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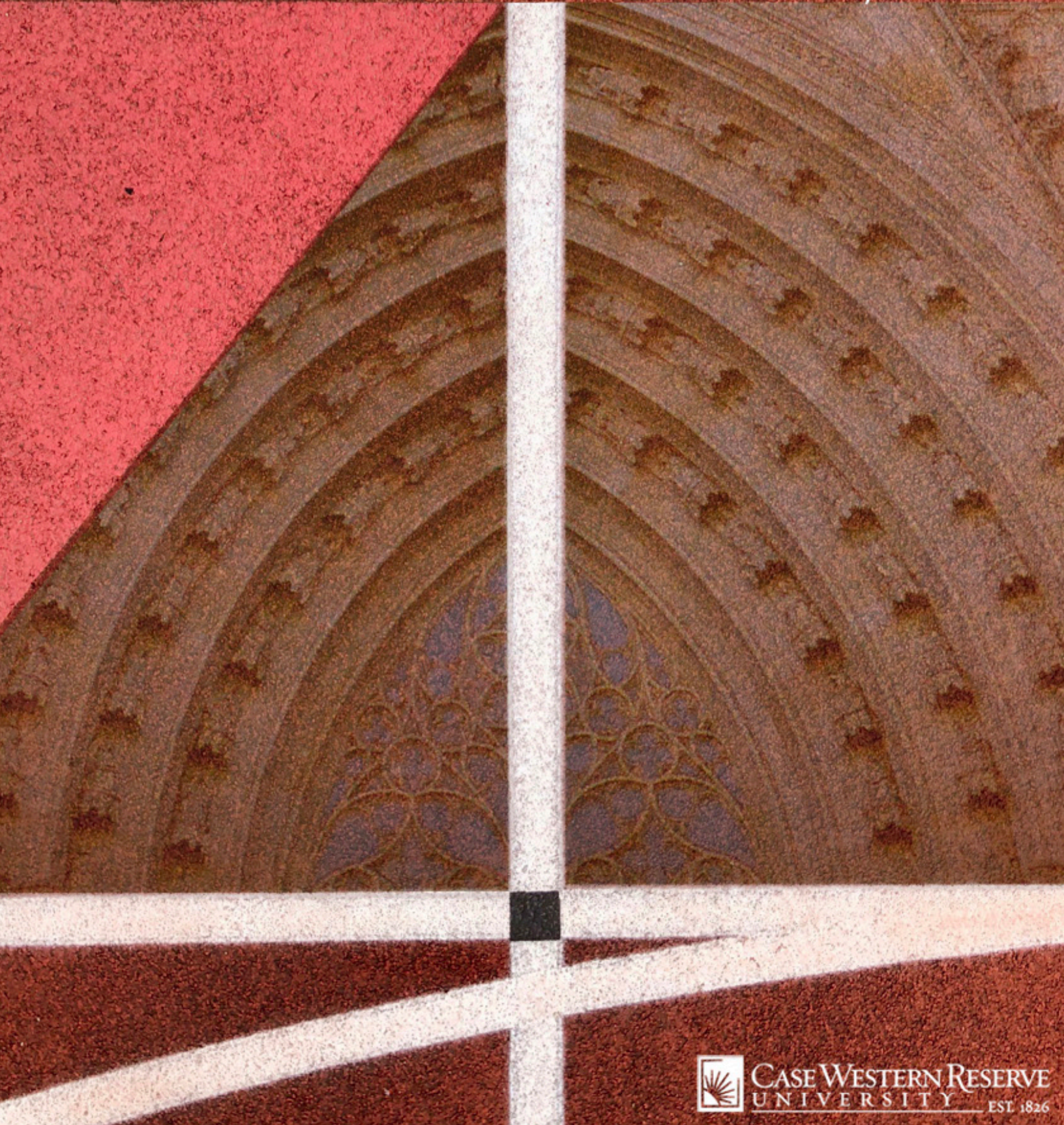
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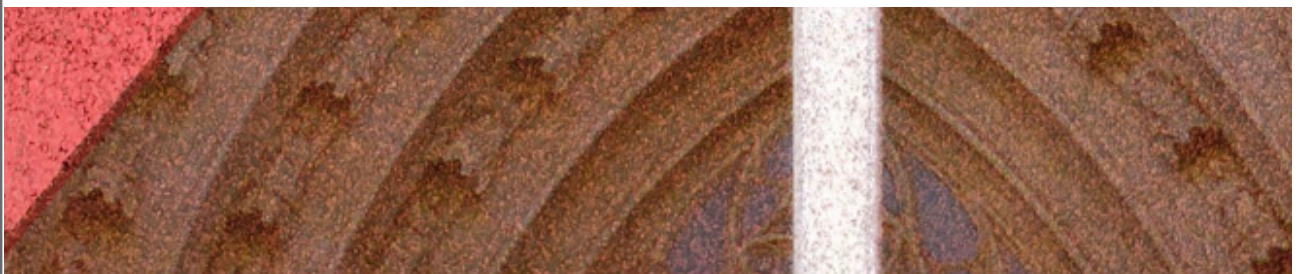
Letter from the Editor

Dear Reader,

Thank you for picking up the first issue of **Discussions**: **The Undergraduate Research Journal of CWRU** in 2019. We are very excited to share with you some of the best undergraduate research from across the nation.

We start off this issue with an interview with Dr. Nancy Roizen, the Director of the Division of Developmental and Behaviors Pediatrics and Psychology at University Hospitals Rainbow Babies & Children's Hospital. We had the opportunity to sit down with her and discuss her journey to medicine and the current progress of her research.

Our first undergraduate article analyzes how medical binaries about mental illness are reinforced through gothic fiction and need to be unpacked to properly understand mental illness. The second article we have published outlines the cyclic causality pertaining to the targeted racial discrimination, criminalization, and over-policing present within impoverished, segregated inner-city neighborhoods, with a focus on the life and health outcomes of justice-involved youth. We are proud to present both of these articles to you with this publication.

If you share **Discussions'** passion for celebrating excellent undergraduate research, consider submitting to the journal. We accept undergraduate research from all disciplines and welcome submissions throughout the year. If you are involved in undergraduate research and want to submit to our journal, please visit our website at www.discussionsjournal.com for additional information. And if you have any further questions, please feel free to reach out to us at discussionsjournal@gmail.com.

I want to thank everyone who has been a part of this journal. Thank you to those who have submitted to our journal and our published authors. A special thank you to our advisor Dr. Sheila Pedigo and the University Media Board executive team for their support through this publication cycle. We are also deeply grateful to the Support of Undergraduate Research and Creative Endeavors (SOURCE) Office at Case Western Reserve University for their ongoing guidance and support in our endeavors. Additionally, I want to thank the entire Editorial Board and our entire General Body for the hours they have put into reviewing our submissions, editing our chosen articles for publishing, and creating this semester's beautiful journal.

Finally, I want to thank you, the reader, for celebrating our journal with us. Here is to another year!

Sincerely,

Saloni Lad, Editor-in-Chief

university media board

SOURCE SUPPORT OF UNDERGRADUATE RESEARCH AND CREATIVE ENDEAVORS

An interview with

Dr. Nancy Roizen

By Akshata Rudrapatna and Michael Gabe

Nancy Roizen, MD, is a Professor in the CWRU School of Medicine Department of Pediatrics and Director of the Division of Developmental and Behavioral Pediatrics and Psychology at University Hospitals Rainbow Babies & Children's Hospital.

This interview has been edited for length and clarity with Dr. Roizen's consent.

Q: What led you to be involved in the fields of medicine and pediatrics?

A: I wanted to do something interesting. There are two fields of developmental behavioral pediatrics. One is neurodevelopmental disabilities and one is developmental behavioral pediatrics. They started out on parallel paths. I started in neurodevelopmental disabilities and then moved in to developmental behavioral pediatrics because I was a resident at Hopkins, and in my second year of residency I was trying to figure out what to do with myself. They said, "Why don't you go to the Kennedy Institute?" because I was interested in neurology and genetics. So, I went over and was interviewed by the doctor who developed the field, and he said two things were wrong with me. First, that I was a woman and second, that I didn't go to an Ivy League school. But he had to take me because I was a resident at Hopkins. So that just gives you an idea of how much strong encouragement one received in that era. However, he became my biggest booster and my biggest supporter over time. So I went and did that.

Presently, I'm involved in looking at workforce issues basically. The way my research has evolved is after doing a year of fellowship at the Kennedy Institute, we moved to San Francisco, and I did another year of fellowship in behavioral pediatrics. Then I worked at UCSF Benioff Children's Hospital, and my boss said, "I want you to start a Down's Syndrome clinic," so I did that. And consequently, that's become sort of the focus of my career: looking at medical problems in Down's Syndrome. The other parts have been by collaborating with people who have big longitudinal NIH grants to look at. So we then moved to the University of Chicago, and there was a Rena McCloud research program on congenital toxoplasmosis, so I worked with her. And then we moved to Syracuse where there was a research project on velocardiofacial syndrome, or 22.q.11.2 Syndrome, and I worked there with them. And then I came here.

> *"My sort of repeated message is the system doesn't take care of the patient population."*

Q: What projects and research are you currently involved in?

A: Presently, I'm doing more workforce issues because small fields in pediatrics (subspecialties) have workforce issues; there aren't enough people going into them. So that would include developmental behavioral pediatrics, it would include rheumatology, it would include neurology, it would include nephrology. My sort of repeated message is the system doesn't take care of the patient population. Which means we have to get some data and publish.

So, in the nineties, I participated with the American Pediatric Center Workforce Survey, which we published a 2002 paper from. There was another survey that was done in 2015 and I was the representative of developmental behavioral pediatrics on this survey, and it actually got a lot of press. It's important to provide data that then compels people to push the NIH. It turns out maternal and child health is pretty supportive of

the things that we do. So, if you have some data, data helps.

Q: Is data everythin?

A: Data's everything. Sometimes it doesn't say what you want it to say, sometimes there are surprises. But...

Q: Is it the most objective way?

A: It is. I'm sort of encouraging you to do a couple things: one is to collaborate with other people when you're thinking about doing research. Research is national, even international. If you join a network, try to work with a bunch of focused people.

The other thing is to be active in some national group that you are interested in. For example, I'm part of the Down's Syndrome medical interest group. When I started, there wasn't a lot of information about Down's Syndrome. When

> *"...if you had access to the autism navigator right away, three months later you were more likely to have an appointment or actually have achieved the educational medical referrals."*

there's a lack of information, you get your patient population.You start collecting data and then answer questions or you listen to the parents' questions, and you figure out, "There's no answer to that question; I can answer that question if I collect enough data about it."

The adults are in the same position. There's no information about adults with Down's Syndrome because they weren't living that long several decades ago. So this group has put itself under Dr. Capone's leadership, from Hopkins, who has systematically gone through and looked at all the data that we have in adults with Down's Syndrome. Now, Kate Meyers is there someplace. She's our fellow I pulled in, and she mainly did most of the work on looking at hearing loss, which is another thing I've been involved with.

