Antypa, Serretti, & Rujescu, 2013). Antisocial personality disorder correlates with suicide, to the point that the DSM-IV, acknowledged that these individuals are more likely to die by violence, including suicide (Verona, Patrick, & Joiner, 2001). Completed suicides among antisocial were at 5%, while attempts rose to 11%, according to Frances, Fyer, and Clarkin (1986), significantly higher than the general population. This rise in suicide ideation in persons diagnosed with antisocial personality disorder are associated with low constraint and the high emotionality (Kevin et al., 2008). Verona, Patrick, & Joiner (2001) state that another behavioral tendency of an antisocial individual along with impulsivity and aggression, is suicidal behavioral.

Like any other behavioral characteristic, the basis and mechanism of suicide remains a complex issue. In regards to serious behavioral contexts, such as sexual offending and suicide, suicide is a topic many do not want to discuss, and many do not see the vital importance of this issue. Common themes such as mental health issues, cognitive impairments, and risky environmental influences arise, suggesting both genetic and environmental propensities in sexual deviation and criminality. These three also contribute to a person's likelihood to contemplate suicide and carry out those ideations. These confounding variables suggest that a population at high risk for suicide is those incarcerated for sexual deviance, and research shows just that. Knowing this, we must alter our system and the environments for these men to lower the death toll. Liebling reports that in order to truly provide justice for both survivors and offenders, the prison

environment and interactions these men have need to drastically change to improve mental states (Daigle et al., 2007).

Chapter 4: Where do we go from here?

We must learn to regard people less in the light of what they do or omit to do, and more in the light of what they suffer.

–Dietrich Bonhoeffer

Why should the public care about sex offender treatment and outcome? After all, these men committed a horrendous crime that requires punishment. Keenan (2012) sums it up well when they write that the general public has a mind set of “go away but stay, speak but stay silent, hide but be visible” (Joyce-Wojtas & Keenan, 2016). They are pariahs who need to hide, yet the public also has a fascination with them. To appease the public and these attitudes federal and state legislators approve and implement laws for convicted sexual offenders after their time has been served. Public opinions believe these laws reduce sexual assault, however these laws produce “collateral consequences” (Bonnar-Kidd, 2010). Particularly interfering with treatment of sexual offenders, creating detrimental consequences for sexual offenders diagnosed with a mental illness (Harris, Fisher, Veysey, Ragusa, & Lurigio, 2010; Bartol & Bartol, 2015, p. 166)

Penalties and restrictions enacted on these men when trying to reintegrate into the community do more harm than good, with registration and extreme restrictions essentially backfiring on the community, the government, and the convicted individual (Joyce-Wojtas & Keenan, 2016). In fact, McCarten et al (2015), asserts that researchers and professionals identify the need for the public to understand their misconceptions that these policies provide beneficial outcomes, and understand the benefits of sex offender rehabilitation over strict, vigilante tactics (Ho Ing, Petrina, Duke, Vo Llm, & Vogelvang, 2016). Although society strongly supports long sentences for violent and sexual criminals, a link between longer sentences and higher recidivism rates has been found (Group & Przybylski, 2008; Johnstone, 2014; Roberts, 2008).

High recidivism rates often mean that the justice system failed somewhere to ‘correctly’ fix criminal behavior (Przybylski, n.d.). In the overall general population of previous criminal activity, recidivism rates are 76.6% for five years, meaning that within five years of release, over three-quarters end up reoffending and back in prison (National Institute of Justice, 2014). Sexual offenders specifically have different rates. Rates depend on the nature of the sexual offense and male vs female, with males having a higher rate. After three years, recidivism in sexual offenders was around 40%, however offenses generally were not sexual offenses (Przybylski, n.d.). In fact over a five year period sexual recidivism was at 14% (Arkowitz & Lilienfeld, 2008). General views on sexual offenders and recidivism are that they often reoffend with sexual crimes and cannot be helped, however sexual recidivism rates for those who have been “treated” were 10%, while untreated was 17% (Hanson et al, 2002). Lawmakers and scholars now recognize the challenges posed by inmates returning to the community without treatment as they recognize that many of these men lack a proper education, employment opportunities are weak, and other deficits pose as risk factors for return to criminal activity (Group & Przybylski, 2008). Thus some forms of treatment are available. Treatment came in two forms, cognitive behavior therapy and relapse prevention. Though the numbers (10%-treated vs 17%-untreated) don’t seem drastic, the lower rate in treated individuals helps researchers potentially better understand behavior and techniques that help with aggression and deviance. Hence, Edgar, and Newell argue that not only are the victimizers negatively affected by the lack of restoration, but also the survivors in the lack of care and treatment that the victimizers don’t receive (Johnstone, 2014).

