

The Creative Minds of Tortured Souls:  
The Relationship Between  
Creativity and Mental Disorders

by

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## **Abstract**

What is the relationship between mental disorders and creativity? This thesis addresses this age-old question using a case study approach. Three artists, Vincent Van Gogh, Edvard Munch, and Michelangelo Merisi da Caravaggio, will be discussed in these case studies, as they are all exceptionally well known for their artistic and creative talent as well as their experiences with pathological behaviors and symptoms. With these case studies, the neurological, environmental, affective, behavioral, cognitive and motivational features of mental disorders will be analyzed in order to obtain a holistic understanding of how mental illness can spur creativity, and for a select few, function as the origin of creative genius. While it can be difficult to draw generalizable conclusions about the relationship between creativity and mental disorders from such a small sample, this thesis will illustrate the extent to which mental disorders can play instrumental roles in the creative processes of artists. An important common element of this relationship, as observed for all three artists, is that mental disorders can inspire and compel artists to pursue greater levels of self-expression as well as artistic skill. One of the primary objectives of this thesis is to obtain an understanding of the positive aspects of mental disorders. Hopefully, by focusing on these positive elements, the negative societal branding of mental disorders will be called into question, and an acceptance, appreciation, and celebration of those afflicted, and the sources of their creativity, will be promoted.

## Chapter I: Introduction

John William Gardner once said, “Creative minds are rarely tidy.” For centuries, society has intuited a relationship between the creative genius and mental illness. The definition of this relationship, however, has remained a perennial source of mystery and wonder. Plato, for example, believed that creativity could be described as a “divine madness” and was devoid of any semblance of originality (Ludwig, 1995). The ancient Romans were convinced that creativity was the product of a “frenzied inspiration” that was associated with male power and mysticism. During the Middle Ages, the Western world understood creativity as a form of divine inspiration (Runco & Albert, 2010). The problem with defining this relationship was twofold: first, these philosophers and theorists sought to describe biological and psychological connections with supernatural rather than scientific explanations; second, they lacked the requisite instruments for accurately analyzing and measuring the relationship between creativity and mental illness. Recently, psychological scientists have eschewed these religious, mystical, and supernatural perspectives of creativity and mental illness, and, with the development of tools for measurement, have instead employed empirical approaches in order to develop a more systematic definition of this relationship.

The advent of the I.Q. test in 1905, along with the development of the correlation coefficient, allowed researchers to empirically examine the link between intelligence and those who they believed exemplified creativity (Hastorf, 1997). The creation of personality tests in the 1920s allowed psychologists to uncover the connections between ingrained behavioral and affective characteristics and the

creative mind (Benedek, Jauk, Sommer, Arendasy & Neubauer, 2014). More recently, the proliferation of neuroimaging methods in the early 2000s have empowered scientists with the ability to identify the biological underpinnings of creativity and mental illness (Jung, Gasparovic, et al., 2009; Jung, Segall, et al., 2010; Jung, Grazioplene, Caprihan, Chavez & Haier, 2010). Though societal conceptions of creativity and its origins have clearly changed drastically throughout history, this thesis will adhere to what is referred to in the scientific literature as “the standard definition of creativity”. This definition identifies the ability to construct products that are both novel and useful, given their social context, as the two critical features of creativity (Plucker & Makel, 2010).

Creativity is predicated on originality and originality is achieved through a variety of means. There are those who integrate multiple disparate sources into a cohesive whole and others can who can draw inspiration simply from a change of perspective (Kozbelt, Beghetto & Runco, 2010). With this in mind, understanding the genesis of originality would illuminate a key element of the creative genius. Seneca believed that “there is no great genius without some touch of madness” (Ludwig, 1995). There may be some veracity to this claim; though not all true creative geniuses suffer from mental disorders, a disproportionate number of highly eminent individuals do in fact have some form of mental illness. One study found that out of a sample of 455 eminent individuals from artistic professions, approximately 72% experienced a mental illness at some point during their lifetime (Ludwig, 1995). Mental disorders are especially prevalent in professions that value self-expression and do not require formal structure. This is why visual artists, rather than chemists,

accountants or engineers, are far more likely to possess some form of pathology (Silvia & Kaufman, 2010).

In order to further examine the relationship between creativity and mental illness, this thesis will explore the creative process of visual artists through a psychological lens. Some evidence suggests that rather than functioning solely as a source of pain, despair and shame, mental illnesses have the potential to promote and cultivate creative ability (Saltz, 2017). Using a case study approach, the relationships among the neurological, environmental, affective, behavioral, cognitive and motivational effects of mental disorders will be analyzed in order to obtain a holistic understanding of how mental illness can spur creativity, and for a select few, function as the origin of creative genius.



## Chapter II: Understanding Creative Genius

### Domain-Specific vs. Domain-General

To be considered a creative genius, one must continually produce products that are both creative and highly influential (Ludwig, 1995). In order to understand how mental disorders can contribute to or even cause someone to become a creative genius, it is important to first define the concept of genius. A crucial element of this definition requires recognizing genius as either a domain-general or domain-specific ability. This distinction is important because answering the question of “domain-specific vs. domain-general” will directly affect what can and cannot be used as evidence of genius.

Domain-general abilities affect every skillset, trait and facet of an individual (Shavelson, Webb & Rowley, 1989). Foundational cognitive processes such as working memory, processing speed, executive functioning, attention, tolerance for ambiguity and functional fixedness can apply to a multiplicity of domains. Therefore, if genius were domain-general, a mathematical genius would likely also be considered a genius when it comes to poetry, anthropology, chemistry and so on. Conversely, a domain-specific ability would only affect the qualities or attributes of an individual that relate to a single specific skill or talent. Geniuses often require domain level knowledge and skills even if they have exceptional cognitive processing abilities. With this in mind, if genius was domain-specific, the mathematical genius might excel in abstract reasoning and the memorization of symbols and formulas, but would not necessarily also be considered a genius in any other field.

On a practical basis, one might intuit that Ernest Hemingway, a man so adept at crafting and developing stories, would be well suited to create a painting with a compelling narrative. There is an empirical basis for this reasoning. In one study (Benedek, Jauk, Sommer, Arendasy & Neubauer, 2014), researchers assessed a sample of 230 adults with a series of divergent thinking tests to determine each participant's respective level of creativity. The researchers then gave the participants a NEO-FFI test, which consists of 60 questions and is used to gauge the personality of an individual across five personality traits: (i) openness to experience, (ii) conscientiousness, (iii) extraversion, (iv) agreeableness and (v) neuroticism. The creativity scores from the divergent thinking tests were then correlated with the results from the NEO-FFI tests. Greater openness to experience predicted significantly higher scores on divergent thinking tests ( $r = .29, p = .06$ ). These results indicate that some personality traits, notably openness to experience, can contribute to creativity in a variety of fields and domains.

Additionally, psychometric measures of creativity, such as the Torrance test, have shown predictive validity across a multiplicity of fields and domains as well (Sternberg, Grigorenko & Singer, 2004). The Torrance test is predominantly a series of divergent thinking exercises (e.g., creating a list of as many uses as possible for a jar of maple syrup within a span of 2 minutes). In one longitudinal study, a sample of 254 high-school students was given the Torrance test. Then, after 7 and 12 years, the former students were interviewed about their creative achievements. The researchers assessed creative achievements based on four criteria: (i) the quantity of creative achievements, (ii) the quality of the creative achievements, (iii) the participant's level

of ambition and (iv) the quantity of creative achievements in high school. The Torrance test scores were then correlated with the creative achievement scores and the results strongly suggested ( $r = .51, p = .01$ ) that the Torrance test could predict creative achievement (Torrance, 1988; Sawyer, 2012).

It is important to note however, that these studies may not necessarily apply to creative geniuses. Because creative geniuses are so rare and unique, they may very well have entirely different cognitive and creative processes than the samples used in these experiments—further research providing a definitive answer as to whether the results obtained from studies of “everyday geniuses” can be extrapolated to undeniable geniuses simply do not exist (Leighton & Sternberg, 2004; Sternberg, Grigorenko & Singer, 2004).

### **The Role of Expertise**

Ernest Hemingway was one of the most talented writers of the 20<sup>th</sup> century but he was never known to be a painter and almost certainly did not have the same level of technical talent with a brush as did artists such as Pierre-Auguste Renoir or Jan van Eyck. Although foundational cognitive abilities such as divergent thinking might play an important role in creativity, domain-specific knowledge and skills appear to be required in order to achieve eminence within a given domain. Indeed, there is empirical research to suggest that individuals typically need around 10 years of experience in a specific field in order to become an expert in that subject (Ericsson & Smith, 1991). In a study by Chase & Simon (1973), it was found that, for a given

move, master chess players were able to more quickly recall the location of a greater number of chess pieces than were merely skilled players. However, the researchers were only able to replicate these results when showing the chess masters a configuration of chess pieces that would actually be seen in a chess game, rather than a chessboard with the pieces placed arbitrarily; if the pieces were placed arbitrarily, then the masters and the skilled players could recall the same number of pieces. After presenting the skilled players and the chess masters with numerous configurations and recording each player's ability to recall the configuration, the researchers concluded that a skilled player was able to recall roughly 1,000 configurations of chess pieces, but that chess masters could recall well over 10,000. The researchers then assumed that this advanced recognition was the direct result of the familiarization of these configurations, and that this familiarization required practice. The researchers argued that for any domain, practice was linked to skill, and that for chess players in particular, approximately 30,000 hours of practice were required to become a master (de Groot, 1978; Simon & Gilmartin, 1973; Chase & Simon, 1973; Ericsson & Smith, 1991; Chi, Glaser & Farr, 1988). If mastering an ability required at least 30,000 hours or 10 years of deliberate practice, then it would be extremely improbable to observe individuals who could develop an expertise in more than a handful of domains. Going further, if becoming a genius were predicated on one's level of expertise in a given field, then genius simply cannot be domain-general. It is highly unlikely that an individual would have the capacity to contribute anything of value to a field without first having a strong foundation of knowledge or talent.

## **A Neurological Perspective**

Recently, researchers have also used neurological studies to argue that genius is a domain-specific attribute. The brain has hemispheres with different compartmentalized functions associated with either side (Jason, 1983). In a study by Mashal, Faust, Hendler and Jung-Beeman (2007), an fMRI was used to analyze the neurological hemispheric activity of their subjects. The researchers gave each participant a variety of word pairs which would either be metaphorically related, literally related, or completely unrelated. Then, the subjects were tasked with deciding which of the categories best described each of the word pairings. By presenting each participant with a series of word pairings which were, in essence, familiar or novel, the participants could either draw on the established literal or conventional associations of each word pair, or would have to attempt to create a connection before categorizing each word pair respectively. For novel word pairs, fMRI scans revealed heightened activity in the right hemispheres of the participants' brains. The results of this study suggest that the right hemisphere of the brain is responsible for the production of creative thought and ideation (Mashal, Faust, Hendler & Jung-Beeman, 2007). However, neuroscientists acknowledge that creativity is not solely the product of the brain's right hemisphere.

In a separate study, Jason (1983) wanted to discern the function of the left hemisphere of the brain. To accomplish this, Jason selected 17 participants with lesions on their right hemisphere, and 15 participants with lesions on the left hemisphere. The researchers taught each participant a total of four hand gestures that they would need to repeat when prompted. The researchers would then ask the

participants to repeat the hand gestures, confirming that the participant had learned the gesture. The participants with a damaged left hemisphere struggled in this task significantly more than the participants with a damaged right hemisphere—participants with left hemisphere damage took approximately 50% longer to learn the gestures than did the participants with right hemisphere damage. The results of this experiment suggest that the left hemisphere is vital when it comes to remembering precise muscle movements as well as the general gathering and storing of information.

Furthermore, considering that mastering an ability generally requires 10 years of deliberate practice, the process of acquiring expertise may be associated with functional properties of the left hemisphere. The results of these studies suggest that both hemispheres are essential to creativity; the right hemisphere may be responsible for the production of creative ideas, whereas the left hemisphere could be responsible for the realization these thoughts (Kaufman, Kornilov, Bristol, Tan & Grigorenko, 2010).