In our RAD (Rainbow Autism Diagnostic) clinic, which is for kids who were 48 months of age or less where there's a question of autism, we have an autism navigator, a social worker who helps people after their kid gets diagnosed with autism. Of course she's helpful, but how do you really know, right? You do a study.

And you have to consider the money. We had Medicaid and non-Medicaid patients who were diagnosed with autism. We randomized them to have face-to-face contact with the autism navigator immediately on the diagnosis and then again three months later. So, did it make a difference? Because, they both got a pretty standardized report and recommendation list, okay. Yeah. It did make a difference. Sure we had pretty small numbers, but you use all your resources. My brother-in-law is a statistician. So at Thanksgiving I approached him several years ago , "Okay, Richard, how can I do this with my small numbers?" And he's like, "This is how you do it."

So I thank you Richard. And, um, and what we found was what we expected to find, even with those small numbers. Which was that if you had access to the autism navigator right away, three months later you were more likely to have an appointment or actually have achieved the educational medical referrals. If you didn't, you were less likely to. Okay, so that's not shocking, but now you have data to look at.

We also asked if there was no difference if there was or wasn't Medicaid. We expected that the people with Medicaid would say that it was helpful. And I think the people not on Medicaid were already heading down the road. they already knew they needed to have something and that they had some gotten services. Whereas the people who had Medicaid were sort of like "there's a problem but we have no idea what to do." That was a surprise. There's very...there's not a lot of literature that says that something helps people who have Medicaid.

Q: We notice that you've done some work with cerebral palsy, can you tell us about that?

A: There's the science and then there's the story, right? This cerebral palsy work was done by a

wonderful researcher by the name of Karin Nelson who's a pediatric epidemiologist at NIH. She did groundbreaking work in cerebral palsy, where she looked at the data from a longitudinal study starting in the 60s featuring individuals (same individuals across time) born from pregnancies. She did two things: (1) she did something directly related to magnesium sulfate, and (2) she came to the conclusion that cerebral palsy was not mainly birth trauma, but that these were babies already compromised because of various reasons (e.g., intrauterine stroke), and may (not) have had a difficult delivery. It wasn't a traumatic delivery that was the etiology, it was usually something that was happening in utero. And yes, it could've been a traumatic delivery in 10% or 5% or 8% of the cases, but it wasn't. And you know that, don't you?

> *"There's not a lot of places that can service the whole spectrum of assisted technology needs that you have in kids with cerebral palsy."*

But if I'd asked that of a medical student 10 years ago, they would've been like, "traumatic injury" or "traumatic delivery". So, not only did she come to this conclusion in the 90s, but she also noticed that the mothers who had received magnesium sulfate for their hypertension had preeclampsia. But those babies whose mothers had received magnesium sulfate were less likely to have CP. She thought there should be a controlled study, randomized, and prospective, looking at giving moms magnesium sulfate when they went into premature labor and to see if there was cerebral palsy. And so she connected with UCP (United Cerebral Palsy) and they connected Bob Mittendorf, who was an epidemiologist and an OBGYN at the University of Chicago. In that area, there weren't many academics. The University of Chicago had a nursery with one of the highest percentages of premature pregnancies in the country. That always surprised me, but we lived on the south side of Chicago, and that is a very impoverished area, so it shouldn't have. So anyways, he started a randomized, controlled

treatment with magnesium sulfate, and I did the follow-ups on these kids. The numbers ended up indicating that it was helpful in preventing cerebral palsy. But there are two stories behind it. They were finding, at least, that there were more deaths in the treatment group than in the non-treatment group. But was that because they were giving them too high a dose or was that because it was just a "pick of the draw," or that they were too vulnerable? Mark Seigler would talk to all the parents about this and the OBGYNs were not happy. Magnesium sulfate had been the treatment for preeclampsia, so that created a political kerfuffle. We'll just go "dot, dot, dot" on how that worked out. Dr Mittendorf moved to pediatrics and out of OBGYN and "dot, dot, dot." It was very disillusioning for me; you come with an answer where maybe it's wrong, but maybe it's right.

Q: What challenges or barriers confront cerebral palsy and neurodevelopmental research and treatment in the medical field?

A: There's a lot of challenges. Specifically with cerebral palsy compared to other developmental diseases.The children are so varied that it's so hard to have a double-blind controlled study. You have kids with a mild hemiplegia, you have kids with coreathitroids cerebral palsy, you have kids with quadriplegia, and you have kids with different comorbidities, vision problems, hearing problems, orthopedic problems. So they're not as uniform. When I talk with people who do research in cerebral palsy, that is one of the things that they struggle with.

The treatment is also complex. So you have botox, intrathecal baclofen, to help with spasticity. You have other medications that help with spasticity, but not a lot. You're trying to compensate so that people can function, so you have wheelchairs. When you're treating children, you have a little wheel chair. All these things are expensive. There's not a lot of places that can service the whole spectrum of assisted technology needs that you have in kids with cerebral palsy. So here in town we have our complex care person, Rich Roseburg, who services kids with motor problems so they usually have a trach or a G-tube. Nationally, so if we're talking about systems (kid, treatment,

technology), they're developing now centers of complex care, which is what Rich Roseburg does, the goal of which is to keep these kids out of the hospital and in school. And so people are supportive of developing these, as this small percentage of kids account for a big chunk of admissions because of surgical needs or infection.

The good news is that systems are motivated to support these centers because they're thought to save money. So they need one of these, right? But they are not so easy to do, because not all these kids are the same.

Q: What do you see as the future of cerebral palsy research and the potential for treatment?

A: The future research? With cerebral palsy, you want to do more prevention. Circling back, initially prevention was making it so that there wasn't birth damage. Of course, it's not a bad idea, but it didn't have an impact. There was a lot of focus on monitoring kids during labor, and trying to time the delivery so that if they were getting into any difficulties (e.g. brain damage)... but hasn't born the fruit from what you'd expect, in part because, remember what we said, the damage is already done.

So what can you do? You can go back and go through healthy pregnancies, preventing things like toxoplasmosis, preventing CMV, and doing better with prevention, with delivery, and with neonatal care. Of the kids with cerebral palsy, premature kids are a big chunk of them. A big chunk is the kids who are full-term; that group is more likely to have had traumatic deliveries, so they're trying to treat them with cooling and other things immediately after birth. And then do better with helping people be functional with technology.

Q: Do you have any advice to students who are interested in work or research in this area?

A: I think you want to find a mentor. Good mentoring is a wonderful, rare commodity. See if you can attach yourself to a longitudinal study. There was one student at the University of Chicago who went to Columbia to pursue psychiatry. He was wonderful. When he arrived at Columbia, my perception was that he was able to attach himself to a study that had gone on for several years, and was finishing. I was able to watch his career as his publications were coming out. And the next thing I knew, he was at NIH, at the head of something in psychiatry at the NIMH, and was a national expert in that. Do that kind of thing: attach yourself, collaborate, find something that you're passionate about. When our fellows come in, I encourage them to think about questions that they're passionate about. Especially at the beginning, it's easy to give up on things, so if you have some passion about it. I keep saying this to the fellows, "You have to get it done. You have to get it done." You've already put a huge amount of time and effort into this, so you don't want that to go to waste. And two, as soon as you move out of your fellowship and you go onto your job, you're not going to have the time to do it. If you think you're busy now, just wait until you stop your job. You're going to have to learn new things and get up to speed. Be sure to publish it and collaborate with people. Where can you connect? And the other thing is that there's national databases now. It's sort of an interesting phenomenon. We have all these people thinking, "Can we get your patients to sign on to our database?" It's just like we have database fatigue.
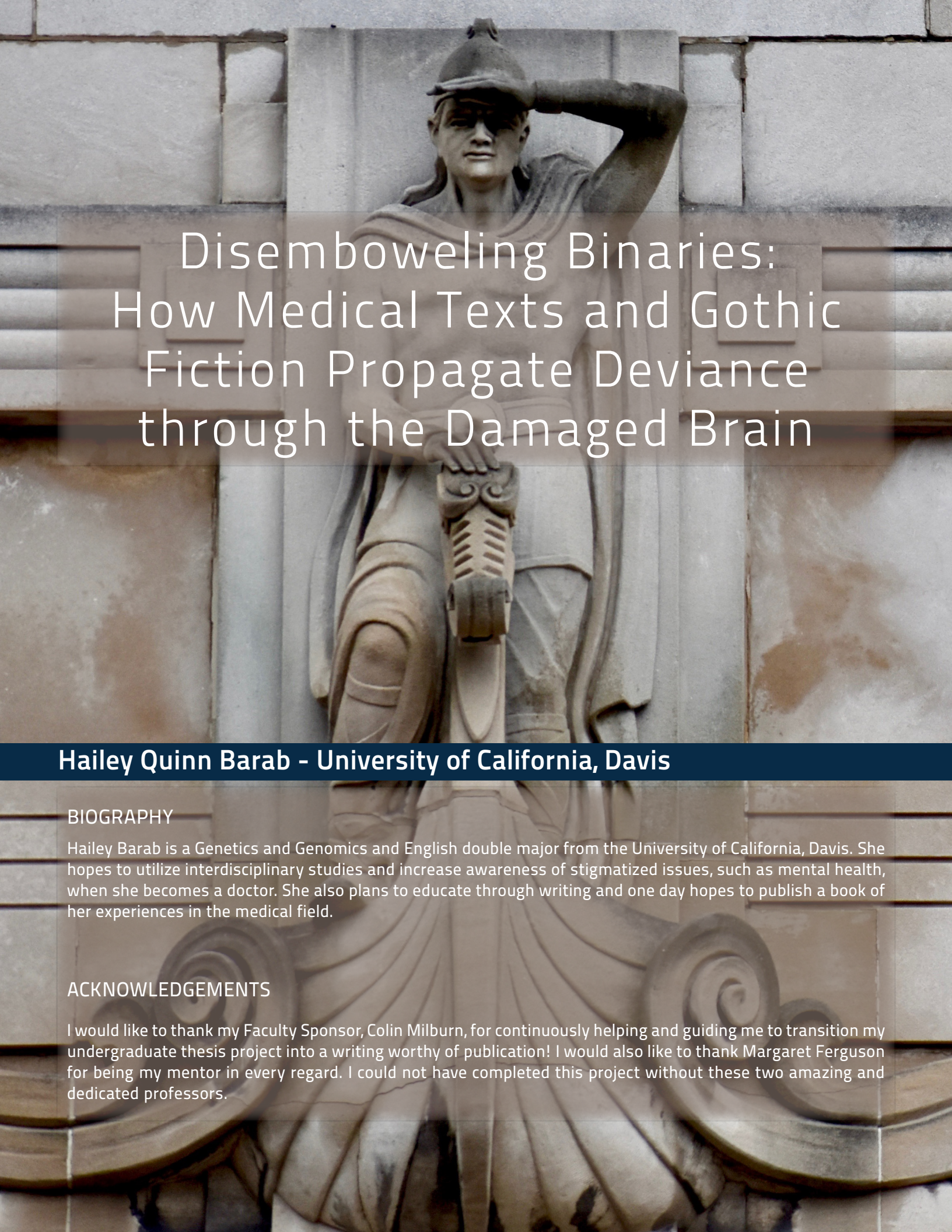
But I'm technology-challenged. But it's not clear to me that it's so easy in general. But it happens. Pay attention to your patients. Listen to them. "I don't know the answer to this question, but I'll look it up." And if there isn't an answer, maybe you can develop the answer.