Hysteria overtakes the public when a sex offender enters their community, but research shows that not only are sexual recidivism rates low, but that by the public's reaction and exclusion, the community harms themselves in perpetuating criminal behavior, specifically community notification creating “stress, isolation, loss of relationships, fear, shame, embarrassment, and hopelessness” in the released men (Bonnar-Kidd, 2010). Not only are these laws detrimental to the released individuals, but they also interfere in the fight against sexual assault. These laws further public belief that sexual assault occurs between strangers when the majority of assaults, once again, occur between known persons, as well as these laws remaining surface level, so people never look into facts, never getting at the basis of why these men may recidivate (Hannem & Petrunik, 2007). The United States has low compliance with registries, which makes sense, as no one wants the stamp of this pariah on them. In contrast, the United Kingdom and Canadian registries that deny public access show a compliance rate higher than 90% (Hannem & Petrunik, 2007). Edwards and Hensley, found that not only are U.S. registries low in compliance, but also that sex offenders hide, thus making treatment and supervision impossible (Hannem & Petrunik, 2007). Community support seems absolutely crucial in success rates for released sexual offenders (Joyce-Wojtas & Keenan, 2016). Knowing this, how can we properly combat this issue of low compliance, to provide a better environment not only for the public, but the perpetrators? Canada and a vast majority of European countries show progressive legislation in their penal systems, however, first we must take an exact look at what our system values as justice before

moving onto ways we, as a community, can combat the issue of high recidivism and poor support once released.

In aiming to determine success of our justice system, one must understand the aim and goal of imprisonment. Perceptions of prison's accomplishments and goals tend to be rather negative, with people generally viewing them as places for "monsters", people that society doesn't want to deal with or be with, where they can be isolated and their aberrant behavior can be kept at bay (Johnstone, 2015). As Johnstone (1996) argues, perhaps the public needs a shift of mind. What if imprisonment wasn't a punitive action, but rather a place where these individuals could improve behavior and learn to live in society as productive members, without harming their community members? (Johnstone, 2015). The United States Department of Justice's vision statement reads "to enforce the law and *defend the interests of the United States* according to the law; to ensure public safety against threats foreign and domestic; to provide federal leadership in preventing and controlling crime; to seek just punishment for those guilty of unlawful behavior; and to ensure fair and impartial administration of justice for all Americans" (The United States Department of Justice). Certain words and definitions alert me as retributive: enforce, defend the interests of the United States, controlling, and most importantly seek 'just' punishment. Not only do these words produce an air of vengeance, but this statement takes the interest of one party over others, creating a communal divide. We must ask ourselves what the ultimate goal of our justice system is. This mission statement fuels egocentrism, focusing on the individual, in this case the priorities of the United States, and does not take into account the human being who receives punishment.

Legislation and treatment are not only national issues, but they also differ across state lines, creating divisions in the sentencing of sexual offenders. Colorado adapts harsh and unfair treatment of sex offenders compared to all other states, imposing outrageous strict laws on them while in prison and once released. Colorado's mission statement reads, "To protect the citizens of Colorado by holding offenders accountable and engaging them in opportunities to make positive behavioral changes and become law-abiding, productive citizens" (State of Colorado, n.d.). Colorado aims at not only addressing survivors' needs in the case of sexual assault, but also attending to the perpetrators needs and looking at behavioral ways to help them become productive members of the community once again. When we analyze outcomes in Colorado and take into consideration the Lifetime Supervision Act, as mentioned briefly before, Colorado fails at upholding these values.

Legislation regarding these criminals changed drastically in 1998 with the instatement of the Lifetime Supervision Act (sex offender specific law), and we see the consequences of this change in public policy unfolding today. Though the bill didn't mean for all offenders to receive lifetime sentencing, it does just that in most cases, with indeterminate sentences set until 'treatment' is received, however this treatment, even after almost 20 years of the passing of this bill, remains incredibly hard to receive because clinicians are either not qualified to work with this population, or they simply do not want to (Olinger, 2013). Ultimately sex offenders are left in limbo with this bill.

Legislative declaration of reasoning behind the imposition of the 1998 act sounds, actually, rather humane, though logic and reasoning may be off, it states,

The general assembly hereby finds that the majority of persons who commit sex offenses, if incarcerated or supervised without treatment, will continue to present a danger to the public when released from incarceration and supervision. The general assembly also finds that keeping all sex offenders in lifetime incarceration imposes an unacceptably high cost in both state dollars and loss of human potential. The general assembly further finds that some sex offenders respond well to treatment and can function as safe, responsible, and contributing members of society, so long as they receive treatment and supervision. The general assembly therefore declares that a program under which sex offenders may receive treatment and supervision for the rest of their lives, if necessary, is necessary for the safety, health, and welfare of the state. (Black)

Justification of the implementation sounds ethical and provides hope that these men and women will receive proper treatment and care, however somewhere along the way the state of Colorado has failed a population with the implantation of this legislation.