Though evidence supporting the idea that genius is domain-general exists, the more compelling and comprehensive description of genius suggests it is most typically domain-specific. Current research supporting the notion that creative genius may be domain-general is based on samples of non-geniuses—therefore, it could be misleading to suggest that the results from these experiments can be extrapolated to creative geniuses. So while there may be people who are domain-general geniuses, these gifted individuals would represent the exception of an already miniscule subset of the population, not the rule. With this in mind, the artists that will be discussed

later in this thesis will only have had to contribute a profound value, as recognized by society, to the field of visual arts to qualify as a genius.

### **Historiometric Approach to Understanding Creativity**

Because creativity is often determined retroactively, it is very difficult to predict what will and what will not be considered creative in the future. Galileo's research was originally thought to be wrong and sinful, and Van Gogh's paintings were so unappreciated during his life that he had a notoriously difficult time selling any of them (De Batz, 1943). With this in mind, the historiometric approach is an extremely useful means of understanding the relationships and factors involved in creativity and creative production (Simonton, 1999).

There are two subcategories of historiography: nomothetic and ideographic. Nomothetic historiography focuses on the overarching, universal and generalizable aspects of human behavior. With the nomothetic approach, the idiosyncrasies of an individual are disregarded—the data related to an individual is aggregated into a sample, and then information from that sample is used to support or disprove a given hypothesis concerning the population. Conversely, the ideographic approach focuses on the specific attributes of an individual. Consequently, conclusions drawn from the ideographic approach are specific to a person, environment or time period, and therefore cannot be generalizable outside of this context (Simonton, 1984). For this thesis, the relationship between creative geniuses and mental disorders will be considered using both the nomothetic and ideographic approaches. The nomothetic

approach will be used to provide the foundational information that will serve as the basis of this thesis, whereas the ideographic approach will be used in the form of case studies, which will provide detailed, in-depth analyses of how an artist's mental disorder can contribute to or cause the artist to become a genius.

One of the preeminent theoretical frameworks for creativity, known as the 4 P Model of Creativity, considers creativity as it relates to the person, process, press and product (Rhodes, 1961). This theory will provide an organizational foundation for this thesis. Additionally, this theory can be used as a retroactive gauge of creativity. By analyzing the artists that will be discussed in later chapters of this thesis through the four dimensions of this theory, the purported creativity of these artists will either be supported or undermined by the established characteristics associated with creativity for each category. The following is a summary of the 4 P framework.

### **The 4 P Model of Creativity**

*The Creative Process:* The creative process, with regard to this theory, represents the way in which an individual accumulates knowledge, the perspective through which an individual views his/her environment, an individual's ability to effectively convey his/her thoughts, ideas and beliefs to others and an individual's source of motivation. Specific features of these mental processes can be used to predict creativity. It is assumed that creative processes enable an individual to create and develop novel and useful solutions or products (Rhodes, 1961). J.P. Guilford believed a fundamental component of an individual's creative process was an



individual's divergent thinking ability. Essentially, Guilford argued that a creative person would be better than a non-creative person at "[generating] information from given information" (Torrance, 1988). Guilford measured divergent thinking ability using four criteria: (i) fluency, (ii) flexibility, (iii) originality and (iv) elaboration. Fluency relates to the number of responses the individual is able to produce, flexibility is the number of different response categories, originality is the statistical rarity of the response, and elaboration is the level of depth and description of each response. However, Guilford recognized that there was more to the creative process than just a divergent thinking ability. He believed that two other cognitive abilities were also vital to the creative process: redefinition and sensitivity to problems. Redefinition relates to one's capacity to eschew functional fixedness and see uses for objects and concepts that belie their supposed function or scope. Redefinition also involves a proclivity to continually change one's perspective in an effort to identify solutions. The other ability, an innate sensitivity to problems, is important when it comes to jumpstarting the creative process because once a problem is identified, the individual can have the opportunity to derive a solution (Torrance, 1988). There are some attributes that are generally considered beneficial to the creative process, as Guilford suggests, though it should be acknowledged that creative processes by and large vary from individual to individual. Even so, many schools and universities exist for students to develop their creative processes (Stemler & Bebell, 2012).

There are many elements besides instruction that can impact these divergent thinking processes. The case studies in this thesis will explore how mental illness, as well as domain-specific expertise gained by practicing one's craft, can exert a

positive influence on creative processes. For example, a common characteristic of schizophrenia and bipolar disorder is a lack of latent inhibition—the ability to disregard previously introduced external stimuli (Baruch, Hemsley & Gray, 1988; Lloyd-Evans, Batey, Furnham & Columbus, 2006). This continual recognition of familiarized stimuli could contribute to one’s fluency; the more stimuli an individual can draw inspiration from, the more responses an individual should be able to come up with. Additionally, individuals with mental disorders typically engage in deviant behavior or experience deviant thoughts. Because those with mental disorders do not always adhere to norms of action or thought, this lack of behavioral and cognitive structure and rigidity could translate into the improved flexibility of one’s creative process. Those with mental disorders should also have an advantage in originality. Auditory and visual hallucinations can introduce new thoughts, ideas and perspectives. Manic episodes can contribute to the rate and variedness of one’s ideation. Disorganized thinking, a symptom commonly associated with schizophrenia, effectively removes the binds of convention, and facilitates one’s ability to think of ideas or connections that are not grounded in reality. Finally, the elaboration of ideas and concepts overlaps with the expertise and technical skills of each selected visual artist. As has been discussed, creativity involves not only the ability to think of and develop ideas that are both novel and useful, but also the means to implement them (Kaufman et al., 2010). This implementation requires deliberate practice, and because each selected visual artist is an expert in his field, each should be well equipped to realize these ideas on a canvas.

*The Creative Person:* Every individual represents a collection of attributes, traits, values and beliefs. In order to consider an individual creative, the characteristics of that person must facilitate creativity. Past research has found that there are some qualities of an individual that are highly correlated with creativity (Rhodes, 1961; Hastorf, 1997; Silvia, Nusbaum, Berg, Martin & O'Connor, 2009; Jung, Gasparovic, et al., 2009; Jung, Segall, et al., 2010; Jung, Grazioplene, Caprihan, Chavez & Haier, 2010). In the longest-running longitudinal study in the history of psychology, Lewis Terman analyzed 1,000 exceptionally intelligent children and examined the relationship between their I.Q. scores and their respective levels of creativity. Terman operationally defined creative achievement as the number of literary publications, artistic projects or organizations produced or developed by an individual. Terman concluded that roughly a third of those in his study with an I.Q. above 140 were creative, which was significantly higher than those with lower I.Q. scores; these results suggest that at least some degree of intelligence may be necessary to be creative (Rhodes, 1961; Hastorf, 1997). In another study, Silvia, Nusbaum, Berg, Martin and O'Connor (2009) examined which personality traits could predict creative ability. To do this, they gave a sample of 189 college students a Five Factor Inventory test to determine the personality characteristics of each participant. After completing this test, the sample was given a series of divergent thinking assessments. The personality profiles of the participants were correlated with each respective divergent thinking score, and the results of this experiment indicate that two personality characteristics in particular, openness to experience and extraversion, were strong predictors of creative ability. Though creativity is highly

correlated with intelligence, openness to experience and extraversion, it is worth reiterating that these studies were not able to determine if any of these attributes can be generalized as a cause of creativity.

Another dimension of the creative person worth exploring relates to the neurological properties associated with a creative mind. Though, for the most part, the neurological underpinnings involved in creativity are not fully understood, there are number of studies that have tried to identify the structural patterns and peculiarities of a creative brain (Jung, Gasparovic, Chavez, Flores, Smith, Caprihan & Yeo, 2009). In one study, researchers gave a sample of 61 young adults a series of divergent thinking tests, and then used an MRI to examine the structural properties of their brains. In this study, the researchers found that participants who scored higher on the divergent thinking tests were more likely to have less cortical thickness within some frontal and posterior cortical regions (Jung, Segall, Bockholt, Flores, Smith, Chavez & Haier, 2010).

In another study, a sample of 72 adults was given divergent thinking tests as well as a NEO-FFI personality test. The researchers posited that divergent thinking scores as well as one's openness to new experiences were correlated with creativity. Once these scores and metrics were established, the researchers used diffusion tensor imaging to examine the white matter integrity in fronto-striatal circuits in each participant's brain. The integrity of the white matter was determined by means of fractional anisotropy, which assessed the diffusion of water across bundles of axons. Because axons are longer lengthwise than they are widthwise, a collection of axons would need to be close, parallel to one another, and then coated in fatty myelin in

order to diffuse water effectively widthwise. Structural integrity was thus determined by the proximity and directionality (whether the axons were parallel to one another or not) of axons. The diffusion tensor imaging found that the participants who had higher scores on divergent thinking tests were more likely to have lower integrity in their left inferior frontal white matter. For participants who had were very open to new experiences, the researchers found that they were more likely to have lower integrity in their right inferior frontal white matter. Essentially, white matter integrity in the regions linking the thalamus to prefrontal cortices were significantly inversely correlated to divergent thinking scores and openness to new experiences (Jung, Grazioplene, Caprihan, Chavez & Haier, 2010).

In a third study, researchers sought to understand the relationship between neuronal health and creativity. To do this, they first had a sample of 56 fully healthy adults take a series of divergent thinking exercises. Once each participant's score was recorded, the researchers measured concentrations of N-acetyl-aspartate (NAA)—higher amounts of NAA would indicate strong neuronal health—by using magnetic resonance spectroscopy. The researchers found that both high levels of NAA in the right hemisphere gray matter and low levels of NAA in the right hemisphere gray matter strongly predicted creative ability (Jung, Gasparovic, Chavez, Flores, Smith, Caprihan & Yeo, 2009). The results of these three studies indicate that a disinhibited, left lateralized, and fronto-subcortical network of regions in the brain could be responsible for creativity (Kyaga, 2015).

*The Creative Press*: Also known as the creative environment, the creative press refers to the extent to which an individual's surroundings are conducive to creativity. Because every person is constantly perceiving and responding to external stimuli, it stands to reason that some stimuli might foster creativity and other stimuli may not. An environment or press does not have to be a physical presence; political or social climates can also contribute to or inhibit creative potential. However, every individual can perceive a given environment in a completely different way; it is for this reason that the effects of a specific creative press cannot be universal.

Certain attributes of a creative press, however, can be somewhat generalizable. According to current literature that discusses which environmental attributes are correlated with creativity, it is widely accepted that environments that foster intrinsic motivation, allow for the autonomy of decision, are devoid of external control, and provide social or emotional support will be more conducive to creativity than those that do not (Hennessey & Amabile, 1988; Kandler, Riemann, Angleitner, Spinath, Borkebau & Penke, 2016). Additionally, Guegan, Nelson and Lubart (2017) conducted a study to assess whether certain environmental characteristics contributed to one's creativity. In this study, 135 participants were evenly split into 3 groups: (i) a virtual creativity-conducive environment (CCE), (ii) a virtual control environment (VCE), and (iii) a real control environment (RCE), which the virtual control environment was based from. For the two virtual environments, participants were given computers with the video game *Second Life* (the environments were constructed using this video game). The VCE was designed as a replica of the RCE—the RCE was an empty conference room with drawn window shades. To determine

the design of the CCE, the researchers surveyed 160 college students (these individuals did not participate in the creative environment study), and included the most popular suggestions. The chosen elements for the CCE included large windows, views of nature, comfortable seating, and an expansive area to work. Each participant was given a divergent thinking test as they were given access to one of the three environments. The results of this study indicate that the participants in the CCE had marginally higher fluency scores ( $M = 18.58$ ;  $SD = 14.30$ ) compared to the VCE ( $M = 15.47$ ;  $SD = 8.46$ ) and RCE ( $M = 14.80$ ;  $SD = 5.64$ ). The participants in the CCE were significantly more original ( $M = 2.13$ ;  $SD = 2.16$ ) than they were in the VCE ( $M = 0.78$ ;  $SD = 1.28$ ) or RCE ( $M = 0.67$ ;  $SD = 0.98$ ). The participants in the CCE also scored higher in elaboration ( $M = 1.38$ ;  $SD = 0.39$ ) than did the participants in the VCE ( $M = 1.23$ ;  $SD = 0.19$ ) or RCE ( $M = 1.24$ ;  $SD = 0.50$ ). Finally, there was a negligible difference between the flexibility scores of the three groups. The results of this study suggest that certain elements, such as the aforementioned examples, may be capable of contributing to the divergent thinking ability of individuals.