A Selection of Dr. Roizen's Work

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Boyer, K. M., Holfels, E., Roizen, N., Swisher, C., Mack, D., Remington, J., et al. (2005). Risk factors for Toxoplasma gondii infection in mothers of infants with congenital toxoplasmosis: implications for prenatal management and screening. American Journal of Obstetrics and Gynecology, 192(2), 564-571.

McAuley, J., Boyer, K. M., Patel, D., Mets, M., Swisher, C., Roizen, N., et al. (1994). Early and longitudinal evaluations of treated infants and children and untreated historical patients with congenital toxoplasmosis: the Chicago Collaborative Treatment Trial. Clinical Infectious Diseases, 18(1), 38-72.

Disemboweling Binaries:
How Medical Texts and Gothic Fiction Propagate Deviance through the Damaged Brain

Hailey Quinn Barab - University of California, Davis

BIOGRAPHY

Hailey Barab is a Genetics and Genomics and English double major from the University of California, Davis. She hopes to utilize interdisciplinary studies and increase awareness of stigmatized issues, such as mental health, when she becomes a doctor. She also plans to educate through writing and one day hopes to publish a book of her experiences in the medical field.

ACKNOWLEDGEMENTS

Good and evil, insiders and outsiders, healthy and pathological, sane and insane: binary oppositions sit at the forefront of societal discourse, both characterizing the epistemic structure of Western culture and shaping the production of knowledge in very subtle ways. With the knowledge of well-established binaries, it is apparent that dialogue regarding the binaries has caused disciplines to converge and subvert their boundaries as well. This essay explores the violations in boundaries of health/pathology through the image of the damaged brain in texts surrounding both cerebral localization and Gothic horror fiction. While neuroscience writings and case studies establish binaries and use Gothic qualities to police and discipline the pathological to maintain societal categories, Gothic horror fiction builds upon the long established themes of the healthy versus the pathological in neurological discourse and attempts to disembowel them. A defining feature of the Gothic horror is its supernatural elements; although the plot cannot directly reflect everyday life, a significant cultural norm hides within this medium: the othering of deviance. Typically, the text identifies a monster, which can come in many shapes and forms, that must be vanquished by the text's conclusion. These monstrous deviants are considered a threat to humanity's natural order and therefore must be defeated or eradicated. As evinced through Stoker's *Dracula* and Oates' *Zombie*, the hybrid monster dislodges binaries through the manifestation of both an insider and outsider space.

Behind closed doors and confined walls of boxed categories, normality is seemingly stable and established. It is only when stepping into hallways and corridors between categories that show how messy and complex its definition truly is; how limiting and confining the walls are;that is, when normality falters. Binaries are the categorization between two distinct forms that are often opposite in nature, such as the distinction between good and bad. This paper examines the binary between the healthy and the pathological by exploring the difference between the healthy brain and the damaged brain, and by analyzing how that difference operates within the context of Gothic

horror literature and discourses surrounding cerebral localization. I have chosen to analyze and compare medical case studies of individuals with mental deficits and injured prefrontal cortexes with Gothic horror texts that have explicit references to traumatic brain injuries (TBIs) and prefrontal lobotomy, namely Bram Stoker's *Dracula* and Joyce Carol Oates' *Zombie*. By examining texts of the late nineteenth and twentieth century, I aim to explore how Gothic fiction texts and neurological texts interact through their shared patterns and logic. Cerebral localization texts, such as TBI and psychosurgery case studies, propagate binary thinking via the chasm between the atypical and the typical brain and, as a consequence, create a negative association with the aberrant mind. Cerebral localization case studies inflate the image of the damaged brain as abnormal and different to medicalize and police that difference. This, in essence, is the Gothic narrative. The medical texts, I argue, are using the Gothic narrative in an uncritical way; Gothic horror texts, however, disembowel the binary through hybrid monsters and elicit fear by questioning binary logic and exploiting its limitations.

Binary logic is a deeply ingrained system of organizing boundaries through which micro-categories arise. It is a subliminal process that affects how thoughts are structured, a metanarrative that underrides rational processes. Binaries are a dominant guide to how the world is viewed and categorized. What is "normal" by society's standards is categorizing and separating the expected from the atypical. As evinced through Foucault's work, such separation and categorization has been a common practice to facilitate human understanding of the world (Derrida & Spivak, 1997). This helps to explain why the Gothic horror's mixing of the binaries and hybridity is so unfamiliar and terrifying to society as it highlights a failure in binary categorization. Further, as a culturally perceived, binary logic can be detrimental to the individual, as is evident when examining societal reactions to wavering binaries of health. Binaries are a social construct which means that society has made cultural decisions regarding deviation according to statistical regularities (Canguilhem,

Fawceett, Cohen, & Foucault, 2007). There is a particular kind of difference that is irreconcilable and deemed outsider and that difference is amplified. This binary logic emerges quite frequently in medical texts regarding the pathological, "abnormal" brain. The image of the damaged brain as deviant recurs throughout cerebral localization studies and the Gothic horror genre of fiction. I am using the term "Gothic horror" to signify an overarching genre that includes fictional texts from the late nineteenth century and modern horror fiction novels. I am using the term cerebral localization, also termed functional localization, as a contemporary finding of how certain areas of the brain function independently and for a specific purpose. This paper focuses specifically on the localization of function of the prefrontal cortex's connection with the individual's personality.

Cerebral Localization

Scientists have reinforced the notion of cerebral localization after significant experimental findings from TBI and psychosurgeries over the past century. Cerebral localization maintains that the brain is composed of multiple cerebral centers, each having specialized functions that can act either independently or conjunctively (Carnochan, 1884). After extensive experimental research and analysis, the notion of specialization of function was generally accepted by the end of the nineteenth century. It was not until 1799 that scientists argued the brain to be the central organ of the mind and since then, the study of the brain through neuroscience and psychology has been growing at an incredibly fast pace (Young, 1970, p. 11). One of the main scientific leaders for this movement was Franz Joseph Gall. According to Young, "no one before Gall argued for the dependence of the mind on the brain in such detail, specifically disproving the role of other organs" (Young, 1970, p. 20). Gall was also the first to argue for the brain's multifaceted structure, able to correlate emotions, facilities, and behaviors with various regions of the brain and skull. He called this idea phrenology, which remained popular in England and America until the middle of the century,

but was eventually rejected because it was derived purely from assumptions (Young, 1970, p. 55).

In contrast to Gall, who lacked direct observation, Paul Broca had more substantial evidence to defend the pluralistic function of the brain. In 1861, Broca linked the third convolution of the left-brain hemisphere (now known as Broca's area) to speech and linguistic capability. While Broca had predominantly relied on clinical case studies and autopsies for his work, scientists in the 1870s performed experimental surgeries on live animals to observe more precise brain functions. In the 1870s and 1880s, one of the major findings by Fritszch and Hitzig was that the brain could be electrically stimulated. David Ferrier then used this finding to excite and locate various regions of animal brains, using his results to make detailed cortical maps that helped visualize various functions (Stiles, 2012, p. 2). All of these findings, and many others not mentioned here, supported the fact that discrete sections of the brain regulate specific mental and physical functions.

With the phenomenon of cerebral localization firmly established, late nineteenth- and early twentieth-century scientists formulated experiments and case studies that further supported these findings. TBIcases and psychosurgeries, which gained greater popularity in the 1930s, highly progressed the understanding of cerebral localization and the function of personality in particular. Both the dorsolateral prefrontal cortex and the orbitofrontal cortex regions of the brain affect an individual's personality; injuries to the former "produce apathetic, poorly motivated behavior" while lesions to the latter are "characterized by unstable emotions, disinhibited expression and blunted affect, and lack of concern for other people" (Dimitrov, Phipps, Zahn, & Grafman, 1999, p. 345).

One of the most famous cases of TBIs in which a prefrontal lobe lesion caused changes in social behavior is called "The American Crowbar Case." In 1848, a 25-year-old man named Phineas Gage worked as a railroad foreman. He was described as "energetic, and modest in demeanor despite

being very handsome" (Guidotti, 2012, p. 249). While working the construction of a rail bed, a 3-foot-long 13-pound iron-tamping bar (called a crowbar at the time) penetrated his head and removed his left frontal lobe. His physician, Dr. John Martyn Harlow, attended to the injury and, with the exception of partial face paralysis and the loss of his left eye, Gage survived and maintained full neurological function. However, after further analysis and follow-up appointments, Harlow and others close to Gage noticed dramatic changes in his behavior. Preceding the accident, Gage "was described as reliable, systematic, and hardworking;" after, he "became impulsive, disorganized, and stubborn" (Guidotti, 2012, p. 249). He began to use profanity, disregarded social conventions, and friends and family remarked, "he was no longer Gage" (Harlow, 1869).

Since Gage, other patients with similar injuries have had the same result, which led researchers to believe that "emotion and social conduct regulation" depended on the brain's prefrontal cortex (Dimitrov et al., 1999, p. 345). For instance, in 1968, a patient named MGS (also called the Modern Gage) suffered from the same injury during combat in the army, but instead to his right frontal lobe. His skull was fractured and bone fragments entered his right frontal lobe; yet, his neurological exam showed completely normal results and MGS returned to active duty. However, after his return, there were notable changes in his behavior. Prior to his injury, MGS received over 10 medals and the Purple Heart, but after his injury, he was demoted in ranking due to ineptitude. Post-evaluation results still showed "normal general intelligence, memory and perceptual-motor functioning" (Dimitrov et al., 1999, p. 346). However, according to MGS' family, 'he was not like he used to be;' he was remote, lacked tactfulness, was socially withdrawn, temperamental, and sarcastic. He had "no ability to make or keep friends" and his mother said he met with "the lowest of the low" (Dimitrov et al., 1999, p. 346). Further evaluations in 1998 noted deficits in the area of emotions and social behavior and "he appeared unable to have normal relationships or to follow social norms,both ethical and legal," yet

he lacked awareness of his deficits (Dimitrov et al., 1999, p. 350).

Both patients remained isolated from friends, family, and society. They were considered atypical, others, outsiders, monstrous. For instance, after his recovery, Gage was able to go back to

> *"The societal response to their medical cases transformed these patients into outsiders."*

work but first made "a living for himself, as a circus act, where he appeared holding the iron tamping rod" (Guidotti, 2012, p. 250). Gage utilized his new identity as other, his tamping rod a symbol of his outsider status. Surviving such an intense injury made him very well known, but what made him notorious was his hostile behavior, upon which society focalized throughout his descent into otherness. The image of Gage as a "disheveled" misfit persists today and has turned his medical case into a type of folklore. Likewise, MGS was marked deviant due to gross lewdness and was "put on four years probation" from military service (Dimitrov et al., 1999, p. 346). His abnormal behavior warranted societal observation and inspection, further categorizing him as deviant. Gage and MGS further propagated categories, boundaries, and their deviant statuses through their transgressions. Deviance, or straying from the norm, is common for many patients and they eventually seek treatment to alleviate their abnormalities. However, for Gage and MGS, treatment was not an option due to the lack of knowledge surrounding their condition. The societal response to their medical cases transformed these patients into outsiders; the narrative framework displays different perspectives from family, friends, and coworkers, which reinforces the patients' shift into deviancy. These medical 'monsters,' much like Gothic horror monsters, are the manifestation of the psychological and cultural qualities that society finds unwanted or difficult to accept. Gothic horror pulls on this human tendency to rid the other as the basis for its narrative framework.