Six years after the implementation of this act, Colorado did not release a single sex offender from prison, because they must receive the treatment before they can be let back out into the public. As of 2013, life sentences inflicted upon sex offenders in Colorado rose to be 41 times higher than what they had been in 1998. Specifically, as of 2008, 457 surpassed parole-eligibility, 461 were in need of treatment, and 18 died while incarcerated. Shockingly of all the sexual offenders sentenced under the new law, 99%

were identified as male. Something needs to change in order to accurately tackle this issue.

Legislative reform begins when society starts viewing sex offenders as human beings rather than unpleasant monsters whose basic human rights are justified in being stripped away. Multiple sources and research show that the United States remains harshest on sex offenders and views among the public are extremely negative, while Europe still has its quarks, however, views generally tend to be less negative with the Netherlands and Belgium showing the highest acceptance (Ho Ing et al., 2016). Ho Ing and colleagues (2016) conducted a study and asked undergraduates questions regarding sexual offenders and treatment, one statistic they found was that 14% of students in Germany said pedophiles would be better off dead, while 28% of U.S. students agreed to this statement.

Throughout this paper I have argued and laid out research that helps us understand that deviant and aggressive sexual behavior has neural, genetic, and environmental mechanisms at play. Colorado's 1998 law tried to address the fact that these factors can be treated with the help of different methods; now we must look at exactly what could and should be changed to help eliminate the issue of sexual assault.

As previously addressed, past and current research tell us that antisocial personality disorder is a large factor in much of the criminal population, sex offenders included. Pement, 2012 writes about the neurobiology of this disorder and states, "With a greater understanding of the conditions, both environmental and biological, which lead to these neural differences, it might be possible to devise an effective method of

treatment” (Pement, 2012). Potential ways to help combat and tackle the issues of recidivism and high suicide rates can be found in service-oriented practices that pay attention to the individual's personal characteristics and deficits that relate to their criminal behavior (Group & Przybylski, 2008).

European nations and Canada tend to have a better understanding and more humane practice in their prison systems. Cross cultural examination can be difficult because of the various cultural aspects, as well as differing laws governing each region compared to the United States. However, the United States can learn from multiple facets of the European justice systems. Colorado was one of three states, along with Georgia and Pennsylvania that participated in an interactive examination across multiple European countries to explore possible legislative reform that could be implemented in our system (Subramanian & Shames, 2013). Environment and treatment differ, and though opinions in terms of sexual offender treatment were less negative across multiple countries, including the United States, incarceration was still preferred and favored in the countries surveyed (Ho Ing, Petrina, Duke, Vo Llm, & Vogelvang, 2016). This goes back to previously mentioned assertions that society focuses on the negative aspects of what prison should accomplish, and opts out of understanding the needs of the perpetrators (Johnstone, 2014).

Colorado professionals examined penal systems in Germany and the Netherlands. A generalized finding amongst both countries found that the German and Dutch systems focus on resocialization and rehabilitation of inmates (Subramanian & Shames, 2013). Both countries cultivate a communal aspect not only within the prison walls, but also

with the outside community as well. Germany's Prison Act aims at fostering successful social life once released, so incarceration is molded around this belief, trying to help successful reintegration. The Netherlands take a similar perspective and try to be as least restrictive as possible, emphasizing cultivation of relationships within the prison walls, but once again mainly building those relationships outside the prison walls (Subramanian & Shames, 2013). Such programs easily run with such a low prison population rate. Germany incarcerates 79 per 100,000 people and the Netherlands only 69 per 100,000, compared to our high rate of 716 per 100,000 (Chammah, 2015). For such progressive penal institutions, prisons and communities must build a strong repertoire and link with one another. Johnstone (2010) notes that for successful "restorative" prisons, the walls must be permeable, community members participating within the prison compounds, and prisoners being present in the outside community.

Germany and the Netherlands recognize the importance of social and communal interactions so much, that in the Netherlands inmates are allowed leave on the weekends to return back home to foster their relationships and connections. Germany takes a more strict approach, but still progressive, by routinely giving leave to the prisoners to build social connections, but to also search for work. Recidivism rates in these countries are low compared to the United States 76%, with Germany only seeing 33% reoffend in the first three years, of which they usually receive a fine, and the Netherlands are experiencing such low crime rate that last year they closed 19 facilities (Weller, 2016 & Subramanian & Shames, 2013). Under German law, persons who are convicted and also show signs of a mental illness are diverted from the penal system and sent to psychiatric

hospitals. The Netherlands houses Forensic Psychiatric Care Institutions under the ministry of Justice. Upon sentencing, victimizers receive a multiple-point sentence, meaning that upon determination of culpability, a scale is used to determine mens rea and actus rea. Individuals then may receive treatment from a Psychiatric Care Institution if the preexisting psychiatric disorder is deemed a mitigating factor in the crime at hand (Subramanian & Shames, 2013).