*The Creative Product:* A product can be considered the manifestation of thought. Every invention or innovation, be it an item with commercial value or a scientific theorem, is the embodiment of some individual's thoughts and ingenuity and its interaction with the environment. This is why the creative product is typically measured when determining whether or not an individual is creative; the creative product is tangible (Rhodes, 1961). Because this thesis will evaluate the creative works of artists, a set of criteria for creative products must be established. Though

conceptions of what makes a product creative or not have evolved over time—in the 20<sup>th</sup> century, originality was especially valued (Rhodes, 1961)—the current widespread belief is that a product must be original, as well as useful, in order to be considered creative (Plucker, Beghetto & Dow, 2004).

Creative products are building blocks for the advancement of science and culture. In order for someone to be considered a creative genius, they must continually produce products that are not only creative, but also highly influential (Ludwig, 1995). Without Sir Isaac Newton's contributions to our understanding of the universe, Albert Einstein would have lacked the astronomical foundation necessary to develop his theory of Special Relativity. Chuck Berry's music was instrumental to the formation of Rock 'n' Roll, heavily influencing the distinctive sounds of The Beatles and The Rolling Stones. Picasso famously once said "good artists copy, great artists steal". In *Les Femmes d'Alger*, Picasso appropriated ancient African art as a means to create a groundbreaking visual analogy between what he considered to be a primitive culture and the primal nature of prostitution (Lomas, 1993).

It is important to note that assessing the originality, usefulness or influence of a given product is somewhat subjective; however, there are methods that aim to measure the creativity of a given product through as objective a means as possible. The most widely accepted methodology, the Consensual Assessment Technique (CAT), relies upon experts in the respective fields of each product to determine a product's degree of creativity (Amabile, 1982). The CAT assumes that experts, by definition, should be the most qualified to make judgments, and therefore are capable



of determining relative levels of creativity within their fields of expertise.

Additionally, because experts are those most knowledgeable about a given person or product's sphere of influence, expert judges can take this information into account when determining a person or product's degree of creativity (Kaufman & Baer, 2012). Now that the features of creativity have been established, the characteristics of mental illnesses must also be considered before the relationship between the two can be understood.

### **Chapter III: Understanding Mental Disorders**

Mental disorders, what are today referred to as psychopathology, are so vast that an entire diagnostic manual is required to distinguish among disorders (American Psychiatry Association, 2013). Broadly speaking, there are five categories of mental disorders: (i) personality disorders, (ii) anxiety disorders, (iii) mood disorders, (iv) eating disorders and (v) schizophrenia. Every one of these disorder types is sufficiently different, with regard to emotional and behavioral symptoms, that placing each in separate categories was necessary for diagnostic purposes. To further complicate matters, most individuals who have a mental disorder are comorbid, meaning that they can express a variety of symptoms across multiple categories. Further frustrating any attempt to neatly define psychopathology, certain behaviors can be considered pathological in one culture, context or time period but not in another.

For example, In the DSM-II, which was published in 1968, homosexuality was categorized as a mental disorder. In the DSM-III, it was reclassified as a “sexual orientation disturbance” (Spitzer, 1981). It was not until 1987, in the DSM-III-R, that homosexuality was removed entirely. These changes to the DSM classification of homosexuality coincided with a growing acceptance of non-heterosexual relationships in Western cultures. During the secularization of Western culture in the 19<sup>th</sup> century, religious tenets were transferred into legislation and behaviors viewed as sinful were re-categorized with scientific terminology. This is why “demonic possession, drunkenness, and sodomy” are now referred to as “insanity, alcoholism,

and homosexuality” (Drescher, 2015). However, though the language psychologists used to describe these behaviors changed, the religious-based belief that homosexuality in particular was immoral, aberrant, or could be cured remained. It was not until recently that psychologists finally acknowledged that classifying homosexuality as a mental disorder was erroneous and only served to reinforce anti-gay biases and stigmas (Drescher, 2015). Because cultural attitudes and perceptions largely determine which behaviors are considered pathological, we must be acutely aware of the possibility of ethnocentrism when determining which behaviors are and are not pathological, especially because these attitudes and perceptions change over time. When considering psychopathologies from different countries, ethnographically sensitive diagnoses are even more paramount; spatial distances, to a potentially greater degree than temporal differences, significantly affect culture, and by extension, what is and is not considered pathological. To illustrate the influence of spatial distance on culture, consider the following example.

In 1986, the Lord’s Resistance Army (LRA) attempted to overthrow the Ugandan government. Though the LRA was unsuccessful, it has continued to terrorize Northern Uganda and Central Africa for the past 32 years. This conflict has led to the displacement of millions of people, the kidnapping of tens of thousands of children to be used as soldiers, and the death or mutilation of thousands of people (Raffaele, 2005; Betancourt, Speelman, Onyango & Bolton, 2009). With so many people experiencing such horror and depravity, many of the Ugandans affected by this war have undoubtedly developed mental illnesses. In one study, Littman (2008) interviewed a sample of 390 Northern Ugandan children to ascertain whether

exposure to wartime stressors could lead to the development of posttraumatic stress disorder (PTSD) symptoms, and whether these symptoms were deviant within the culture and context of Northern Uganda. The results of this study found that while wartime stressors could lead to the development of PTSD symptoms—between 30-75% of the sample reported each symptom of PTSD—these symptoms were neither deviant nor dysfunctional given the culture and context of the sample. For the sample in this study, the presence of PTSD symptoms was not meaningfully related with the ability to fulfill social, work, school or community obligations.

In a similar study by Betancourt, Speelman, Onyango and Bolton (2009), a culture-specific assessment method, which involved both informal and structured interviews, was used to ascertain what kinds of symptoms the Ugandans were suffering from, and what forms of behavior were considered pathological within the context of their culture. Many mental illnesses closely resembled pathologies recognized by the Western world, such as anxiety, aggression and depression. However, many Ugandans were also suffering from *kumu* (an affective disorder that involves sitting and holding one's face in one's hands and not greeting others) and *par* or *ma lwor* (the primary symptoms of these mood disorders also involved the incapacity or lack of desire to greet others). None of these behaviors would be considered pathological in Western cultures—at most they would be seen as strange or slightly offensive—but even still, they were severe cause for concern in Northern Uganda.

## **Diagnostic Criteria**

If culture and context play such a large role in determining which behaviors are pathological, then three issues must be addressed in order to have an effective method of diagnosis: (i) an objective set of diagnostic criteria must be established, (ii) this diagnostic method must be culture-specific, (iii) a diagnosis must be retroactively applicable.

Currently, no single diagnostic model of psychopathology enjoys universal acceptance. Some psychologists believe that a behavior or symptom is pathological when it causes an individual to seek help, and others argue that statistically uncommon behaviors should be considered pathological (Oltmanns & Emery, 2015). The problem with the former approach is that not all individuals who experience mental disorders seek help or are even capable of acknowledging subjective discomfort. The issue with the latter approach that emphasizes statistical rarity is that there has not been a universally agreed upon frequency at which a behavior is considered abnormal, and this approach does not discriminate between behaviors that are physically or psychologically damaging and those that may be innocuous idiosyncrasies (Oltmanns & Emery, 2015).

The objective diagnostic criteria that will be used to determine whether behaviors and symptoms, as demonstrated by the artists featured in the case studies, are pathological will be drawn from Jerome Wakefield's *Harmful Dysfunction* model (1992). This model analyses behavior and symptoms in two dimensions to determine whether or not the behavior is pathological. The two dimensions are as follows:

(i) *Behavior Must be Harmful*: A behavior is considered harmful if it encumbers oneself or others from fulfilling social or occupational obligations and expectations. Additionally, if a behavior causes oneself or others to experience subjective distress, it can also be considered harmful.

(ii) *Behavior Must Indicate a Dysfunction*: A behavior is dysfunctional if it is a manifestation of an internal mechanism gone awry. In other words, if mental or physical functions no longer work properly, the behavior is the result. For example, mood disorders are the result of internal mechanisms no longer regulating emotion properly, and the auditory or visual hallucinations associated with schizophrenia occur when the psychological processes that differentiate the real from the imagined break down (Oltmanns & Emery, 2015).

A primary benefit of Wakefield's *Harmful Dysfunction* model is that it takes culture into account. In order for a behavior or symptom to be pathological, it must be harmful according to the respective culture or context (Oltmanns & Emery, 2015). Additionally, each case study in this thesis will examine well-known artists with extensive biographical information—this will be useful for understanding each artist's roles in their respective cultures and societies, and how they were able to or incapable of fulfilling their societally assigned roles and expectations.

## **Causes of Psychopathology**

For the majority of mental illnesses, their origins remain unknown.

Psychologists have discovered characteristics that correlate with specific mental illnesses (e.g., chemical imbalances in the brain are highly correlated with depression) but psychologists cannot yet accurately conclude the causality most of mental disorders (Oltmanns & Emery, 2015). Because creativity will be explored through the person, product, process and press (environment), understanding how each of these dimensions can serve to mitigate or exacerbate mental illnesses will provide a more comprehensive understanding of the relationship between psychopathology and creativity. This thesis will use an integrative biopsychosocial approach to examine how different aspects of creativity interact with mental illness. The approach used here will consider the biological factors involved in mental illness, such as genetics and brain chemistry, the psychological factors, the emotional state of an individual suffering from mental illness, and the social factors, which include relationships with others as well as the cultural stigmas in a given society. This approach has gained traction because it is grounded in systems theory, which is widely adopted in the sciences (Oltmanns & Emery, 2015).

## **Systems Theory**

Systems theory recognizes that mental illnesses can have a variety of causes, and that each factor contributing to the onset or sustenance of a mental disability can be reliant on other contributing factors as well (Oltmanns & Emery, 2015). For

example, if someone were to experience a panic attack, perhaps there were two factors that contributed to the onset of that attack: (i) the individual had a fear of failure and (ii) the individual had a math final that he/she did not have adequate time to prepare for. Systems theory acknowledges that neither the fear of failure nor the math test alone would likely cause a panic attack, but that the two factors working in conjunction may have a detrimental effect.

Holism, causality, and the development of mental disorders are all important concepts that are fundamental to systems theory. In a psychological context, holism is the concept that all aspects of an individual must be considered in order to gain a comprehensive understanding of the factors that may contribute to the onset and sustenance of a mental disorder. A holistic perspective of psychopathology considers not only the symptoms of the mental illness, but also the emotional state of the individual, the culture of the individual, the environment of the individual and so on. The holistic perspective enables us to explore the potential root cause of psychopathology rather than merely the way a mental illness is manifested or expressed (Oltmanns & Emery, 2015).

Because psychologists have yet to determine the exact cause for every mental disorder, psychologists must consider equifinality, multifinality, reciprocal causality and the diathesis-stress model (Oltmanns & Emery, 2015). Equifinality, in a psychopathological context, is the concept that there can be a variety of causes for a single mental disorder. For example, there are many ways that someone can break his/her arm—mental disorders should be viewed through a similar lens.



Contrasted to equifinality, multifinality is the idea that one event can lead to many different outcomes. For example, not every war veteran will suffer from post-traumatic stress disorder, and not everyone who fails a math class will experience depression. Whereas equifinality is used to consider the cause and multifinality is used to contemplate effect, the idea of reciprocal causality emphasizes the fluidity of cause and effect.

Does the artistic process cause artists to suffer from mental illnesses, or are people with mental illnesses drawn to be artists? This question is illustrative of reciprocal causality; psychologists must recognize that cause may actually be the effect, and vice versa. Finally, the diathesis-stress model considers that, in order for a mental illness to arise, there must be a diathesis and a stress, as the name suggests. A diathesis is a vulnerability or susceptibility to having the mental illness—a diathesis can be psychological, biological, or a combination of the two. A stress is an event or experience that has overwhelmed the susceptibility. This model also acknowledges that multiple stressors can correlate to more severe forms of mental illness, but not necessarily cause them (McCutcheon, 2006). Whereas these approaches to determining causality attempt to accurately identify the potential origins of abnormal and pathological behavior, the consideration of developmental psychopathology will help us better understand the history and progression of mental disorders.