Society's response to rid itself of deviants enables manipulation to police these differences. As doctors and scientists take measurements and use empirical data to evaluate, categorize and standardize what is healthy (normal) and unhealthy (abnormal), the binary chasm between the atypical and typical brain is socially constructed and continues to manifest and grow larger, as does the negative stigma with the aberrant. Yet "social construct" implies that there exists an alternative way to think of the distinction between these categories. In *Madness and Civilization*, Foucault states that the concept and treatment of madness has been tumultuous throughout history as its definition has evolved with society's changing perception of it. As a social construct, madness has shifted and transformed because the normal individuals, the economic, cultural, and intellectual individuals, who operate society, create its definition. Therefore, the definition of madness is not secure or fixed but rather depends on the society in which the definition functions. The social construct of the binary between the pathological and the healthy first has to be justified, which is why the abnormal brain serves as a salient outlier when compared to other common differences that exist between average brain. It is important for writers to emphasize this distinction and to reinforce an otherwise tenuous and microscopic difference to justify social action. The identity of madness is insecure and the key is to classify madness and separate it into its own category separate from other deviants, such as criminals. Cerebral localization texts established the definition of an atypical brain, and its associated behaviors, as abnormal and texts later evolved to justify the actions of eradicating these differences.

Madness and deviance were initially managed with confinement, which was a way of dealing with the societal fear of the atypical. Asylums replaced confinement and madmen became moral outcasts and degenerates. Asylums, however, helped to facilitate the patient-doctor interaction and madness grew to become classified as a medical disease in which the insane sought cures and treatments. Figurative confinement still exists today via categorization. Disorders are treated as stigmatized illnesses when they are actually behaviors that diverge from the cultural norm. Society and medicine labels patients as mentally atypical or insane to simultaneously create obedience of societal standards and ignore the potential societal causes of their problems.

Psychosurgery was one of the most aggressive medical forms of forcing obedience. Gage and MGS' ability to maintain a high level of brain function suggested that living without pieces of the brain was feasible, which "indirectly led to psychosurgery, and the abuse of frontal lobotomy that came a century later" (Guidotti, 2012, p. 250). The founder of psychosurgery was Gottlieb Burckhart, who operated on the brains of patients to treat their various emotional and mental disorders, removing pieces of the cerebral cortex. In 1935, Egas Moniz established the term "psychosurgery," also called prefrontal leucotomy, which divided the afferent and efferent signals of the frontal lobe by excising "a core 1 cm in diameter... Four to six such cores in each frontal region were isolated at various depths and in chosen directions" to reduce symptoms of mental deficits (Smith & Gordon, 1974, p. 19). Moniz propagated the success of the surgeries; however, his records were scarce and reportedly, "several patients were returned to asylums and never seen again" (Stanford, p. 411). In 1942, Freeman and Watts modified Moniz's procedure and published the extensively referenced Psychosurgery, which was rendered a great neurological achievement (Smith & Gordon, 1974, p. 19). However, there continued to be adverse effects, including epileptic seizures and death. Freeman separated from Watts to create the transorbital frontal lobotomy in an effort to control violent behavior. Also referred to as leucotomy, this operation reduced cells and circuits to the frontal lobes, causing the patient to lose drive, force, and energy (Greenblatt & Solomon, 1953, p. 412). The procedure used "an instrument resembling an ice pick [that] was inserted into the orbital roof and swept across the prefrontal cortex," resulting in unresponsive and inert patients. Oftentimes, however, physicians who performed this procedure had no prior surgical training. It is also important to note the poor conditions of asy-

lums during this time period. Psychosurgery was posed as a potential solution to the overcrowded and undermanaged mental hospitals to alleviate the burdens of mental illness (Smith & Gordon, 1974, p. 19).

With direct references to Freeman and Watts's procedure, Joyce Carol Oates's *Zombie* reveals the mind of a serial killer, Q__P__, or Quentin P, while simultaneously criticizing surgeons' unethical procedures of psychosurgery:

> Desired results: "flattening of affect to reduce emotion, agitation, compulsive mental cognition and physical behavior in schizophrenics and other mental patients…This page, I razored out of the textbook. Back behind the psych library stacks where nobody could see. I COULD ALMOST SEE MY ZOMBIE MATERIALIZING BEFORE MY EYES….Another book even better, Psychosurgersy (1942) by Dr. Walter Freeman and Dr. James W. Watts of George Washington University—I knew this was a TURNING POINT in my life. How many thousands of transorbital lobotomies these guys performed in the 1940s & 1950s & how easy to perform, the author of Principles of Psychosurgery stated he did as many as thirty sometimes in a single day using only a "humble" ice pick as he called it. Dad & Mom had hoped for me to become a scientist like Dad, or a doctor. But things had not turned out that way. But I knew I could perform a transorbital lobotomy even if it was in secret. All I would need is an ice pick & a specimen. (Oates 40-42).

This passage foreshadows Quentin's future association with the damaged brain. There is a metaphoric relationship between the book and the human subject, as Quentin "razors" the page out of the textbook "back behind the psych library stacks where nobody could see." Quentin performs this mock surgery on the book in private,

reiterating his secretive nature caused by his inability to connect with others or the real world. This privatization enforces his role as other and deviant. Quentin eventually performs these surgeries on his numerous victims in an effort to create his ZOMBIE. The ZOMBIE he envisions has "reduced emotion, agitation, compulsive mental cognition" as stated in the manual for mental patients; yet his ZOMBIE would be his companion and "would obey every command & whim. Saying "Yes, Master" and "No Master."

Ironically, Quentin wants to perform the surgery on victims that he himself would have received at the height of the procedures' popularity. Because Quentin has an abnormal, psychotic mental function, he seeks companionship and wants to transform the normal into the abnormal so that he will no longer be alone as an outsider. This message serves as a warning to the action of othering, which has caused Quentin to seek solace in placing others in his same position. The text further criticizes unethical medical practices by drawing an overt parallel between serial killers and unethical doctors of mental patients when Quentin states that when he picks a victim he "will observe him detached as a scientist calculating what kind of ZOMBIE he might make" (Oates, 1995, p. 77). Just as scientists view their patients in a calculated manner, as a subject rather than human, Quentin acknowledges that he does the same when choosing his victims. It is evident that the text is drawing on the longer history of policing deviancy in a medical setting, distinguishing normal and pathological to comment and critique this particular system of categorization.

The entire text is written in a very desensitized and transparent manner via simple syntax and lack of tropes. The concept of normalcy then is two-fold, calling into question the essence of normality and realism for the individual and for literature. Generally, there is a divide between the standards of scientific and literary writings: scientific writing is straightforward, factual, and concise while literary prose functions to enhance reality through metaphors and complex language. Yet, perhaps there is a change in the method of writing when it

focuses on madness, or when the author seeks to mimican atypical character's perspective. There are certain literary techniques used to transform delirious logic into coherent counter-rhetoric (Felman & Evans, 2003, p. 106). Moreover, this shift in literary technique cannot be analyzed without first calling into question how "normal" is defined in reference to language and style. "The speeches of the madman take on significance and meaning only by their immediate reference to discourse" (Felman & Evans, 2003, p. 104).

Do horror fiction texts create an experience of horror through "ornamental excess" and "rhetorical extravagance" that reflect monstrous mayhem, as Halberstam argues, or are they the opposite: a lack of description that leave a void and eerie tone (Halberstam, 1995, p. 2)? The same is mixed in the above scientific case studies, which form a narrative framework through textual characterization and varying shifts in view point, obviously straying from the standard scientific concision. Through knowledge of the well-established dichotomy between disciplinary studies, it is apparent that violations in boundaries of mental health have caused disciplines to converge and subvert their boundaries as well.

> *"While both sides tell a story, the patient's response builds a stronger pathos"*

Using a tactic of combining both scientific logic and literary pathos, the Second Lobotomy Project of Boston Psychopathic Hospital's "Frontal Lobes and Schizophrenia" was a key medical text, published in 1953, that studied the effects of psychosurgery on patients with mental disorders and schizophrenia. Physicians detailed the case histories of patients treated with psychosurgery and tracked the developments, improvements, and/ or fatalities that resulted. One extensively detailed case history studied a male schizophrenic patient by the name of Joseph G. (J.G.). The format of J.G.'s case history uses two chronological columns—the left column describing the "events in life situation," and the right column describing

the corresponding "patient's response". This dual format displays the differing perspectives of the physician's evaluation of the patient and the patient's direct quotes and experiences. Displaying both third and first person point of view functions narratively. While both sides tell a story, the patient's response builds a stronger pathos because of the direct quotes and insights about his feelings of fear and paranoia. For instance, after his bilateral prefrontal lobotomy operation, the events column states his postoperative course as being "marked by moderately severe meningitis and bilateral drainage from the operative site, which was cleared with penicillin and sulfadiazine" (Greenblatt & Solomon, 1953, p. 333). On the other hand, the response column states that the patient "lacked spontaneity, but was neat, cooperative, polite. He remained passive, with no hostility evident, no fear. He still heard voices but less often and they bothered him less" (Greenblatt & Solomon, 1953, p. 333). The events/left side displays a more removed, medically logical understanding of the event while the right/response side reflects pathos and a more relatable standpoint. One side functions more factually and the other more emotionally; the binary mirrors the typical structure of either science or literature but, by unifying in the case history, the two sides function as a single textual hybrid.

The two sides together tell a unified story regarding J.G.'s mentally atypical state of mind, leading inevitably to the psychosurgical treatment detailed above. The case study chronologically describes his deterioration into insanity. First, prior to his diagnosis of schizophrenia, J.G. is described as being a relatable patient, "the favorite son" to his mother, artistic, and quiet (Greenblatt & Solomon, 1953, p. 327). The onset of his psychosis occurred after his first marriage at age 32. He became angered with his wife and criticized her in public, stating that every time he was near her, "he felt like vomiting" (Greenblatt & Solomon, 1953, p. 329). Researchers detail events in which the patient recalled his bosses threatening him and "he said he was going to buy a knife and kill somebody. He heard voices which kept him from sleeping, thought the neighbors were talking about him"

(Greenblatt & Solomon, 1953, p. 330). By creating a foundation of a good person, a favorite among his parents, the text draws the reader to J.G, making his transformation and future change in behavior even more significant and shocking. The text's description of his altered personality, his violence and deviance from social norms, alters the reader's perception of him from the once relatable character into a deviant. The narrative anecdotal format pulls the reader to not only see the story from the physicians' perspective but also agree with and support the physician's course of action.