Along with these progressive techniques and enriching environments, many European countries and Canada are adopting Circles of Support and Accountability, a sexual offender specific program. These circles are made up of the released victimizer and community members who help support in reintegration and also in the offender taking accountability for their actions (Hannem & Petrunik, 2007). I argue that the United States can learn from this program and its efficacy in other countries in how we integrate these men back into our community. Among U.S. college students surveyed, the perceived effect of such program was low; Canada teaches us otherwise, as this program lowered all recidivism by 71% and sexual recidivism by 83% (Johnstone, 2014 & Wilson, Cortoni, & McWhinnie, 2009). One motto the program goes by proclaims, 'No one is disposable', and they embody this by two rules they follow in working with the released offender: 1. the past sexual event(s) is deemed as wrong and irresponsible, but never the offender, and 2. The offender's self is always viewed as sacred. Community members who volunteer with the program maintain a balance between helping the offender take accountability for their previous action, and supporting their humanity and reintegration. Too much support could potentially lead to the community member not

noticing a relapse in behavior, while too much emphasis on accountability relates to deviant behavior (Hannem & Petrunik, 2007).

During the study in which Colorado, Pennsylvania, and Georgia toured German and Dutch prisons, one American explained that “If you treat inmates like humans, they will act like humans” (Subramanina & Shames, 2013). While sexual offenders perpetrate vile acts upon innocent lives, societies treatment of these men escalates the issue and ignores potential treatment options that could not only bring solace to the victimizers, but also to the survivors. Various data support the notion that genetic variables are at play in criminal behavior and that in order to properly combat this issue, interventions and treatment are needed over stagnate incarceration (Bartol & Bartol, 2015, p. 379). Scholars and professionals recognize the increased need and attention this issue needs in accurately addressing and altering legislation in regards to sexual offenders and societies exclusionist perspective (Ho Ing, Petrina, Duke, Vo Llm, & Vogelvang, 2016).

Legislative reform needs to take into account biological and environmental criminology research to accurately address the epidemic currently within our system. Doing so though the public and government sit on a fine line between blurring the lines between ethical and inhumane treatment. Critics of bringing behavioral genetics into the courtroom as mitigating factors state that these powers may be abused and the knowledge not interpreted properly by our jury system (everyday people sitting on the jury) (Berryessa & Cho, 2013). Bringing genetic factors into the court remains highly controversial. Anthony Walsh from the Criminal Justice Department at Boise State University exclaims, “Taking genetic factors into account when sentencing is plain

stupid, unless we are talking about something like Down's syndrome or some other syndrome that drastically reduces intelligence and executive functioning. This is the kind of "genetic determinism" that liberals have worried themselves silly over. They just have to take one or two neuroscience and genetic classes to dispense with their 'my genes/neurons' made me do it. Nothing relieves one of the obligation to behave civilized" (Hunter, 2010). It took me just one neuroscience course to fall into this "silly" liberal belief. Our brains and their circuitry rest on a delicate balance of chemical release and interaction that provide excitatory and inhibitory control. If thrown out of whack, observable and unobservable behavior alters. Through copious amounts more of research are needed in this area, sentencing of sexual offenders needs to drastically change to address survivor needs, the victimizer's needs, and society's needs.

Can the United States court of law prove mens rea? Can we fully determine an individual's culpability in deciding to commit a crime? Instead of taking interest in gossiping about these men and spending energy on searching them on registries, society needs to put that energy into accepting these human beings, and potentially seeing the benefits of healthy reintegration into society. There are better ways to help these individuals and lower the toll of sexual assaults, by allowing them to flourish while incarcerated and once back in the community.

Vast amounts of research show potential ways about how this issue might be approached; however I argue that over all possible ways of reformation (legislative reform and criminal institutional reform) the key part comes from community reform. An interesting study was done in Canada that looked at whether genetics, environment, or

both would be deemed mitigating factors in sentencing (Cheung and Heine). Cheung and Heine found that genetic factors affected perceived punishment, while environment did not, however as the previous research tells us, both genetic and environmental influences need to be accounted for (Cheung and Heine). Environmental and genetic contexts should not only be mitigating factors in sentencing, but should also factor into the environments we subject these men to once sentenced and imprisoned. No matter the length of the sentence, I argue, the stagnate and cold environment will take its toll and harm the individual's mental health and possibility of rehabilitation. We must look at the mitigating factors and view these men as just as deserving, if not even more so, of community rehabilitation and support. As a community we should assess the quality of life we give these men while in prison, but more critically assess the life we allow them to lead upon release.

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