## **Developmental Psychopathology**

Developmental psychopathology focuses on the ways in which behaviors, and also the perceived appropriateness and harmfulness of the behavior, evolves over time. Additionally, developmental psychopathology considers the social and environmental factors related to mental disorders. Like physical illnesses, mental disorders can also follow well-defined paths of development and remission—we know that minor depressive disorder lasts for roughly two weeks and that schizophrenia is currently incurable (Oltmanns & Emery, 2015). Unlike physical illnesses, behavioral symptoms must be deviant and distressful given an individual's stage of development in order to be pathological. For example, crying when hungry is completely normal and expected for infants, but would be an extremely disconcerting behavior for adults. It is worth reiterating that the social and environmental factors related to mental disorders may either be the cause of the mental disorder or a symptom of the mental disorder.

Yet, research has begun to identify distinct social and environmental variables that are highly correlated with mental disorders. Isolation, failure, subjective relative deprivation and poverty all are linked to lower mental health and higher rates of mental illness (Mushtaq, Shoib, Shah & Mushtaq, 2014; Zhang, Kong, Gao & Li, 2013; Mishra & Carleton, 2015; Murali & Oyebode, 2004). In a study conducted in India, researchers assessed the relationship between physical and subjective loneliness and mental disorders. In this study, participants took self-report loneliness scales and also listed which, if any, mental disorders they had. The results of this research found that depression, substance addiction, stress, and personality disorders

such as borderline personality disorder and schizoid personality disorder were all positively associated with high levels of loneliness (Mushtaq, Shoib, Shah & Mushtaq, 2014). In another study by Zhang, Kong, Gao and Li (2013), participants in rural China were interviewed about their aspirations, the reality of their situations, and their mental health. Of the 808 participants, the researchers deliberately selected 392 individuals who had already committed suicide to see if failure was a potential reason for their decision to end their lives. For participants who had committed suicide, at least two friends or relatives were interviewed as proxies. This study found that those who experienced the failure of an aspiration and those with a greater disparity between their aspirations and their reality were more likely to suffer from a mental disorder and were more likely to commit suicide. The researchers theorized that the emotional strains caused by failure or the likelihood of failure contributed to the onset of mental disorders and poor mental health.

The perception of failure is somewhat subjective; subjective relative deprivation is the human proclivity to judge personal welfare in the context of others. That is, regardless of how someone is doing based on independent criteria for success, individuals may judge themselves based on how those around them are doing, and as a result, believe that they are doing worse than they actually are. In order to measure the effect that subjective relative deprivation had on mental health, Mishra and Carleton (2015) gave self-reports to 328 participants in Canada. The researchers concluded that higher levels of subjective relative deprivation were highly correlated with poorer mental and physical health. In other words, people who engage in social comparisons are more likely to experience poor mental and physical health.

Relatedly, in order to determine the effect that poverty has on mental health, Murali and Oyebode (2004) conducted an epidemiological study in which participants took surveys that included questions concerning employment status, income, and mental health. This study found that those who were unemployed were roughly four times more likely to have a substance addiction, three times more likely to suffer from phobias or schizophrenia, and twice as likely to experience depression, anxiety or obsessive compulsive disorder. The researchers hypothesized that the loneliness and stresses associated with poverty were the key factors that explained this relationship. Those below the poverty line tend to not be accepted by the rest of society, which increases the subjective sense of loneliness, and stresses involved with poverty include emotional frustration and neglect as well as physical danger and distress.

## **Chapter IV: The Relationship Between Mental Disorders and Creativity**

On the surface, restricting an analysis of the relationship between mental disorders and creativity solely to visual artists may appear a somewhat arbitrary or self-limiting decision. Surely, the pool of eminent, creative individuals outside of the visual arts who also suffer from mental illness is deep. John Nash, a Nobel Prize winning mathematician and economist, famously suffered from schizophrenia. Robin Williams, an Oscar winning actor and celebrated comedian, suffered from depression and committed suicide in 2014. Temple Grandin, an animal scientist whose research has had a profound impact on the livestock industry, is autistic. There are simply too many eminent, creative individuals to list. This brings us back to the original question: why analyze solely the visual artists? There are two primary reasons for this decision: (i) the visual arts, as a profession, have an especially high rate of mental illness (Ludwig, 1998; Post, 1994). This means that there is a strong selection of exemplars, individuals whose lives and careers effectively convey the relationship between mental disorders and creativity, to choose from, and (ii) the nature of the visual arts, where a high value is placed on personal expression, lends itself to an examination of the influence of mental illness on the creative product. Because a painting can be a physical expression of the self, in ways that are more tangible than an economic theory or a means of slaughtering cattle, the paintings of eminent artists who suffer from mental disorders should provide a clearer picture of the relationship between mental illness and creativity.

## **Mental Disorders and the Creative Professions**

Examining the extent to which mental illnesses are prevalent in creative professions may be an effective means of illuminating the strength of the connection between psychopathology and creativity. It stands to reason that, if mental disorders can in fact contribute to creativity, there should be an especially high rate of individuals with mental disorders who are creative. However, current research predominantly focuses on the prevalence of mental disorders within the creative professions, rather than the prevalence of creativity for those with mental disorders. Though these two concepts are not congruent, understanding just how prevalent mental disorders are within the creative professions may still help illuminate the degree to which mental disorders are well suited for creative professions.

For example, Ludwig (1998) examined whether individuals in creative professions suffered from mental illnesses at a higher rate than individuals in less creative professions, and investigated whether there was a relationship between individuals with mental illnesses, regardless of the profession, and their creative achievements. In order to do this, information was compiled from over 1,000 biographies that were reviewed by the New York Times Book Review. The researchers recognized that because conceptions of creativity are subject to change, they would need to identify individuals whose creative accomplishments were undeniable. The researchers considered the following professions to be creative: architects, artists, musicians, composers, actors, directors, writers and poets. For this study, the researchers only included individuals who lived in the 20<sup>th</sup> century, came from a Western country, were deceased, and had at least one scholarly, well-

researched biographical source for the researchers to reference. To measure the creative achievement of each individual in this study, the researchers used a Creative Achievement Scale (CAS). This scale measured criteria such as the originality of each individual's work, the recognition each individual received for their work, how prolific each individual was during their respective careers, and the influence of each individual's work on his/her profession or society at large. Once the researchers computed each individual's CAS score, they then assessed whether each individual had suffered from a mental disorder at some point in their life. To do this, the researchers examined biographical information to determine whether each individual definitely, probably, or did not have a mental illness. Part of this determination included reviewing whether each individual received psychiatric treatment, had been diagnosed, or had disclosed or had been described as having symptoms. The researchers then examined the relationship among professions, CAS scores and psychopathology assessments and found that individuals in creative professions were significantly more likely to suffer from mental disorders, that members of creative professions were more likely to have more creative achievements, and that there was a strong correlation between mental illness and creative achievement.

Other studies have also found evidence of the relationship between creative professions and higher rates of mental illness. In one study, which was similar in methodology, Post (1994) used biographical information to determine the rates of mental illness across a variety of professions. Of the 291 highly eminent men that were analyzed, the researchers found that for visual artists and writers specifically, there were exceptionally higher rates of mental illness than compared to the general

population. The results of this study indicated that visual artists and writers were far more likely to suffer from alcoholism, depression, personality disorders, and to a lesser but still elevated degree, functional psychosis and schizophrenia. The researchers concluded that their results, taken together with similar findings from other studies, suggested that some mental disorders could positively impact the creativity of visual artists and writers.

### **Mental Disorders and Creative Production**

Many artists have reported that their creative output can either serve as a form of catharsis or a source of psychological torment (Ludwig, 1995). Examining this purported relationship between creative output and psychopathology may provide valuable insight as to why some artists are so prolific, and why some are plagued by pathological distress. According to an analysis of the results of the previously mentioned study (Ludwig 1998), There are two primary reasons why mental disorders can increase creative output: (i) they can spur bouts of inspiration or (ii) they can function as a source of motivation. When considering psychological disorders as a source of motivation to create, it is important to recognize the cathartic properties of creative expression and production. Empirical research suggests that artists, especially those suffering from depression, find that creative output is therapeutic and alleviates distressing symptoms (Ludwig, 1998). It is for this very reason--creative output has the capability of functioning as a therapeutic technique--that artists are



drawn to continue their creative production, becoming prolific in the process (Ludwig, 1995).

As a profession, the visual arts place a high value on personal expression. One of the reasons a painting can have such profound emotional effect on a viewer is specifically because the intimate thoughts and feelings of the artist expressed on a canvas can resonate with the viewer, either arousing empathy or sympathy. However, there are risks involved with expressing one's thoughts and emotions. Delving into unresolved personal conflicts or revisiting traumatic experiences that have not been properly processed can be the psychological equivalent of tearing off a bandage from a wound. Many people develop psychological defenses to protect themselves; the danger of using personal exploration as a component of the creative process is that these defenses can be undermined, damaged, or simply destroyed, creating severe psychological vulnerabilities. Additionally, creative output can be emotionally and psychologically exhausting. Struggling through creative blocks, being unsatisfied with the quality of one's work or failing to have the energy to continue a work can make an artist question his/her personal talent and sense of self worth. When there is an obstacle impeding the progress of an artwork, artists may resort to drug use, unhealthy dietary habits or negligent sleep schedules, which all may contribute to the onset or development of psychological disorders and distress (Ludwig, 1995).

Creative output can both fuel and diffuse psychopathological distress—it can turn into an endless cycle of mental and emotional agitation or serve as a source of comfort. Either way, the relationship between creative output and psychopathology may not be generalizable—every artist's creative process can be unique, and not all

artists begin their careers with psychological disorders or end their careers with them. This relationship has even been known to change throughout the course of an artist's career; it is entirely conceivable and plausible that creative output can be therapeutic for an artist at one point in his/her career and psychologically damaging at a different time. However, there are limits to this relationship, as extreme forms of psychological disorders, such as psychosis, tend to inhibit creative production (Ludwig, 1995).

### **Common Neurological Underpinnings of Mental Disorders and Creativity**

Jackson Pollock was a notorious drinker and suffered from alcoholism for much of his life. His drinking was also the cause of his death; while under the influence of alcohol, he drove his Oldsmobile convertible off the road, killing himself and a passenger. Pollock was adamant, however, that his alcoholism was beneficial to his creative production. He seldom drank while painting; he felt that doing so would be detrimental to the quality of his work. Rather, Pollock would drink to excess when he needed new ideas for his paintings. Many artists and writers, such as Jackson Pollock, John Cheever, John O'Hara and George Simenon believed that their alcoholism was essential to their creativity and allowed them to overcome creative "blocks". Though they all were able to remain creative during their periods of sobriety, this perception that alcoholism increased their level of creativity should not be completely disregarded—each had an intimate understanding of their respective creative processes and therefore their opinions remain valuable (Ludwig, 1995).

The notion that alcoholism, or even other mental disorders, can actually aid in the ideation period of the creative process has a neurological foundation. Dementia has been found to reduce the inhibitory systems within the brain that regulate creative thought, thus increasing the flow of new ideas. In a study by Mell, Howard and Miller (2003), the researchers analyzed the creative output of an accomplished artist who had developed frontotemporal dementia. The researchers noted that as the disease progressed and the artist lost her ability to perform executive functions and verbally communicate, her paintings became more original, as though a cognitive inhibitor had been removed.

In another study, Baruch, Hemsley and Gray (1988) hypothesized that because low levels of latent inhibition (the ability to disregard previously introduced external stimuli) are so highly correlated with schizophrenia, for healthy individuals, those who were more prone to psychosis would also demonstrate lower levels of latent inhibition. To perform this study, the researchers gave a sample of 53 healthy subjects a series of psychological tests including the Eysenck Personality scale, the Claridge's Schizotypy Traits assessment scale and Launay-Slade Hallucination Scale. Together, the researchers could use the information provided by these scales to separate their sample into a low and high psychosis-proneness groups. Once these groups were established, the researchers found that the group that was highly prone to psychosis exhibited much lower levels of latent inhibition than did the group that was less at risk of developing schizotypy symptoms.