> *"His deviance and inevitable alienation from the reader not only seeks to justify medical treatment but also to render its approval to restore normality."*

Additionally, although the text does alternate between first and third person, many of J.G.'s quotations are paraphrased in the researchers' own words and altered to fit a medical analysis. His chronological descent into "otherness" justifies the prefrontal lobotomy and the causation of further damage to his brain. His deviance and inevitable alienation from the reader not only seeks to justify medical treatment but also to render its approval to restore normality.

Researchers questioned the reliability of psychosurgery and its capacity to restore normative brain function as well as to prevent the patient from further deviance. The "breakdown of the patient's control" is what needs to be fixed; it is normal, by society's standards, to maintain control in given situations, and not abiding by such standards gives cause for medicalization. J.G. is described as having "outstanding" adjustments when compared to other patients, although they later negate this statement by associating the surgery with slim improvements (Greenblatt & Solomon, 1953, p. 326). Therefore, the case stands as a justification for displaying that the medicalization of insanity and atypical brain function can be solved and display results, regardless of how

slight they may be. Problems can be fixed by medicine to help individuals squeeze into their proper category: in this case, societal relations and personality are the defects and physicians are given the authority to prescribe normality.

Social ability, however, is a construct that confines the individual to their category. Realistically, the outcome scientists and physicians are trying to obtain might never be attainable for this patient or for the public as it is nearly impossible to define normality. By stepping outside of the physician's persuasive perspective and observing the case from the non-normative stance, the reader should question the concept of what it means to be "normal" in the first place. Additionally, it is important to take note of the ethics behind psychosurgery and the difficulty of obtaining consent from a patient who is neither fully understanding of the severity of their illness nor is cognizant of its medical implications. For this reason, physicians seek to justify their actions. In fact, in the late 1950s, psychosurgery was deemed unethical and operations ceased. Physicians did not justify their actions by explaining how beneficial the particular treatment or surgery would be for the patient. Rather, physicians argued the patient was confounding the normal order, monstrous and deviant, and therefore in need of correction and restoration. This is the basic plot of the Gothic: the recognition of deviance and restoration of order by putting the monster back into a state of normality or to vanquish the monster at the narrative's conclusion. These medical texts, in effect, discover and classify abnormality and deviance, then seek to eradicate it. Thus, these medical texts produce the same cultural narrative as the Gothic horror by policing against deviance.

Gothic Fiction

Dracula does just that, if read from the perspective of the insider, Dr. Seward. However, perspective is a key element in analyzing the normative and non-normative; what registers as sane from an insane perspective registers as a different logic entirely from a sane perspective. *Dracula* is written in a journal-entry format, which switches be-

tween various characters. Dr. Seward is a surgeon, psychiatrist, and administrator of an insane asylum that is central to the plot. His journal entries capture his careful observations of the madman inmate, R.M. Renfield. What fascinates the doctor is Renfield's desire "to absorb as many lives as he can" by feeding flies to spiders, spiders to birds, and hopes to feed the birds to cats, all the while eating the insects and animals in a cumulative process. Seward terms him a "zoöphagous [life-eating] maniac" and tracks his mania in journals (Stoker, 1999, p. 103). Our introduction to Renfield is a depiction of his animality. Historically, this type of imagery was often associated with madness; according to Foucault, madmen were animalistic and lacked humanity. They were unbound by human and societal laws and thus "threatened order." The way to correct this deviance was through discipline and control—this categorization justified confinement (Foucault & Howard, 2006, p. 77). Although society moved away from treating the insane with force and moved towards medicinal treatment, Seward viewing Renfield as animalistic justifies categorizing him as subhuman and the efforts to control him.

Renfield is depicted throughout the novel as an antagonistic, monstrous lunatic who later is revealed as a signal for the coming of Dracula, the main antagonist. Renfield serves as a unique monster because of his ambiguity throughout the novel, as represented through Dr. Seward's perspective and analysis of the psychosis. Seward's portrayal and analysis of Renfield reveals the dialogue between neuroscience and the Gothic genre of the late nineteenth century. There are two explicit scenes that reference and detail vivisection in its relation to mania and TBIs. First, after Seward comes to understand Renfield's apparent lunacy in pursuit of absorbing life for immortality's sake, he reflects upon his scientific understanding of neurology:

> Men sneered at vivisection, and yet look at its results to-day! Why not advance science in its most difficult and vital aspect—the knowledge of the brain? Had I even the secret of one such mind—did I hold the key to

the fancy of even one lunatic—I might advance my own branch of science to a pitch compared with which Burdon-Sanderson's physiology or Ferrier's brain-knowledge would be as nothing. If only there were a sufficient cause! I must not think too much of this, or I may be tempted... (Stoker, 1999, p.103-104)

It is apparent that Seward is in support of vivisection, using Renfield as an experimental means to further scientific knowledge. Seward, however, realizes that "men sneered at vivisection," generally disapproving of the procedure. The use of the word "sneer" connotes judgment; vivisection was viewed as cruel, unethical, and oftentimes frightening as it was an autopsy-like procedure performed on a living being. For this reason, Seward avoids considering it as a mechanism to deter himself from carrying out the procedure, which brings up the question of whether the end justifies the means. Is performing an unnecessary and rather understudied surgery on "one such mind" justifiable in order to advance an entire "branch of science"? Seward reflects an uncaring view of people with abnormal minds; he feels justified because Renfield is a lunatic, simply one mind less worthy of ethical consideration than an individual with a "normal" brain. His sacrifice is justified because it would further the understanding of a typical brain. By observing Renfield in a detached, objective case-study-like manner, Seward brings a sense of realism to the text. He brings credibility and authenticity to the text by referencing real physiologists of the time. Seward is presented as a narrator who presents his patient's thoughts as facts, despite his biased perspective. Renfield is presented more as a medical specimen than a human being.

Renfield is the focus of many brain topics and interestingly meets his demise through a TBI, which is described in a medically realistic manner:

> The real injury was a depressed fracture of the skull, extending right up through the motor area. The Profes-

sor thought a moment and said:— 'We must reduce the pressure and get back to normal conditions, as far as can be; the rapidity of the suffusion shows the terrible nature of his injury. The whole motor area seems affected. The suffusion of the brain will increase quickly, so we must trephine at once or it may be too late... We shall operate just above the ear. (316-317)

It is important that Renfield meets his death through a further damaged brain, as he is constantly associated with the atypical brain and its studies. As a monster, Renfield contributes to the tone of horror associated with studying the damaged brain. In turn, his damaged brain also characterizes him as an even more horrifying character. Therefore, it is only fitting for him to die in such a brutal manner. Furthermore, the events surrounding his death signify the practitioners' lack of empathy for insane individuals. The doctors want to save Renfield to extort information regarding how he received his injuries from him in order to protect themselves from Dracula. For all the attention Seward gave Renfield, he does not regret the loss of his patient even after discovering his associations with Dracula. Renfield's death is presented simply as a means to further the plot; he is not mentioned again.

The ambiguity surrounding Renfield as a monster is evident throughout the novel, as it remains unclear to Seward whether Renfield is either sane or insane. Further, the reader is only made aware of Renfield's mind through Seward's perspective even while Seward constantly negatesg himself. For instance, after constantly observing Renfield, the doctor notes "there is a method in his madness" (Stoker, 1999, p. 102). This is an allusion to Shakespeare's Hamlet as Hamlet is in a similar situation to Renfield. If Hamlet is mad, he also represents a different logic from the supposed normality around him. This reference emphasizes the fact that the question of sanity and normalcy has been prevalent throughout history.

Seward categorizes and alternates between describing Renfield as sane and insane countless times in the novel through stream of consciousness writing. Seward goes back and forth in his diagnosis for Renfield, exemplifying his confusion and struggle to categorize his patient. In the scene where Renfield meets Mina Harker, Seward admits to being astonished by his "own pet lunatic—the most pronounced of his type that [he] had ever met with—talking elemental philosophy, and with the manner of a polished gentleman...for he addressed himself to the question with the impartiality of the completest sanity" (Stoker, 1999, p. 273). First, he calls Renfield his "pet lunatic," demeaning the insane. He also is "astonished" by the manner in which Renfield is able to act in both complete sanity and complete lunacy. In the next scene, Seward refers to Renfield as his "patient" in quotations, signifying the irony of his own uncertainty as to whether or not he is a patient that requires a psychiatrist (Stoker, 1999, p. 282). It is apparent that Seward is limited in his full understanding of Renfield's mental status, yet his need to categorize degrades Renfield to a less worthy individual. Renfield is in an asylum because he is not sane by societal standards, but for Seward, what "not sane" means is unclear once medical rationality proves insufficient to account for the alternative sanity of the insane. Renfield is monstrous because his intermediate health threatens the community and its relation to normal identity. Seward's attitude toward mental illness is demeaning; it is something that he seeks to understand, categorize, and control. However, his attempted categorization results in a back-and-forth determination; measurements of Renfield's sanity create a character that is hybrid in nature, a mixture of sane and insane.

Likewise in *Zombie*, Quentin's performances with his clinicians is calculated as he mimics sanity to appease and deceive those who pass judgment on him. He knows how he is supposed to act as a sane individual and often lies to disguise himself as normal. For instance, when Dr. E__ is assessing him and asks if he has been dreaming, Quentin lies and says what the doctor wants to hear, to which the doctor prognosticates, "there

is definitely an improvement" (Oates, 1995, p. 167). Quentin knows how to manipulate those around him by presenting as sane and knowing how the normal behave. However, it is a performance so he may continue living as a mad scientist creating a ZOMBIE. During the visit, he points out that he is wearing trinkets from the victims he has killed, yet he states this fact in a very nonchalant manner. The irony that Quentin is able to carry out his insanity unnoticed, even while under the scrutiny of physicians and police, highlights his heightened awareness regarding normative behavior and his highly manipulative actions of mimicry. Although those he interacts with consider him normal, the reader knows his truly pathological intentions and his performance emphasizes his hybridity throughout his social exchanges and in the privacy of his own thoughts. Quentin is considered atypical/outsider/insane yet he is able to claim power and mastery of the insider role. Renfield and Quentin do not adhere to their labels or to the condemnation associated with them. Both monsters disembowel the binary system by creating a sense of normalcy and logic despite society's perception of their inability to be rational or "normal." Their madness becomes a "social mask, a role to be played". "The accused becomes the accuser, pointing his finger at the exposed faces" so that the opposite of madness is not sanity but rather the faces of those who do not recognize it (Felman & Evans, 2003, p. 82).

With the inability to categorize Renfield as either sane or insane, we may find that it is difficult to decipher Renfield's motives when viewing them primarily from Seward's point of view. A common way to interpret his character is through a reawakening of his consciousness after meeting Mina Harker. He receives a TBI and dies in a valiant effort to save Mina from Dracula. However, there is an alternative way to read Renfield's motives. Rather than gaining a conscience and trying to save Mina, his motives can be read as an irrational jealousy over Dracula's infatuation with and favoritism for Mina over him. This can be seen through both Seward's claims of his calculating behavior and Renfield's own diction. First, Seward often describes Renfield as "cunning" with "self-

ishness, secrecy, and purpose" (Stoker, 1999, p. 101). Seward observes Renfield's expression during a philosophical debate "'. . . as to life, what is it after all? When you've got all you require, and you know that you will never want, that is all. I have friends—good friends—like Dr. Seward'; this was said with a leer of inexpressible cunning" (Stoker, 1999, p. 256). With this cunning and calculation, Renfield is cognizant of society's perception of sanity; he says what he thinks Seward wants to hear as a form of manipulation. Furthermore, when Renfield first meets Mina, he eats all of the flies before she comes into his room and Seward notes that his reason was due to worry "of some interference" (Stoker, 1999, p. 231); that is, interference with his worship of Dracula and his plans for immortality. He sees Mina as a threat to his plan and his master's attention.

