

Attention Modulation as the Basis for Psychopathic Behaviors

By: Tina Khiani



As human beings, we constantly think about our personalities and the personalities of others. We use our traits and characteristics to explain our actions and our relationships with others. We choose our life partners based on how their qualities complement our own. Benjamin Heikali, a senior psychology major, is researching how different personality types interact with one another. Specifically, he is interested in studying the personalities of psychopathic individuals and how they allocate attention compared to individuals without any disorder.

Psychopathy: An Overlooked Phenomenon

The Diagnostic and Statistical Manual of Mental Disorders IV, or DSM-IV, is the most current edition of the manual used to diagnose most psychological disorders. However, psychopathy is not included. It is considered a personality disorder by most clinical psychologists and those affected by it display superficial charm, egocentricity, lack of empathy and guilt, and absence of lasting relationships. The disorder can be broken down into two factors – discrepancies in emotional processing, which lead to interpersonal and emotional irregularities, and impaired executive functioning and cognitive control, which leads to impulsive and antisocial behaviors.

The Response Modulation Theory combines many other theories involving the causes of both factors. It zeroes in on attention as being at the root of most symptoms. Psychopathic individuals are thought to only allocate attention to their immediate interests. Often this is mistaken for indifference or ignorance, but the element of choice is not present to these individuals. Being unable to register outside cues negatively affects the individual because they are unable to learn from experience. However, the lack of support for this theory has made it difficult to utilize it for diagnosis and treatment.

Taking a New Perspective

Since Spring 2011, Heikali has been administering online questionnaires to both normal and “psychopathic” individuals. He has been working with a specific hypothesis in mind; he believes that psychopaths will portray themselves as having lower than normal ability to shift their attention but higher than normal ability to focus their attention. The drive for this work has come from recent research illustrating that this fundamental processing deficit may be the prime etiological explanation for psychopathic behaviors. Joseph Newman, a psychology professor at the University of Wisconsin – Madison, argues that psychopathic individuals exhibit a fundamental deficit in processing information or cues outside of what activity they are doing at the moment. Thus, social rules and the effects of others may not register in their minds. Heikali hopes to support this theory but use a different perspective. He wants to observe how psychopaths observe their own attention – whether or not they report their attention shifting ability as low or high.

A unique combination of questionnaires was used to measure several variables. On top of self-perceived attention control and degree of psychopathy, anxiety and interpersonal reactivity were also observed. The total data collection period is still not over, but should be approximately three months long. The main variables the statistical analyses will center around are overall attention control, psychopathy, anxiety, and empathy. Heikali hopes that using a non-incarcerated psychopathic population of youth will help increase the generalization of his findings.

A Strong Support System as a Key to Success

Heikali’s research is being conducted in the A-Z lab of Dr. Lisa Aziz-zadeh alongside Mona Sobhani, a Ph.D. candidate. Under the Brain and Creativity Institute, this lab runs projects that explore the relationship between areas of our brain that were once thought to be solely sensory-motor and higher cognition, such as language, emotion, attention, etc. He is also utilizing the resources of Dr. Laura Baker to recruit participants and date through her twin study. Along with participants from the psychology department’s subject pool, he aims to have statistics for about 60 individuals.

Heikali stated that Sobhani is a very important figure in mentoring him through his research. “[She] has been consistently by my side, guiding me through the ups and downs of scientific research while simultaneously allowing me to develop my own ideas.” Although students think first to look to faculty as mentors, graduate students can provide a unique supply of role models.

Sparking an Interest

Heikali has a strong interest in the etiology of psychological disorders. He believes that in order for proper diagnosis and treatment to occur, one must comprehend exactly what

factors play key roles in causing the disorder. He feels lucky that he was able to find the A-Z lab since their focus on personalities and cognition is so closely related to his interests.

Opportunities at the university propelled Heikali's advancement in the field of psychology. He stated that PSYC 360: Abnormal Psychology was a great introductory class for learning about different psychological disorders. He also cited Professor Dave Lavond's classes on behavioral neuroscience and learning and memory as important to shaping the fundamentals of his research questions.

Advancing to the Next Step

Heikali admits there are several limitations to his research. A small sample size is often a weak point when working with populations containing a unique trait such as a psychological disorder. Furthermore, even though his focus was on self-perceived attention control, measuring attention directly may have provided useful additional information. Thus, his work will only be as accurate as the subjects' reports.

Although his main work has been deeply rooted in the field of psychology, Heikali is moving on to law school. He has been working with Dr. Tom Lyon, a professor at the Gould School of Law, who researches child testimony and truth telling. The intersection between the study of the mind and the study of the legal system is very fascinating but much remains to be explored. We hope to see Heikali navigate his way through.