In a literature review, Lloyd-Evans, Batey, Furnham and Columbus (2006) investigated the neurological markers of low latent inhibition. The researchers found

that, according to studies using neuroimaging methods, when samples of individuals with bipolar disorder experienced manic episodes, the activation of their frontal lobes was reduced, and they exhibited lower levels of latent inhibition. Conversely, these studies also found that when samples of individuals with bipolar disorder experienced depressed episodes, their frontal lobe activation increased, and this coincided with higher levels of latent inhibition. This literature review also investigated the link between reduced activation in the frontal lobes, and thus low levels of latent inhibition, and creativity. Studies involving the neuroimaging of highly creative and non-creative individuals show that those who are more creative exhibit lower levels of frontal lobe activation, and experience lower levels of latent inhibition. The researchers for this literature review acknowledged that, while an absolute, generalizable description of the relationship between creativity and bipolar disorder did not exist, the current literature suggests that the neural architecture associated with bipolar disorder can have positive effects on an individual's level of creativity.

In order to ascertain the white matter abnormalities of individuals suffering from bipolar disorder and schizophrenia, researchers in one study used diffusion tensor imaging to analyze the brains of a sample 108 adults (Sussman et al., 2009). This sample was split into three groups: one group had a family history of bipolar disorder, another group had a family history of schizophrenia, and the third group was a control. After scanning the brains of all three groups, the researchers found that, for the groups who had family histories of bipolar disorder and schizophrenia, participants were significantly more likely to have reduced white matter integrity in the anterior thalamic radiation, the anterior limb of the internal capsule, and within

the uncinate fasciculus than the control group. These results, compared to the results of a previously discussed study, in which the cortical thickness of frontal and posterior cortical regions was found to be reduced in individuals who were creative, demonstrate that lower levels of white matter integrity could be common to both creativity as well as schizophrenia and bipolar disorder (Jung, Grazioplene, Caprihan, Chavez & Haier, 2010; Sussman et al., 2009; Kyaga, 2015).

These studies all aim to examine the potential connections between mental illnesses and mental disorders. The progression of dementia has been shown to correspond to increases in originality (Mell, Howard & Miller, 2003). Research suggests that those prone to schizophrenia or bipolar disorder, as well as those who have either disorder, have lower levels of latent inhibition, which is associated with higher levels of creativity (Baruch et al., 1988; Lloyd-Evans et al., 2006). Even the neural architecture of those with schizophrenia may share common features with the neural architecture related to creativity (Sussman et al., 2009; Jung, Grazioplene et al., 2010; Kyaga, 2015). The results of this research suggest that there is a relationship, at least associative if not causal, between mental illness and underlying creative processes.

## **Chapter V: Methodology**

Three artists have been selected for this thesis, and their lives and careers will be explored and analyzed through case studies. The three selected artists include Vincent van Gogh, Edvard Munch, and Michelangelo Merisi da Caravaggio.

### **Artist Selection**

The Consensual Assessment Technique (CAT) uses a series of expert judges to determine the degree of creativity of a person or product, and they do so by using their vast pool of knowledge to assess a person or product's originality, usefulness and influence. With this in mind, the curation of art exhibitions can be seen as an example of a CAT. Curators of art museum are experts in their field, and their decisions to include specific artists or artworks within their gallery space can be considered their acceptance or acknowledgement of an artist or artwork's creativity. Every artist included in this thesis has been featured in likely hundreds, if not thousands, of exhibitions within the most famous and well-respected art museums and art institutions in the world—this criterion ensures that each artist, and the artwork that they have produced, is widely accepted as creative.

In addition, each selected artist must have a well-known and well-documented history of pathological behavior, and the presence of these pathological behaviors and symptoms must be irrefutable. To ensure the irrefutability of the pathological nature of each artist's respective behaviors and symptoms, this thesis will consider Jerome

Wakefield's *Harmful Dysfunction* model (1992). Each artist included in this thesis was recognized during their lives as exhibiting aberrant and harmful behaviors: Vincent van Gogh and Edvard Munch both experienced symptoms severe and distressing enough to warrant institutionalization, and Michelangelo Merisi da Caravaggio was arrested, imprisoned and thrust into poverty multiple times because of his excessive aggressive, hostile and impulsive behavior.

### **Purpose and Objective of Case Studies**

Each case study will include biographical information involving each respective artist's personal life and career. These biographies will be organized chronologically, and will focus on the major events or recurring themes of each artist's life. This biographical information will be analyzed through a psychological lens. The ways in which each artist's personal life and career intersects with their respective psychopathologies will be discussed, and insights into artistic decisions, and the ways that their psychopathologies contributed to their creativity, will be described. To do this, each study will review primary accounts (written statements from the artists or contemporary biographers' records) to determine which pathological behaviors each artist exhibited, and how these behaviors influenced their work in a positive way. Additionally, modern research regarding creativity, including how it is manifested and its correlates, will be applied to this biographical information.

Because each artist, and the work that they have produced, is recognized as creative, these case studies will examine the relationship between each artist's symptoms of psychopathology and their creativity. Though these case studies will illustrate the pain and suffering that mental illness and pathological behaviors can cause, they will also focus on how mental illnesses and pathological behaviors were able to advance each artist's career, and ultimately reward society with truly remarkable, groundbreaking art.



## Chapter VI: Vincent Van Gogh

### Life and Career

Vincent Van Gogh's life was as tragic as it was famous (Colin, 1926; Piérard & Garland, 1925; Kendall, Van Heugten & Stolwijk, 2015; De Batz, 1943). Born in 1853 in Zundert, The Netherlands, Van Gogh was drawn to the art world from an early age. His uncle was a picture dealer and encouraged Van Gogh to join the business after graduating from high school. Van Gogh obliged even though this was not his true passion, and after working as a picture dealer for a few years, began honing his craft as an artist.

However, Van Gogh's psychological well being was strained as early as 1874, when a woman named Ursula, whom Van Gogh was deeply in love with, continually refused his persistent marriage proposals. Though Van Gogh always had a fragile psychological state, his rejected marriage proposals to Ursula were reportedly a turning point. He was never quite able to get over this rejection, and even as a youth, his parents feared that Van Gogh was lonely and secluded.

Distraught and heartbroken by Ursula's rejection, Van Gogh left his job later that year. Van Gogh's younger brother Theo, who was a perennial source of comfort, solace and support, was deeply disturbed by Vincent's emotional state. Because Van Gogh's family was impoverished, Van Gogh had to keep working, even though he went through a prolonged period of either quitting or getting fired from his jobs. Van Gogh's family eventually decided that Vincent should attend the University of Amsterdam rather than go from one meaningless, unsatisfying job to another.

Van Gogh was not sent to University to make art, but even so, he continued to practice drawing in his spare time. In 1878, Van Gogh dropped out of school and decided to become a preacher, believing that he could provide spiritual fulfillment to those who were suffering from sickness or living in abject poverty. This effort, while undertaken with good intentions, was unsuccessful. Van Gogh's unsightly and unkempt appearance, peculiar behavior, and inability to connect with his audience forced the evangelical committee to formally reprimand him. Sensing that he would not be able to fulfill his dream of becoming a preacher, Van Gogh fell into yet another deep state of depression. During this bout of depression, Van Gogh engaged in harmful behavior such as starving himself, wearing few layers in the cold weather so that he would be more uncomfortable, and sleeping on the floor so he would not be able to sleep as well. Later, Van Gogh would also beat himself with sticks (Colin, 1926).

Just one year after dropping out of school, Van Gogh gave up his preaching aspirations and became a drifter. During this time, Van Gogh would exchange his drawings for food and shelter. In 1880, with the support of his brother Theo, Vincent finally decided to become an artist and went to an art school. However, Van Gogh also struggled as an art student. During this time, he visited his cousin Mauve, who was a respected artist, but had difficulty maintaining a relationship with him. On one occasion, Mauve asked Van Gogh to make a copy of a cast that he had already made, but Van Gogh, experiencing a fit of anger, threw the cast on the floor instead.

Nevertheless, Theo remained fully supportive of Vincent's art career; he provided Vincent with supplies and materials and always encouraged Vincent whenever Vincent was distraught or discouraged with his work. Theo also gave Vincent free reign with his work—even though Theo funded Vincent's career, Theo never criticized Vincent's art or countered Vincent's creative ideas. The two brothers viewed Vincent's art as the primary means through which they could express themselves.

However, Vincent's financial and emotional dependence on Theo was unhealthy at times. When the money that Theo sent to Vincent arrived late, Vincent would experience extreme anxiety and panic attacks. He would threaten Theo and claim that his symptoms of mental disorders would worsen if he did not receive the money on time. Vincent wrote to Theo that “all the worry and troubling over [his] drawings is hard enough... if [he] had too many other cares... [he would] lose [his] head” (Naifeh & Smith, 2011). Though Van Gogh made these declarations about his mental health, when he would receive money from Theo, he would often spend it on alcohol, frequently bingeing on wine, cognac and eventually absinthe. Theo was a capable support system but Vincent still lived through bouts of impoverishment due to his impulsivity, which effectively rendered him incapable of responsibly managing his finances.

In 1883, Van Gogh moved to Nuenen, which he described as “mournful”. The impoverished peasants who lived in Nuenen became a source of fascination for Van Gogh, and so their lives and their struggles became the subject of some of his paintings. He decided to leave Nuenen in 1885 when his father passed away. Van

Gogh was working inside of a church at the time, and because the church was not accommodating to Van Gogh's models, he figured that he could find a work space that better suited his needs elsewhere. He landed in Antwerp, Belgium, and was able to study some of Peter Paul Rubens' work, and view some Japanese prints. The vibrant colors Rubens used in his paintings inspired Van Gogh to use a brighter color palette, and the pictorial elements of the Japanese prints interested Van Gogh. However, Van Gogh moved yet again in 1886 to live in Paris to avoid the constant criticisms of the art professors at nearby universities.

In Paris, Van Gogh worked in Fernand Cormon's studio. Cormon was well known in the salons in Paris, and Van Gogh was able to improve his artistic talent under Cormon's guidance. While in Paris, Van Gogh met numerous artists including Paul Gauguin, Georges Seurat, Henri de Toulouse-Lautrec, Paul Signac and Emile Bernard, who became a close personal friend. Though these artists were his friends, Van Gogh did not last long in Paris. He was convinced that he could find a more beautiful sky, and more vibrant colors outside of the city, so in 1888, he moved to Arles, France.

In Arles, Van Gogh was especially productive. He was struck by the beauty of nature, and frequently chose to paint outside. He rented place Lamartine—a small, white studio—for when he needed to paint indoors. After living in Arles for some time, Vincent thought he could be more productive and make more creative work if he lived in close proximity with the artists that he had met in Paris. This dream was never realized, and so Van Gogh continued to work alone. Though Van Gogh did not live with the artists he met in Paris, they did have a lasting influence on his work; Van

Gogh incorporated the Impressionist style into his work after his time in Paris. In a bid to achieve financial success, which had eluded Van Gogh the entirety of his career, Vincent tried to convince Theo to help him make an association for the Impressionists. This idea also never materialized, and Van Gogh continued to be frustrated by his lack of financial success.

While Van Gogh was especially productive in Arles, having produced over 200 paintings before his psychological well being rapidly deteriorated, he maintained an exceedingly unhealthy diet. Van Gogh did not always have enough money to properly feed himself, and so in Arles he would frequently have excessive amounts of coffee along with bread and alcohol for nourishment. Van Gogh's workspace and living space was also extremely disorganized. During a visit in 1888, Gauguin noted Van Gogh's disturbing untidiness. Van Gogh also became extremely emotionally sensitive; he felt abandoned when Theo announced his engagement, and felt utterly betrayed and isolated when his friend, Paul Gauguin, wanted to leave Arles. It was during Gauguin's visit to Arles that Van Gogh notoriously sliced off his own ear. During this fit of delirium, Van Gogh tried to find Gauguin so that he could give Gauguin the severed ear, a clear indication of the pain that Gauguin had caused him.