Renfield's jealousy is apparent when he describes his struggle before confronting Dracula, and he admits to waiting for him all day:

> But [Dracula] did not send me anything, not even a blow-fly, and when the moon got up I was pretty angry with him. When he slid in through the window, though it was shut, and did not even knock, I got mad with him . . . [Dracula] went on as though he owned the whole place, and I was no one. He didn't even smell the same as he went by me. I couldn't hold [Dracula]. I thought that, somehow, Mrs. Harker had come into the room. (Stoker, 1999, p. 320)

"Madness from the perspective of the mad can display an entirely different story"

When reading this frame out of context, it sounds much like two partners quarreling and one feeling invalidated by the other, jealous of another woman's interference. Renfield has an intense attachment to Dracula, and for this reason, decides

to attack him after he finds out that Dracula has been draining Mina's blood. In his account of the arrest, Renfield claims, "I was ready for Him [Dracula]. I grabbed [the mist] tight. I had heard that madmen have unnatural strength; and as I knew I was a madman–at times anyhow–I resolved to use my power" (Stoker, 1999, p. 321). Here, Renfield acknowledges his own ambiguous sanity and resolve to kill Dracula out of jealousy. Madness from the perspective of the mad can display an entirely different story. By primarily analyzing Renfield's diction, the reader is able to decipher a perspective other than Seward's. Reading the text through Renfield's perspective gives Renfield a greater sense of agency regarding his own sanity and a greater deal of authority in his actions.

Renfield is seen as a monster because of his association with the brain, but what makes his character even more terrifying is Seward's inability to categorize him. Seward's perspective is not only unclear but it also reflects the common sentiment regarding lunacy. Van Helsing's description of Seward can be extended to claims regarding binaries as well:

> You are a clever man, friend John; you reason well, and your wit is bold; but you are too prejudiced. You do not let your eyes see nor your ears hear, and that which is outside your daily life is not of account to you. Do you not think that there are things which you cannot understand, and yet which are... Ah, it is the fault of our science that it wants to explain all; and if it explain not, then it says there is nothing to explain (Stoker, 1999, p. 302).

Although this quotation is referring to vampirism, it can be extended to Seward's and science's general need for classification. This quote highlights the limits of binaries and the scientific field to expressing them. As readers analyze Renfield's character through Seward's perspective (an insider's perspective), they, too, are limited by a need for categorization and an inability to comprehend hybridity. Analyzing Renfield's diction instead gives

more agency to the monster that disrupts the binary of mental health. Renfield disembowels the binary system by acknowledging his own scale of sanity. It is only when dealing with Renfield's own diction and reading the text from his perspective that the reader is offered an alternative view. Madness is not an illusion but its relation to normality shifts when one approaches insanity as

> *"Monsters represent a different logic named "insane"...in effect, disemboweling the binary system."*

an alternative of what constitutes the normal and sane in the first place. Monsters represent a different logic named "insane" from the perspective of those who are supposedly sane, in effect, disemboweling the binary system.

Gothic horror, therefore, is critiquing binaries by making them indistinguishable, creating monsters that occupy both insider and outsider roles. While initially distinguishing between typical and atypical, the texts constantly intermix them and make distinctness impossible. *Dracula* and *Zombie* adopt the same authoritative discourse by referencing other medical texts to highlight how the binary does not hold. Disemboweling binaries via the hybrid monster, as in Gothic horror, serves to critique the ease of the medical texts in labeling patients as either healthy or pathological. In *Skin Shows*, Halberstam, too, argues that monsters of the nineteenth century "metaphorized modern subjectivity as a balancing act between inside/ outside." In Gothic horror, the deviant monster "announces itself (de-monstrates) as the place of corruption" as a figure that infiltrates boundaries, such as "health and perversity, inside and outside." When these boundaries dissolve, they "threaten the integrity of the narrative itself" (Halberstam, 1995, p. 1). Rather than being a comprehensive psychological notion, monstrosity is "historically conditioned": monsters reveal the conditions that produce horror by disrupting categories and identities that society clings to. Foucault has sim-

ilarly claimed that psychological fears take root as unconscious social mechanisms, which are the "effects of historical and cultural production." These unconscious social mechanisms have been internalized to such an extent that when they are disrupted, it threatens the community as well as individual identity (Halberstam, 1995, p. 6). The alternate logic of madness in both novels is presented not simply as the opposite of sanity but instead as different and entirely monstrous. Procuring ambient fear within the text and among characters also gives us the occasion to question the larger social discourse that reflects it.

In the scientific texts, the categories of brains are based upon a certain set of assumptions that need to be reinforced with social action; the Gothic helps us to see its instability via hybridity. As a concession, however, both Gage and the Modern Gage remained able-bodied and appeared to be as mentally capable as before the accident. Neither had impairments to speech, movement, memory, or intelligence. Their only difference was their nearly identical alterations in personality and conduct as "their ability to make rational decisions in personal and social matters was compromised, in contrast with their relatively intact general cognitive abilities" (Dimitrov et al., 1999, p. 350). They lacked respect for social conventions and concern for others due to the damage to each of their prefrontal cortices. This evidence supports the idea of cerebral localization in that the ventromedial prefrontal cortex is involved with facilitating emotion and social behavior (Dimitro et. al, 1999, p. 345). From a medical perspective relative to that time, both patients should have been completely biologically normal. Despite their normal neurological examinations, however, both patients displayed abnormal social behavior. This epiphenomenal change led to antisocial behavior, the byproduct of which serves as a critical distinction between the normal and abnormal and thus is an effectual justification for social action. These historical instances indicate the ways in which social standards can be easily shaken by the disruption of the binary of normal and abnormal mental health. This uncertainty and incapacity to categorize confuses the ability to mark the

patients as completely "other" and misaligns them with societal standards. This disregard for social norms shakes the foundation of societal beliefs and values and threatens its safety. Nonetheless, what remains most horrifying about the hybrid figure is their embodiment of categorical failure.

Conclusion

As society creates and evolves its understanding of madness, an analysis of the texts above reinforces this concept. Perspective is critical and focalization should seek to answer two separate questions: "Who speaks, and whose vision is presented [?]" (Culler, 2011, p. 88). In *Dracula*, Renfield's story is focalized through Seward and therefore the questions above pose two separate answers. This creates variables in terms of temporality and knowledge (Culler, 2011, p. 89). The reader is restricted by what Seward knows at the time of his narration and is limited by ignorance of Renfield's direct thoughts or cause of action. Rather we are solely given Seward's limited perspective, which even Van Helsing regards as prejudiced. There are things that Seward does not understand and therefore cannot explain. He is not omniscient; but human, biased, an insider, and, in essence, unreliable. Focalization and complications in narration further highlight the boundaries which Renfield violates. This is of consequence to the reader, who must actively read the underlying categorization that Renfield transgresses. Readers should analyze the texts both from the "insider" or "normal" perspective and from the perspective of the deviant, outsider, abnormal. It is critical to view the outsider's perspective and in doing so, one may realize the full extent of how stigmatized the deviant and damaged brain is. Madness, from the perspective of the mad, can convey an entirely different story. This concept can extend to society's general perception of atypical minds and seeking understanding of outsiders' perspectives.

Deeper analysis of Gothic horror mixes the normal and abnormal while medical texts separate the normal and abnormal. However, both are functioning in the same way by distinguishing the normal and abnormal at the level of their domi-

nant discourse. Both texts share a similar view of social functions; the medical texts display characters being designated as abnormal, the condition for which is appropriate for their medicalization, which helps show the Gothic qualities of the texts without necessarily drawing on them directly. The Gothic horror builds upon the long established themes of healthy versus pathological in neurological discourse. Seward, who represents a medical authority for the novel, and doctors in the medical texts, tries to distinguish between the normal and abnormal but Gothic horror effectively shows that, in moments of hybridity, the most horrifying aspect is the fact that such categories have failed. Each respective disciplinary field is functioning in a similar way to comment on social functions. Both have similar patterns and cultural structures to make similar interventions. Scientific texts have reactionary responses to allegations of deviancy, whereas the Gothic disciplining of deviance and rhetoric of texts is to establish the patient as deviant and therefore necessary to restore to normality. Gothic horror has the same authoritative discourse and disembowels the binary to reveal its artificiality and the amount of cultural work that is

> *"it is apparent that normality is transformative and circumstantially tilted toward the side of those who control its definition."*

required to maintain such boundaries.

While the functioning brain serves as a metonym for the human in the above medical texts, Gothic horror makes reference to further question the reliance of normalized personality as the core of its essence. Medical texts and Gothic fiction alike have helped to address societal perceptions, stigmatizations, and the limits categories impose on humanity. The apparent mixture of the typical and atypical brain creates an intermediate that threatens fragile identities. However, it is apparent that normality is transformative and circumstantially tilted toward the side of those who control its definition. Studying abnormalities on a literary level thus can reveal conditions of the society with

which they were written. Deviance, then, is not something that can be or should be categorized without first calling into question what "normal" is, what it entails, and why. It is not a question of who is normal and who is not normal, but rather what it means to be "normal." Work needs to be done to have more inclusive societal perceptions, projected on a spectrum rather than definitive boxes that are both stifling and immovable.