In the day preceding this event, Gauguin notes that he and Van Gogh had been quarreling and that Van Gogh even threw the glass of absinthe he had been drinking at Gauguin in a fit of fury. The next morning, Van Gogh reportedly apologized for this outburst. Gauguin, however, was deeply disturbed by Van Gogh's behavior, and told Van Gogh that he was going to leave for Paris. Though this aspect of Gauguin's story has never been verified, Van Gogh ostensibly became so enraged that Gauguin

was leaving him that Van Gogh considered attacking Gauguin in the street with a razor, but at the last moment decided against it. Later that night, Van Gogh locked himself in his room and used the razor to cut off his right ear. He then put his severed ear in an envelope and went off looking for Gauguin. Unable to find him, Van Gogh suspected that he was at a nearby brothel. Rather than go inside, Van Gogh decided to deliver the envelope to a woman who worked at the brothel, hoping that she would pass it along to Gauguin.

After this episode, Van Gogh was sent to a mental asylum in St. Remy. He was especially prolific in this new setting and painted roughly 150 paintings during the year he was institutionalized. In his writings to Theo, Vincent expressed that his passion for painting was the strongest it had ever been. But while Van Gogh's mental health was in a precarious state before entering the asylum, it deteriorated significantly after he cut off his ear. Van Gogh's behavior and cognitions became increasingly erratic. His "fits" were also becoming more frequent, however he was able to remain lucid in between these episodes. Theo wanted to move Vincent out of St. Remy because he thought it was detrimental to his psychological health. In 1890, Van Gogh moved one last time; he was to be treated by Dr. Gachet in Auvers-sur-Oise, France.

Van Gogh only lived in Auvers-sur-Oise for two months, but in this span, he remained extraordinarily prolific making a painting almost every day. Though he spent most of his time painting, his symptoms grew worse. He became increasingly aggressive and depressed, and on July 27<sup>th</sup>, 1890, at the age of 37, Van Gogh shot himself in the heart. The bullet ricocheted off of one of Van Gogh's ribs, so he did

not die immediately. Theo was able to visit Vincent one last time. Vincent's last words were reportedly "the sadness will last forever" (De Batz, 1943).

## Chapter VII: Edvard Munch

### Life and Career

Perhaps no other artist is as well known for an artistic depiction of mental illness as Edvard Munch (Howe, 2001; Clarke, 2009; Hodin, 1972). Munch was also the first to acknowledge his anxiety and depression. He once wrote, “this fear of life has raged in me since the thought entered my mind. Just like the sickness I have had from the beginning of my life... Nevertheless, it often seems to me that I am dependent upon this fear of life—it is necessary to me—and that I would not want to be without it. I often feel that my illnesses have also been necessary. In the periods without the fear of life, and without illness, I have felt like a ship sailing in a strong wind, but without a rudder” (Tøjner, 2001). Creator of *The Scream* series of paintings and lithographs, Munch experienced devastating loss at an early age. Born in 1863 near Løten in Norway, Munch lost his mother to tuberculosis when he was 4 years old. His sister Sophie died of tuberculosis when Munch was only 12. Munch never recovered from the death of his mother and especially the death of his sister; he famously said that “sickness, insanity and death were the angels that surrounded my cradle and they have followed me throughout my life” (Clarke, 2009; Sussman, 2007). Later in life, Munch created numerous paintings, including his *Death in the Sickroom*, *The Dead Mother* and *The Sick Child*, which revisited the deaths of his mother and sister. It was Sophie’s death, however, that arguably had the more profoundly devastating impact on Munch’s psyche; Munch had first contracted



tuberculosis and later passed it on to Sophie. Munch carried this sense of guilt for the death of his sister for the rest of his life (Howe, 2001).

In 1879, Munch enrolled in the Royal Technical College and trained to become an architect. Soon after, Munch decided to pursue painting instead of architecture and transferred to the Royal School of Design. In 1882, Munch rented studio space in the Pultosten building, which also contained the studios of artists Fritz Thaulow, Erik Werenskiold and Christian Krohg. While Munch rented space in the Pultosten building, Krohg trained Munch and edited Munch's work. Munch later attended Thaulow's Open-Air Academy. Located in Modum, Norway, this Academy was essentially an outdoor studio space with a French-inspired ambiance.

Another source of influence for Munch during his youth was Kristiana's Bohemians. Spearheaded by Hans Jaeger, this group of individuals comprised largely of Norwegian artists and writers in Kristiana—now the city of Oslo—who shared radical, anarchistic and nihilistic beliefs and viewpoints. Munch befriended Jaeger in the 1880's and associated himself with the Kristiana Bohemians, but never fully embraced their perspective of the world. Munch was fully invested in his work and did not want to commit to a singular group. Some of Jaeger's ideas, such as his strong belief that parents should be deliberately disparaged, were incongruous with Munch, who had developed especially strong familial ties as a result of the death of his mother and sister. Though these ideas deeply disturbed Munch, he still appreciated the creative, original and intellectual minds of the Kristiana Bohemians and the Kristiana Bohemians became a recurring theme in Munch's work for the rest of his life. However, Munch's father did not approve of Munch's relationship with Jaeger

and the Bohemian lifestyle in general, and this contention produced a strain on Munch's relationship with his father. Additionally, it was during this time that Munch began drinking to excess, although Munch's drinking became increasingly problematic later on in his life. Nevertheless, Munch always deeply respected Jaeger, and it was Jaeger who encouraged Munch to express his feelings of loss, suffering and anxiety through his art (Howe, 2001).

In 1885, Munch travelled to Paris by invitation of Fritz Thaulow. Thaulow had tried to have Munch visit Paris earlier, but Munch had contracted rheumatic fever and was unable to come. Once in Paris, Munch studied at the Musée du Louvre, however he would return to Paris repeatedly and began experimenting with various artistic styles, such as naturalism, impressionism, plein-air and symbolism. Munch once wrote, "Salvation shall come from Symbolism... an art where the artist submits reality to his rule, which places mood and thought above everything and only uses reality as a symbol" (Howe, 2001). This desire to effectively convey his thoughts, feelings and desires in an affective and visceral manner led to Munch's development of the Expressionist style.

It was around this time that Munch met Milly Thaulow, the wife of one of Fritz Thaulow's relatives. Munch quickly became infatuated with Milly and the two started having an affair. Milly became an artistic muse for Munch—during this affair, he would explore themes of eroticism and sexuality in his paintings. However, the affair also caused Munch tremendous emotional and psychological pain. Munch's father was an extremely religious man. Munch understood that participating in adultery was religiously and ethically wrong, so even though he was deeply in love

with Milly, he suffered through this internal conflict throughout their relationship (Clarke, 2009).

During the late 1880s to early 1890s, Munch spent most of his time training and traveling between Norway and France. He began gaining notoriety during this time and he was able to exhibit some of his paintings in Kristiana. His work was largely considered too daring for the Norwegian art scene, which preferred more conservative artistic styles and subject matters at the time, rather than Munch's highly expressive and morbid work. Munch also began visiting Aagaardstrand during the summers, and this is where he later spent time with Milly before their tumultuous relationship ended. Munch's studio in Aagaardstrand, much like the studios Munch used later in his career, served as places of refuge where Munch felt that he could explore his inner thoughts and his chronic emotional pain. His small studio in Aagaardstrand was next to the coast, and this idyllic setting also provided Munch with a beautiful landscape that he could paint (Howe, 2001).

Munch learned that his father had died while visiting Paris in 1889. This news rendered Munch completely distraught, and initially, he was unable to bring himself to paint because he was so despondent. The death of his father forced Munch to confront the deaths of his sister and mother yet again, and Munch was overwhelmed by feelings of loss. However, Munch later funneled this pain into his art, and used painting as a means of processing his loss. In his *Frieze of Life*, Munch used a series of paintings to describe, to himself and his audience, his life, and how his experiences have shaped him.

In the mid-1890s, as Munch became increasingly established as a painter, Munch moved to Berlin. Once he was settled, Munch befriended a group of avant-garde, Bohemian writers and artists. His time in Germany, and the friendships he made, further aided in the development of the Expressionist style that Munch helped to pioneer. As Munch grew closer to Expressionism, his paintings were so powerful, personal, and instrumental in helping Munch make sense of his life, that there was a period in which he struggled to sell any of his work because he was so emotionally attached to it. It was due to this excessive attachment that Munch began making prints—the reason being that Munch could sell his work and have the comfort of holding onto his original woodcuts.

After Munch's father had died and Munch began experimenting with increasingly expressive artistic styles, Munch began focusing his paintings on themes of melancholy in the 1890s. Munch had a deep well of unresolved inner trauma to draw from, and his sister Laura's hospitalization for depression and mental breakdowns during this time further exacerbated Munch's tormented mind. The melancholic, deeply contemplative paintings and prints produced by Munch at this time may have been somewhat influenced by Max Klinger's work in the 1880s, which focused on surreal depictions of death. Munch's melancholic paintings were usually set at night, and included a character—presumably Munch himself—physically isolated from the rest of humanity, engulfed in quiet, painful, pensive thought. The colors Munch chose for his paintings were becoming less based on reality, and more so on the connotations of emotion assigned to each. Munch thought that he could more effectively convey his thoughts and feelings through color as well

as subject matter. It was during this period in Munch's life that he created his most famous series, *The Scream*.

Munch began painting *The Scream* series in 1893, which coincided with Laura's hospitalization and was around the time that he was creating his *Frieze of Life*. His mind was consumed by sadness, guilt, anxiety and loneliness. It was within this context that Munch found himself walking along a road in Oslo and "felt as though the whole of nature was screaming" (Howe, 2001). These paintings depict a thin, elongated figure with its hands on either side of its face, its eyes gaping open, and mouth bellowing a scream. Munch acknowledged at the time that these deeply disturbing images could symbolize his own psychopathology, and even wrote a note on one of these paintings that read, "Can only have been painted by a madman" (Howe, 2001). As with many of his paintings at the time, Munch constructed *The Scream* series so it would deliberately accommodate the interpretations and perspectives of its viewers. Munch was fascinated by the parallels of music and art— notably how both are capable of expressing emotion by arousing the empathy of an audience—and did not want his paintings to be restricted by convention or preconceived notions. *The Scream* was drawn from Munch's mind and the emotions he felt on his walk that day, but this desire to eschew the resoluteness of a narrative in an effort to connect with his viewership enabled Munch to create a series that was exceptionally emotional and visceral. Munch's suffering was the fuel for his work; however, there were periods in his life when his pain proved too much to bear.

In 1895, as Munch was concluding his *Scream* series, his brother Andreas died. Shortly after, he began a relationship with Tulla Larsen, the second love of his

life, after Milly Thaulow. As he did with Milly, Munch used Larsen as a muse. Munch and Larsen traveled throughout Europe, and as they grew closer, Larsen began suggesting that they should marry, which frightened and upset Munch. Munch believed that he would lose his individuality if he were to marry, and so he became increasingly nervous and wary of Larsen. Munch's relationship with Larsen grew extremely unstable and unhealthy—their heated fights became frequent and brutal—Munch first tried to end the relationship in 1900. Munch's mental health deteriorated to such a degree that he was voluntarily institutionalized briefly that same year for mental exhaustion, panic attacks and alcoholism. Nevertheless, the relationship persisted to some degree until 1902, when, in another attempt to separate from Larsen, Munch deliberately shot himself in the left hand while they quarreled. The bullet nearly severed a finger, but Munch was still able to paint. In fact, Munch's paintings at the time, which focused on femininity, were some of his first to initially receive critical acclaim. The public, however, remained perturbed by Munch's work.

In the following years, Munch continually traveled between Norway, France and Germany, and in 1903, joined Société des Artistes Indépendants in Paris, which exhibited the works of many celebrated European artists throughout the late 19<sup>th</sup> and early 20<sup>th</sup> century. Munch's work continued to garner recognition, however Munch's mental health remained in a precarious state. In 1905, Munch once again voluntarily admitted himself into a mental institution for anxiety and alcoholism. Though he was institutionalized for half a year, he still experienced symptoms upon his release. Finally, in 1908, Munch admitted himself into Dr. Daniel Jacobson's clinic in Copenhagen, where he received therapy for 8 months. Coincidentally, it was during

this time that Munch's work finally garnered widespread acceptance and appreciation; Munch's longtime friend and supporter Jens Thiis, who happened to be the director of the National Gallery in Norway, decided to permanently exhibit some of Munch's work, and Rasmus Meyer, a famous art collector, also purchased some of Munch's art. It was also during 1908 that Munch received Norway's Royal Order of Saint Olav, which was an honor granted by the King of Norway and was given to those who had a profound beneficial impact on Norway and the world at large. Munch continued to receive accolades during this time—in 1911 he won the prestigious Aula competition and was subsequently chosen to produce art for the Aula, an assembly hall in the University of Oslo. In 1912, Munch was honored at the seminal Sunderbund exhibition in Cologne.