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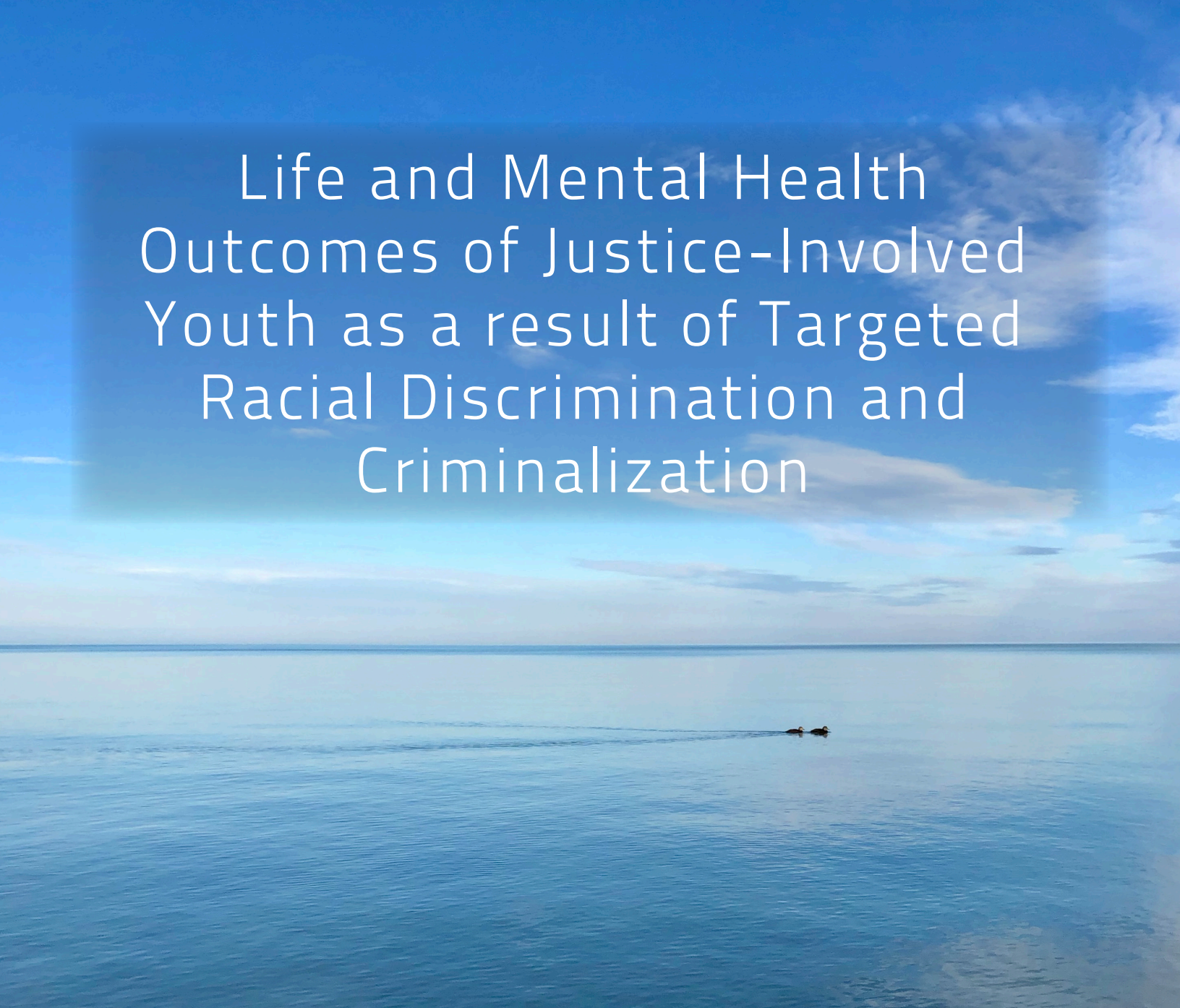Pincus, Jonathan H. (2001). *Base Instincts: What Makes Killers Kill?* New York: W.W. Norton.

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Life and Mental Health Outcomes of Justice-Involved Youth as a result of Targeted Racial Discrimination and Criminalization

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BIOGRAPHY

Isabella Hu is a recent Fall 2018 graduate of Case Western Reserve University. As her time as an undergraduate ends, she is looking forward to the next steps of her academic career, which will involve applying to PhD programs in clinical psychology after taking a gap year to continue working as a research assistant in Cleveland. Isabella hopes to work with at-risk adolescent populations as a professional.

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Nearly 53,000 youths are held in correctional facilities in the U.S. every day as a result of juvenile or criminal justice involvement (Sawyer, 2018). Minor status often does not deter judges from harsh sentencing as one in ten of these 53,000 youths are held in an adult jail or prison. Additionally, due to a process called remand, one in five juvenile justice-involved youth are held in detention facilities before they have gone to trial. Meanwhile, adolescents of color are grossly overrepresented in the juvenile incarceration population. Even though black youth make up less than 14% of all youth in the U.S, they make up 43% of boys and 34% of girls in juvenile facilities (Sawyer, 2018). There are several structural and institutional reasons for this disparity. Concentrated poverty, often racially segregated, can be found in inner-cities with high minority populations and high rates of unemployment (Iceland & Hernandez, 2017). These minority communities are confined to a cycle of poverty and violence that prevents upward social mobility. At the same time, community violence has negative effects on youth life and developmental outcomes, as higher rates of neighborhood violence are associated with lower probabilities of upward income mobility (Sharkey & Torrats-Espinosa, 2017). Without steady and sufficient financial resources, members of poor communities are more likely to engage in the underground economy, which puts them at risk of gang violence and crime. As a result, poor, black neighborhoods become targets of strict policing due to the assumption that violence and illegal activity run rampant within these areas.

These perceptions create a lens within law enforcement that views residents as criminal, often causing innocent men and women to become victims of discrimination and harassment. As shown in the media, men, women, and adolescents of color are not treated justly when stopped and detained by police officers. In 2017, police officers were responsible for the deaths of over 1,100 American citizens; 25% of this group were black (Sinyangwe, Packnett, & Mckesson, 2018). Furthermore, African Americans hold the highest poverty rate among racial and ethnic groups and 45.8% of young black children live in poverty (Economic Policy Insti-

> *"These minority communities are confined to a cycle of poverty and violence that prevents upward social mobility.*

tute, 2014). With limited opportunities to increase one's own financial and social situation, residents of impoverished neighborhoods are vulnerable to traumas associated with violence and crime (Jargowsky, 1996). These traumas can include police discrimination and abuse by the criminal legal system. Current policing practices of law enforcement disproportionately target adolescents of color which put them at increased risk of maltreatment by the criminal legal system and subsequent negative general life and health outcomes.

Discriminatory policing practices

Current policing practices are militaristic in nature, utilizing aggressive and physical tactics to keep order in poor neighborhoods (Brunson & Miller, 2006; Stewart et al., 2009; Kauff and Hewstone, 2017; Blankenship et al., 2018; Herda and McCarthy, 2018). Research has found that neighborhood conditions play a role in shaping levels of racially-based police discrimination experienced by black adolescents (Stewart et al., 2009). These conditions include the racial composition, affluence, and occurrence of violence within neighborhoods. It was found that instances of police discrimination against black youth increased as the percentage of white residents in neighborhoods increased. Furthermore, both affluent and violent black neighborhoods, in addition to majority white neighborhoods with large black population growth were found to have significantly higher levels of perceived racial discrimination by law enforcement (Stewart et al., 2009). These results may be attributable to the belief that black adolescents do not belong in white areas. Additionally, it has been discussed that increased discrimination in white neighborhoods with large black populations is a retaliatory effort against black population growth (Stewart et al., 2009). Research has shown that pedestrian and vehicu-

lar stops are common policing strategies in disadvantaged neighborhoods (Brunson & Miller, 2006). Affected youth have described police interactions as humiliating and intrusive. Due to high rates of crime and violence and potential racial prejudices, law enforcement officers are likely to presume black and Hispanic youth as guilty. In interviews conducted with young men and women of color, police were described as impolite, hostile, and aggressive in participants' neighborhoods, often refusing to acknowledge the innocence of the young people they stopped. Additionally, participants reported being verbally degraded and abused by law enforcement on several occasions. One participant recalled being stopped by a police officer because he fit the description of the suspect for a crime that occurred on the other side of town. Despite the minor chance that the participant was the offender, the officer continued to interrogate him about his intentions and conducted a physical frisk before allowing the participant to resume his walk to school (Brunson & Miller, 2006). Additionally, young black women in the study expressed frustration at the lack of police response to reports of sexual assault and other violent crimes in their neighborhoods (Brunson & Miller, 2006). These accounts of negligence and abuse suggest that there is both over-policing for certain offenses and under-policing for other offenses in poor, minority neighborhoods.

White youth are not subjected to the same level of policing as colored youth. When caught in illegal activity, white youth were found to be more likely than their black youth counterparts to be let go by police officers (Blankenship et al., 2018). Research has also suggested that police discrimination may have the most significant effect on minority student health (Kauff and Hewstone, 2017). Minority youth were more likely to report psychosomatic symptoms, such as headaches, stomachaches, and difficulty sleeping, related to perceived police discrimination. Research indicates that perceived discrimination can occur vicariously and still affect levels of offending (Herda and McCarthy, 2018). Overall, black youth were expected to be 1.76 times more likely involved in violence than white youth. Research suggests that anticipated,

experienced, and vicarious discrimination affects black and Hispanic youth in similar ways by increasing their likelihood of engagement in criminal activity (Herda and McCarthy, 2018).

The stated role of law enforcement is to protect citizens in the U.S., regardless of identity. However, research to date supports the claim that policing practices in poor ethnic neighborhoods may be discriminatory and overly aggressive. What is lacking in the literature is an assessment of behavioral patterns in police officers who are likely to act on racially-based perceptions. If police officers with racial prejudices can be identified, they could be held responsible for inappropriate and discriminatory actions. Further research would give insight on the prevalence of racial prejudice in the police force, a population that is meant to be objective and without biases. Additionally, few studies focus on discrimination in other environments that youth of color are often found, such as schools and community centers. School resource officers are police officers assigned to prevent crime and ensure safety in schools. Research on discrimination by school resource officers and police officers in environments outside of residence areas would provide knowledge of how policing is affected by different environmental contexts.

Discrimination and abuse during

"If police officers with racial prejudices can be identified, they could be held responsible for inappropriate and discriminatory actions."

incarceration

Incarcerated youth are subjected to additional harassment and abuse while being held in juvenile detention and correctional facilities (Dierkhising and Natsuaki, 2014; Thomas, 2017; Galardi & Setterson, 2018; Chadick et al., 2018). Dierkhising and Natsuaki (2014) interviewed sixty-two formerly incarcerated young adults, the majority of whom were Hispanic. Participants were asked about their experiences with correctional officers during in-

carceration. 96.8% of the sample reported experiencing abuse either directly, as a witness, or vicariously through another inmate. Furthermore, 77.4% of youth in the study had experienced some form of direct abuse during incarceration; one participant reported getting his collar broken by a staff member and another recalled being picked up and slammed onto the floor by a staff member. In addition to abuse and harassment from correctional staff, juvenile inmates experience violence perpetrated by other inmates. One participant recalled several fights that could have been prevented, but the guards had turned their heads. Other common forms of abuse included denial of food, solitary confinement, and psychological abuse (Dierkhising & Natsuaki, 2014). In another study,

> *"Adult inmates who spent extended periods of time in solitary confinement were found to have greater drug and alcohol dependencies post-release."*

solitary confinement was reported to be the most common form of direct abuse by correctional officers (Chadick et al., 2018).

Research suggests that solitary confinement exacerbates psychological dysfunction and prevents cognitive development. Adult inmates who spent extended periods of time in solitary confinement were found to have greater drug and alcohol dependencies post-release. Additionally, these inmates were vulnerable to hallucinations, delusions, and paranoia during isolation and exhibited greater post-assessment levels of anxiety, depressed mood, and post-traumatic stress (Chadick et al., 2018). Juvenile inmates are primarily restricted to interactions with other inmates and correctional officers during incarceration. The nature of these relationships has a large influence on adolescents' cognitive and emotional development. Galardi and Setterson (2018) interviewed correctional staff in a juvenile detention facility in order to understand staff perceptions of the inmates. It was found that staff regarded

male and female inmates differently and conducted themselves differently when working with each population. Male inmates were described as emotionally reserved and physically violent and aggressive by both male and female staff. Female inmates were regarded by male staff as more defiant when physically restrained and as potential sources of false claims of sexual misconduct, regardless of whether or not the staff member had physically worked with the female inmate population (Galardi & Setterson, 2018). Recent research suggests that sexuality has often been used as an avenue to punish and scrutinize female offenders (Thomas, 2017). Females in detention are less likely to achieve rehabilitation due to strict controls placed on them by the institution. These controls include restrictions on where they are allowed to be, how many people are allowed in a room at one time, and the amount of time they spend in a certain location. Due to the increased perception of sexuality in females, strict spatial and behavioral controls are placed on females in detention facilities, preventing them from freely expressing their identities (Thomas, 2017).