Munch's mental state finally showed signs of improvement. This appreciation for his art translated into financial security for Munch, and the treatment he received in Copenhagen had a positive impact on Munch's outlook and psychological stability. While Munch would still occasionally experience extreme bouts of anxiety and depression, his paintings became noticeably less morbid during this time.

In 1916, Munch bought a house in Ekely, which was close to Kristiana. Because World War I was underway, Munch limited his travel until 1918 but remained committed to the art world and tried funding German artists during this time. After the war, Munch would again travel to and from Berlin and Paris. When he was not abroad, however, Munch would spend most of his time until his death at his house in Ekely, living almost exclusively in solitude. For the next couple of decades, Munch would invite female models to this house to paint them, and would

occasionally receive commissions. Though the latter portion of Munch's life was more stable relative to his youth, Munch would still experience loss and heartbreak. In 1926, his sister Laura, who suffered from what was believed to be a schizoaffective disorder, passed away. In 1931, Munch's aunt Karen, who assumed a motherly role in Munch's life after his own mother died, also died. When the Nazis began destroying art and other cultural artifacts they deemed incongruous with the principles of their regime, 82 of Munch's paintings housed in German museums were sold. Fortunately, however, these works were transferred to Norway around 1937 and remained under protection until the end of the war. In 1944, at the age of 80, Munch died in his Ekely home. In his will, he left the rest of his life's work to Kristiana, which included over 20,000 works of art and thousands more letters and documents (Clarke, 2009).



## Chapter VIII: Michelangelo Merisi da Caravaggio

### Life and Career

Michelangelo Merisi da Caravaggio, better known simply as Caravaggio, made a career of depicting grotesque brutality and aggression, themes that resonated deeply with his own life, and ultimately contributed to his early death (Graham-Dixon, 2010; Ebert-Schifferer, 2012; Sgarbi, 2007). Born in 1571, it is unclear whether Michelangelo Merisi da Caravaggio was actually born in Caravaggio as his name suggests, which was where his mother owned property and his father worked as a superintendent and mason, or Milan, where his other three siblings were born and his family spent much time during his youth. Regardless, for much of his youth, Caravaggio lived in Milan.

Caravaggio's childhood was not a happy one. Shortly after Caravaggio's sixth birthday, his father and grandfather died after an outbreak of the bubonic plague ravaged their neighborhood. With his family lacking any source of income, Caravaggio's struggles with money began at an early age. Caravaggio's first real opportunity for a better life came in 1584, when he became the apprentice for Simone Peterzano, a Milanese artist who had purportedly trained under Titian. Caravaggio spent as many as four years working under Peterzano, however, it is unclear how much of Peterzano's teachings Caravaggio retained. Caravaggio's earliest surviving paintings, which come four years after Caravaggio concluded his apprenticeship, showed promise, but were rather unpolished and unrefined. Though Caravaggio's contract stipulated that, as an apprentice, he would spend most of his time studying

and honing his craft, the quality of Caravaggio's earliest paintings suggests that Caravaggio was a rather poor student. Even at an early age, Caravaggio was known to be aggressive and hostile, and would frequently disappear for days at a time. These qualities help explain why Caravaggio may have absorbed little from his time working under Peterzano. However, examining Caravaggio's early work reveals that he very quickly transformed from an unrefined yet promising artist to a prodigy with a wholly original artistic style. This indicates that Peterzano may have taught Caravaggio the fundamental technical aspects of painting, but was not able to instill his pupil with conventional artistic techniques. Caravaggio's lack of conventional artistic technique, or rather, the fact that he was unencumbered by them, may have facilitated his later development of his unique artistic style (Graham-Dixon, 2010). In this way, the incompatibility of Caravaggio's mercurial and aggressive nature with his role as a student may have ultimately been beneficial to Caravaggio's career.

Shortly before Caravaggio completed his apprenticeship, his youngest brother passed away. After Caravaggio had finished his apprenticeship, he left Milan and briefly returned to Caravaggio to sell the real estate that he had inherited, and yet, unbeknownst to him, his mother had also taken ill. It took Caravaggio roughly two years to sell all of his land, and by the time he was finished, his mother had passed.

The sale of his land provided Caravaggio with some degree of financial security, however, this was to be short-lived. Once the land was sold, Caravaggio returned to Milan, which at the time was reeling from rising crime. Even as a teenager, Caravaggio's severe temper was problematic, and he had multiple run-ins with the Milanese police. According to primary accounts, Caravaggio may have spent

a year in prison for either murdering someone or being an accomplice to a murder; selling the properties may have been a way for Caravaggio to pay off the fine that he would have incurred in addition to his prison sentence (Sgarbi, 2007). Whatever the actual reason behind Caravaggio's decision to sell his land may be, when Caravaggio left Milan to settle in Rome at the age of 21, he was broke once again.

Once in Rome, Caravaggio's artistic talent became increasingly recognized. Caravaggio's first patron in Rome was a cleric named Pandolfi Pucci. Pucci did not pay or feed Caravaggio well, but Caravaggio gained notoriety quickly enough that this patronage was relatively brief. In 1593, Caravaggio began working for Cavaliere d'Arpino, who was one of Pope Clement VIII's favorite artists. This job also did not last for long; Caravaggio left the workshop after only eight months. Caravaggio's break from d'Arpino enabled Caravaggio to further evolve his artistic style.

Toward the end of the 16<sup>th</sup> century, Mannerism, an artistic style which eschewed naturalism and was associated with the exaggeration and elongation of the human figure, was in vogue. Caravaggio's unique, realistic and naturalistic painting style was in direct opposition to that of his contemporaries. Caravaggio was known for wearing fine clothing, but would refuse to take it off until his clothes were completely ripped and decayed; his overall indifference towards and rejection of social and cultural conventions was clearly mirrored in his art. Caravaggio's artistic style was more an innovation of the Renaissance style, the precedent to Mannerism. However, while the Renaissance style valued naturalism, Caravaggio wanted his work to become as real and relatable as possible. To do so, he initially tried to depict religious narratives as realistically as possible—his painting of *Bacchus* portrays the

miniscule bubbles of recently poured wine and the dirtiness of the God of wine's fingernails—but after his time with d'Arpino, Caravaggio decided to depict his sacred and religious subjects by drawing inspiration from the ordinary and profane.

In Rome, Caravaggio was surrounded by destitution, misery and crime; Caravaggio wanted his paintings to reflect his environment. He decided to recruit the homeless, the poor, prostitutes and even those he found off the street to model for his paintings. But these models, more than just visually represent the sacred or holy characters that Caravaggio would frequently paint, would effectively *be* the characters themselves. In essence, though these individuals would model for particular characters, the characters that Caravaggio would paint had the same idiosyncrasies, demeanors and expressions of the actual individuals who would model for him.

Caravaggio's intense naturalism was an effective and accurate means of expressing his own reality. The settings and characters he painted were drawn from those he surrounded himself with. Caravaggio's synthesis of the sacred and the ordinary, one of the most respected and original elements of his work, was made more compelling by the types of settings and individuals he would include in his work. If Caravaggio was not so impulsive and aggressive, perhaps he would not have experienced poverty or been drawn to the poorer, more dangerous Roman neighborhoods which were filled with criminals, prostitutes and derelicts. He could have lived his life within the confines of one of his patrons' palaces, surrounded by wealth, as was customary during the time. But including the aristocracy and aristocratic environments in religious paintings was neither imaginative nor novel—

just look at Renaissance and Early Netherlandish art, such as Jan van Eyck's *Madonna of Chancellor Rolin*, which depicts Mary and Jesus within a luxurious 15<sup>th</sup> century environment interacting with the patron of the painting. Portraying religious allegories by painting criminals, prostitutes, and derelicts within shady alleyways or poorly lit spaces, as Caravaggio did, was the true artistic breakthrough.

Caravaggio was not only groundbreaking in his synthesis of the sacred and ordinary, he also pioneered and popularized a unique artistic style known as tenebrism. Tenebrism was characterized by mysterious, heavily shadowed and gloomy backgrounds that served to both visually deny depth and provide dramatic contrasts with the illuminated subject matter in the foreground. Though Caravaggio did not create tenebrism, he was instrumental in its development his use of tenebrism inspired other artists to also incorporate this style into their works (Graham-Dixon, 2010). Because Caravaggio's objective was to express his reality through his art, perhaps Caravaggio's use of tenebrism symbolized the darkness and conflicts within his own life.

Caravaggio's highly original style of painting, while arguably sacrilegious and certainly controversial, garnered the respect and admiration of Prospero Orsi. Orsi was an established Roman artist and was so impressed by Caravaggio's work that he decided to advocate for Caravaggio, spreading word of Caravaggio's talent and creativity. This led to Cardinal Francesco Maria del Monte, a man with strong ties to the Medici family, to begin buying Caravaggio's art.

By 1595, Cardinal Francesco Maria del Monte made Caravaggio a member of his inner circle. Del Monte would provide Caravaggio with housing, commissions

and supplies. Because del Monte belonged to the upper echelons of the Roman social strata, he was naturally a very cultured man. Del Monte exposed Caravaggio to music, literature and theater, all of which later inspired Caravaggio's works. Caravaggio's relationship with del Monte also served to broaden Caravaggio's patronage and increase Caravaggio's fame and social standing. Because of del Monte, Caravaggio received commissions from aristocrats such as Vincenzo Giustiniani, the Aldobrandini family and Ottavio Costa.

In 1599, Caravaggio received a commission for two paintings that would be placed inside the Contarelli Chapel in the church of San Luigi dei Francesi. This commission was originally given to d'Arpino, but Caravaggio had amassed such a following that he was able to supplant his former master. These paintings continued Caravaggio's artistic decision to blend the sacred with the ordinary, and so while each painting was based on historical, religious events, Caravaggio depicted them as though they were contemporary, and occurred in modern settings. In one of the paintings Caravaggio created for the Contarelli Chapel, *The Martyrdom of St. Matthew*, Caravaggio depicted himself within the scene, running away as though he was afraid the police were after him. This inclusion could be seen as a reference to Caravaggio's own experiences with the law, which were largely informed by his excessively hostile and antagonistic nature.

As Caravaggio became more famous and his talents increasingly recognized, his impulsive, aggressive behavior worsened. In 1601, Caravaggio became a favorite artist of the powerful Cardinal Mattei, and even lived in his palace. However, in 1603 Caravaggio was once again arrested, this time for libel, and removed from Cardinal

Mattei's residence. Caravaggio's patron and friend, Cardinal del Monte, tried to use his influence to keep Caravaggio out of prison, however del Monte had a reputation to maintain, and would only help Caravaggio indirectly. Even so, Caravaggio spent a few weeks in prison because of the libel charges, and upon being released, was sentenced to a further month of house arrest. These experiences with the police only exacerbated Caravaggio's mental health and stability, and as a result, these encounters with the law only became more frequent. Between the years of 1604 and 1605, Caravaggio was either arrested or sent to jail at least seven times for assault or disturbing the peace (Ebert-Schifferer, 2012). It should be noted that even though Caravaggio's encounters with the law were frequent, he still remained extremely productive during this time, completing his famous *Entombment of Christ*.

Nevertheless, Caravaggio was clearly a troubled man. The sense of abandonment and isolation that he developed as a result of the death of his parents and brother persisted throughout his short life, and likely fueled his notoriously aggressive and impulsive behavior. Caravaggio's demeanor additionally served to further his sense of loneliness. He would often go on long walks, rapier at his side, deliberately looking for people to brawl with. His behavior made it very difficult for him to maintain close, personal relationships, and so most of his intimate relations involved prostitutes that he would find on the streets of Rome or in the brothels that he would visit. One such prostitute, a woman named Lena, was particularly close to Caravaggio. He cared for her deeply, but became uncontrollably jealous and enraged when he suspected that she had a relationship with a man named Mariano Pasqualone.

As a result of this jealousy, Caravaggio assaulted Pasqualone, and in 1605, Caravaggio had to flee Rome for Genoa in order to avoid incarceration.