Research in this area is lacking due to the difficult nature of studying this population without violating ethical regulations. However, with the evidence presented, it is suggested that the restrictive institutional setting of prison is not conducive to rehabilitation for juvenile delinquents. Studies have only recently begun to look at the experiences of incarcerated youth in correctional facilities. The current literature suggests females are treated and regarded differently than males in juvenile correctional facilities; however, there are few studies that look at differences during incarceration based on gender. In addition to lacking in quantity, studies in this area often have small sample sizes and fail to assess the power dynamics between staff and inmates that are likely to affect conduct within juvenile detention facilities. The relationships and interactions that juveniles have during incarceration influence their social and cognitive development. Further research on juvenile detention facility conditions could potentially reveal behavioral and structural pat-

terns within carceral environments that could inform reform efforts and policies.

Life and Mental health outcomes

The effects of incarceration exceed the confines of the institution itself. Incarcerated juveniles are likely to experience negative life outcomes as a result of their criminal involvement (Comas-Diaz and Jacobsen, 2001; Blankenship et al., 2018). Research has found that black youth were significantly more likely than white youth to report dropping out of school due to incarceration: 39% versus 23.7% respectively (Blankenship et al., 2018). In a study sample of 146 black participants and 97 white participants, 60% of black participants reported housing instability due to incarceration and 89% reported difficulty finding employment due to their criminal record. Moreover, 44.8% of black participants reported estrangement from a family member due to incarceration versus 29.8% of white participants. While not all significant, black participants were more likely to be affected than their white counterparts in all measured categories of the study (Blankenship et al., 2018). Research has also found that interpersonal relationships and self-concept are significantly impacted by racism (Comas-Diaz and Jacobsen, 2001). Incidents of racial discrimination are likely to cause ethnic and sociocultural emotional injuries to one's sense of identity resulting in confusion, disillusionment and racial mistrust. Furthermore, individuals of color may become hypersensitive in social situations due to previous occurrences of racial discrimination (Comas-Diaz and Jacobsen, 2001).

Juvenile offenders of color are likely to become repeat offenders in adulthood (Barrett and Katsiyannis, 2016; Mowen et al., 2018; Blankenship et al., 2018). In a recent study, individuals arrested as adults were likely to be male African Americans, in addition to having been eligible for free/reduced lunch in school and placed in foster care and child protective services as a minor (Barrett and Katsiyannis, 2016). Research has found that later age of first arrest is correlated with higher instances of adult offending, as younger offenders tend to age-

"Incidents of racial discrimination are likely to cause ethnic and sociocultural emotional injuries to one's sense of identity resulting in confusion, disillusionment and racial mistrust. "

out of offending before adulthood. Additionally, later-starting delinquents were three times more likely than non-delinquents to be arrested for a felony and two times more likely to be arrested before the age of thirty (Barrett and Katsiyannis, 2016). Research has found a positive relationship between receiving an arrest and later delinquency with higher frequencies of arrest correlated with significant increases in future offending (Mowen et al., 2018). While African Americans reported significantly fewer adult convictions than their white counterparts, they were found to be incarcerated more often than whites (Blankenship et al., 2018). Furthermore, as juveniles, black youth were significantly more likely to be incarcerated than white youth (Blankenship et al., 2018).

Research on life outcomes is lacking in comparison to health outcomes for juvenile offenders. The available literature briefly mentions life outcomes; however, these experiences are often overshadowed by cognitive and psychological effects of incarceration. Current evidence suggests a relationship between juvenile delinquency and adult offending, signaling a deficit of available and effective treatment and behavioral programs in juvenile correctional facilities. Effective programs for juvenile inmates decrease the likelihood of recidivism as poor life outcomes increase the likelihood of recidivism (Mowen et al., 2018). Additionally, the literature is lacking in longitudinal and qualitative studies that interview previously incarcerated youth about their personal experiences after reintegrating into society. The reentry process is a complex and ongoing transition that surveys and other methods may simplify due to the structure of the assessments.

Justice-involved youth are also susceptible to negative health outcomes due to the psychological effects of incarceration (Domalanta et al., 2003; Penn et al., 2003; Helms et al., 2010; Dierkhising and Natsuaki, 2014; Rosenberg et al., 2014; Barnert et al., 2018). Research has indicated that age of first arrest and adult health are related: the younger age of first arrest, the worse adult health outcomes (Barnert et al., 2018). Research suggests that communities of color, including African Americans, Hispanics, and Native Americans, exhibit greater occurrences of post-traumatic stress disorder likely due to experiences of discrimination and marginalization (Helms et al., 2010). Several studies have found evidence that incarcerated youth experience higher levels of depression, post-traumatic stress disorder (PTSD), and substance abuse (Domalanta et al., 2003; Dierkhising and Natsuaki, 2014; Rosenberg et al., 2014). In one study, 33.9% of the sample showed mild to significant depression symptoms, while 14.5% of their sample showed clinically significant PTSD symptoms (Dierkhising and Natsuaki, 2014). These symptoms were also positively associated with post-release criminal involvement. Furthermore, in a study assessing past traumas, 94% of a sample of 350 justice-involved juveniles reported experience of at least one trauma. It was found that 45.7% of these juveniles were diagnosed with PTSD, 49.4% were diagnosed with depression, and 61.2% were diagnosed with substance abuse disorders (Rosenberg et al., 2014). In a large-sample study of 750 male and 274 female incarcerated youths, 25.5% of males and 30.7% of females had been diagnosed with a type of mood disorder, such as major depressive disorder (Domalanta et al., 2003). Moreover, 38.7% of males and 26.1% of females reported drug abuse. Additionally, females were significantly more likely to report a somatoform or anxiety disorder than males. Research has found that suicide is the leading cause of death in populations of incarcerated youth (Barnert et al., 2018). Suicidal ideation and attempts were found to be higher in incarcerated populations than the general population. In a sample of 78 clinically referred youth, 32% attempted suicide by violent means at least once and 30% reported self-mutilative behavior during incarceration (Penn et al., 2003).

The current literature focuses primarily on the prevalence of mental illness in justice-involved populations. What is missing are large-scale analyses with larger sample sizes, not only assessing prevalence of mental disorders, but changes in cognition, self-concept, and world-concept due to incarceration. The literature suggests that correctional facilities are traumatizing and detrimental to cognitive and psychological development in juveniles. With such frequent occurrences of psychological and mental illnesses in juvenile correctional facilities, current studies indicate a serious need for treatment of incarcerated youth. Studies also suggest differences in prevalence of psychological disorders based on gender. So, further research in this area could direct treatment programs to better accommodate these differences.

Policy reform

Since the treatment of incarcerated youth in juvenile detention facilities leaves much room for change, current literature discusses potential avenues of policy reform (Myers and Farrell, 2008; Rapp, 2016; Kretschmar et al. 2018). The juvenile legal system's mission consists of rehabilitating youth with behavioral problems and ensuring public safety (Rapp, 2016). Current solutions involve electronic monitoring, restrictive facilities, solitary confinement, and scare tactics. One study suggests applying a public health lens on the issue (Myers and Farrell, 2008). Interventions would focus on known risk factors and developmental concerns for justice-involved youth. A three-tiered prevention model has been proposed to support positive behavior and provide effective interventions. In this pyramid model, the bottom tier, designed for all justice-involved youth, focuses on universal prevention by providing behavioral and educational programs. The second tier involves substance abuse programs and vocational training for at-risk juveniles, which are more targeted forms of support than the bottom tier. The third tier is the most personalized and focuses on individualized interventions for justice-involved youth, including mental health interventions and intensive skills training (Sandomierski, Kincaid, and Algozzine, 2007 as cited in Myers and

Farrell, 2008). Another suggested approach is a trauma-informed model (Rapp, 2016). This system would view traumatized youth as reactive actors, who have been trained to be hypervigilant in everyday settings in order to protect themselves from further violence and harm. Adoption of this model would involve substantial change to the current juvenile legal system, involving increased safety precautions and policies, trauma-informed training for staff, and elimination of a punitive atmosphere (Rapp, 2016). Both suggested models focus on psychological rehabilitation and empowerment of justice-involved youth, instead of punishment and incapacitation.

> *"Current policing practices discriminate against poor, ethnic neighborhoods with over-policing under certain circumstances and racially-based interactions."*

One recent study suggests promising results for programs that target youth with behavioral issues from committing criminal offenses (Kretschmar et al. 2018). The study featured a juvenile justice program that included various services, such as family therapy, individual therapy, and access to mental health and community resources. Results found that juveniles who successfully completed the program were less likely to recidivate as adults than juveniles who did not participate in the program (Kretschmar et al. 2018). As this study was published in 2018, it is one of the few in the current literature. Additional studies that pilot treatment programs for juveniles in detention facilities are warranted.

As the literature suggests, the current juvenile justice system does not fulfill its mission of rehabilitation and promotion of desistance. Instead, it punishes justice-involved youth for their backgrounds of trauma and poverty. While the theories discussed in the literature are promising, the literature does not include examples of real-life applications of proposed change models. There-

fore, evidence is lacking for the effectiveness of these suggestions. However, the results of Kretschmar et al. (2018) are encouraging to spur future studies exploring the efficacy of rehabilitative, as opposed to punitive, approaches to decreasing juvenile offending.

Conclusion

Justice-involved youth often come from backgrounds of trauma and poverty. Due to their inability to find financial stability in the formal economy, urban, minority neighborhoods have become areas of concentrated poverty, crime, and violence. Where there is crime, there will be a presence of law enforcement. Current policing practices discriminate against poor, ethnic neighborhoods with over-policing under certain circumstances and racially-based interactions. Within these neighborhoods, there is a lack of trust and faith in law enforcement as aggressive policing has resulted in youth of color making up the majority of incarcerated juvenile populations. The current juvenile justice system punishes these youth of color, instead of treating them for the likely traumas they have experienced through their upbringing. The current literature provides an overview of the flawed juvenile legal system. Juvenile correctional facilities do not provide effective treatment or services that discourage recidivism and encourage juvenile rehabilitation. Rather, these institutions are likely to abuse these youth and put them at further risk for negative life and mental health outcomes. Studies are lacking in assessing individual experiences that may be significant to understanding the current practices in correctional facilities, as policy is not always implemented as intended. Additionally, studies with larger samples would be beneficial to the generalizability of the effects of incarceration on minority youth. Current literature also does not include the experiences of female juveniles in correctional facilities, as it has been suggested that their experiences during incarceration are different than male experiences. Further research on this current societal problem will contribute to a more comprehensive understanding of how to address the institutional mechanisms that foster

inequality in our criminal legal system, in addition to providing effective and rehabilitative treatment for incarcerated youth.

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