Caravaggio spent only a month in Genoa, but upon arriving back in Rome, he discovered that he had been evicted from his home because his rent was overdue. Even though Caravaggio was temporarily homeless, he was still able to work, and his great fame made it very easy for him to get commissions. However, Caravaggio's return to Rome would be brief; in 1606, Caravaggio dueled and ultimately killed Ranuccio Tomassoni, but suffered serious wounds during the confrontation. Caravaggio once again had to flee Rome, but this time, he would not return (Cassani, Sapio, Altieri, D'Aguanno, Manna, Weir & Bologna, 2005).

To avoid significant jail time, Caravaggio first fled to Naples. Caravaggio's connections were vast enough that even in a new city, he still had patrons willing to give him commissions for his work. He only spent a year in Naples before moving to Malta. Once in Malta, however, he once again got into a fight, and fled to Sicily. Though Caravaggio's hot temper would lead him to relocate and flee multiple times throughout his life, it seemingly never encumbered his artistic production or the quality of his work. While on the run for murder, he travelled to Syracuse, Messina and Palermo during 1608 in order to avoid the authorities, yet was able to complete altarpieces in each of these cities.

Caravaggio was known to portray himself within his paintings, often in an effort to reflect his thoughts and emotions. One of his most famous paintings, *David with the Head of Goliath*, depicts the aftermath of David and Goliath's famous battle. The exact date of this painting is unknown, but it is thought to have been completed



sometime after Caravaggio fled Rome. In this painting, a contemplative David holds the severed, bloodied head of Goliath, which appears to be a self-portrait of Caravaggio. By representing himself, through the self-portrait, as the victim of violence, Caravaggio draws strong parallels to his own life. There are many potential interpretations of the symbolism of this painting, but one of the more widely accepted interpretations views this painting as a plea for Caravaggio's life. This painting was made for Cardinal Scipione Borghese, one of the few men powerful enough to pardon Caravaggio for his murder. In the painting, the head of Goliath appears to be in a liminal stage, right on the boundary between life and death. The head has been severed, but there is still blood gushing from the wound. Goliath's facial expression appears to have some life in it; his mouth is open as though he were still screaming. This half-alive, half-dead appearance could be a reference to Cardinal Borghese's ability to determine Caravaggio's fate (Graham-Dixon, 2010; Bersani & Dutoit, 1998). It is important to consider how Caravaggio's own violent behavior was to blame for this precarious situation; it is ultimately due to Caravaggio's aggression that this painting is imbued with an elevated level of meaning and symbolism.

Caravaggio eventually felt that his safety was in jeopardy in Sicily, so he decided to return to Naples. Once in Naples, he desperately tried to receive a pardon for his murder of Tomassoni so that he could eventually live once more in Rome. This was never to be. In 1610, Caravaggio got into yet another fight and was badly wounded as a result. He wanted to leave Naples so he set sail for Rome, hoping that he would be pardoned upon arrival, but had developed a severe fever during the

journey and died before reaching the port. Caravaggio was only 38 at the time of his death.

## Chapter IX: Discussion

The objective of this thesis was to examine the relationship between creativity and mental illness in order to better understand how psychopathology can contribute an individual's capacity to become a creative genius. The previous case studies function as insights into the relationship between each selected artist's mental illnesses or pathological behaviors and the creativity that they demonstrated through their artwork. However, given that this relationship can be analyzed on an individual as well as global scale, the information derived from each case study must be distilled into a simpler, more rudimentary form in order for potentially generalizable patterns and trends to emerge. While it is important to keep in mind that most individuals who have mental disorders or pathological behaviors do not become creative geniuses (Ludwig, 1995), the hope is that, through an examination of the ways in which each selected artist was impacted by their respective psychopathologies, potential explanations for each artist's exceptional creativity can be uncovered. To examine this issue further, a creativity profile for each artist, as well as creativity profiles for all aggregate pathological behaviors discussed in the case studies will be established. These profiles will assess creativity through four dimensions: the creative process, the creative person, the creative press, and the creative product.

## **Vincent Van Gogh Creativity Profile**

Even at an early age, Van Gogh's mental state was very unstable. He was depressed, he would harm himself, and he was irrational. These qualities made it very difficult for him to hold a formal job, be a productive student, or connect to his audience as a preacher. He eventually became a drifter and would trade his paintings for food and shelter. Even though he would paint out of necessity, Van Gogh was still intrinsically motivated to paint; rather than engage in menial work, he was drawn to painting (Colin, 1926; De Batz, 1943). Van Gogh used art as his primary means of self-expression, and therefore he viewed his artistic output as a cathartic experience that would help him cope with the poverty and depression he experienced throughout his life. Thus, Van Gogh meets the psychopathological criterion of having a distress—a state of emotional turmoil. This poverty and destitution, of which his pathological behaviors were principally responsible for, are just some of the harmful, distressing consequences of Van Gogh's psychopathology. However, the connection between this distress and Van Gogh's creative process should not be overlooked; Van Gogh's emotional and cognitive suffering effectively fueled his desire for creative production.

Because Van Gogh's behaviors and affective state precluded him from entering more formal and rigid professions with consistent paychecks, Van Gogh became highly dependent on his brother, Theo. Theo would provide Van Gogh with financial and emotional support as well as artistic freedom. All of these qualities—emotional support, financial support, and autonomy in decision-making—make for a highly creative environment (Hennessey & Amabile, 1988; Kandler, Riemann,

Angleitner, Spinath & Borkenau, 2016). However, Van Gogh was also extremely impulsive; because Van Gogh lacked any substantial income apart from the allowance that Theo would give him, Van Gogh would spend the little money he had on alcohol, coffee and bread. This impulsivity, which was largely to blame for Van Gogh's poor diet, could have had a positive effect on Van Gogh's creative person; coffee contains significant amounts of caffeine, and caffeine can increase one's arousal. Yet, the same impulsivity can be an asset to the creative process as it implies a degree of flexibility and willingness to alter course quickly.

Van Gogh's irrationality and paranoia, which eventually led him to cut off his own ear, made it extremely difficult for him to maintain relationships. Because of this, Van Gogh was isolated for much of his life. Again, while this isolation constitutes as a harmful consequence of his pathological behaviors, it led him to particularly beneficial creative environments. Van Gogh was highly productive in Arles, where he spent most of his time alone, as well as St. Remy and Auvers-sur-Oise, where he was deliberately sequestered. While Van Gogh was in St. Remy and Auvers-sur-Oise, his hallucinations, and bouts of delirium and irrationality grew more severe and frequent. These symptoms may have potentially contributed to Van Gogh's creative process as well; they provided him with a viewpoint that was, by definition, highly original in the sense that others were not experiencing the same input that he was. The severity and frequency of these symptoms were positively correlated to his productivity, as he was especially prolific while institutionalized.

## **Edvard Munch Creativity Profile**

Unlike Vincent Van Gogh, who displayed a plethora of pathological behaviors, Edvard Munch primarily experienced three different psychopathologies throughout his life: depression, anxiety, and alcoholism. Munch's psychopathologies were surprisingly beneficial to all four dimensions of creativity: his creative environment, creative product, creative process and his creative person.

Munch's childhood was bereft of happiness. Before the age of 13, he had already lost both his mother and his sister to tuberculosis. The sadness and pain that Munch experienced in his youth developed into a chronic anxiety and depression that he would struggle with for most of his life. While these symptoms caused significant amounts of distress, Munch decided to use his pathological symptoms as his primary source of artistic inspiration, and thus his anxiety and depression became integral components of his creative process and creative products. Because Munch was using his art as an expressive outlet for his pathological symptoms, he began to experiment with different artistic styles such as naturalism, impressionism, plein-air and symbolism in an effort to transcribe his cognitions and emotions in as affective and visceral a manner as possible. This desire to better express his psychopathologies culminated in Munch's development of the expressionist style. His extreme experimentation can be seen as an openness to new experiences, and openness to new experiences is a personality trait that is highly correlated with creativity, and associated with the creative person (Benedek, Jauk, Sommer, Arendasy & Neubauer, 2014). In addition to his artistic style, Munch's quest to transcribe his feelings onto a canvas led him to develop a unique symbolic vocabulary. Primarily because of his

depression, Munch was inspired to use colors based on the emotions they conveyed rather than how they were conventionally used in art, which was to represent reality. This use of color is an example of how Munch's depression, and the distress it caused, ultimately benefited Munch's divergent thinking ability. Using color to express emotions rather than reality was extremely original and can be considered an advanced form of elaboration—this use of color allowed Munch to more effectively convey his emotional state. Additionally, Munch wanted to incorporate the sense of isolation he felt, which was related to his depression, in his art. Isolation became a major theme in his art, and Munch would express his isolation compositionally—generally he would have one character in his painting entirely separated from the rest. Because Munch's depression directly influenced the coloration and composition of his paintings, his depression can be seen as a beneficial to his creative process and ultimately his creative product.

For Munch, painting was a cathartic and therapeutic experience in the sense that Munch would use his artistic production as a means of processing his thoughts and emotions (Howe, 2001). Munch's intrinsic motivation to paint, a result of his pathological symptoms, contributed to his creative environment. He, like Van Gogh, loved to paint, and therefore would focus all his effort into improving his craft through deliberate practice. This deliberate practice ultimately contributed to Munch's artistic expertise.

Because of Munch's pathological symptoms, he felt it especially important to live in spaces that were comforting emotionally and devoid of external stressors. His studios in Aagaarstrand and later in Ekely were set in beautiful, yet calm, areas.

These idyllic settings were not only beneficial to Munch's mental health; they also inspired the settings that Munch would use in some of his paintings. Additionally, Munch specifically chose to live and work in Aagaarstrand and Ekely. This autonomy in decision-making, both in his art and in his environment, is highly conducive to creativity (Hennessey & Amabile, 1988; Kandler, Riemann, Angleitner, Spinath & Borkenau, 2016).

### **Michelangelo Merisi da Caravaggio Creativity Profile**

Similar to Edvard Munch, Michelangelo Merisi da Caravaggio experienced the death of his family at a young age. By the time Caravaggio was a teenager, his brother, father and mother had all passed away. However, unlike Munch, this loss did not translate into chronic depression and anxiety; Caravaggio adopted extremely aggressive and hostile behaviors, became pathologically impulsive and irrational. This irrationality and impulsivity may have allowed Caravaggio to eschew a functional fixedness, thus facilitating his development of stylistic and thematic artistic innovations later in his career (Graham-Dixon, 2010).

Even at an early age, it was evident that Caravaggio had a temper. As a teenager, he served as an apprentice. He was purportedly supposed to spend most of his time studying and painting, but instead, he would experience fits of rage and disappear for days at a time. Because of this behavior, he had trouble with his role as a student, and it is unclear how much he truly learned from his time as an apprentice. During this time, however, he certainly had the opportunity to practice the technical



elements of painting, but due to his behavior, he may not have learned artistic conventions. This could explain why Caravaggio developed his own, unique artistic style rather than rely upon artistic styles that had already been established.

Caravaggio's proclivity to incorporate violence and hostility into his social interactions proved problematic after he concluded his apprenticeship. As a young adult, Caravaggio either murdered, or assisted in the murder of an individual, and was forced to spend a year in prison. As was customary at the time, he likely had to pay a fine in addition to his imprisonment. Caravaggio's primary assets during his youth were the properties that his parents had left him in their wills—he potentially had to sell all of his assets in order to pay off this fine. With no money saved up, Caravaggio became impoverished. However, his aggression was not the only reason for his recurring experiences with poverty; Caravaggio was also extremely impulsive, and was thus incapable of managing his finances. The aggression and impulsivity both suggest a deficiency in his cognitive inhibitory systems. While problems with the inhibitory system often lead to negative social consequences, this lack of inhibition can be an asset to creativity as it enhances cognitive flexibility. Furthermore, the breakdowns in inhibition that contributed to Caravaggio's money problems were instrumental to landing him in what would prove to be a creative environment.

One of Caravaggio's most important contributions as an artist was his synthesis of the sacred and the profane—he would insert the criminals, prostitutes and derelicts he was surrounded with into his artwork, even though he would frequently depict religious allegories in his paintings. Though this art was exceedingly original, it also represented the rejection of artistic norms and conventions. In this sense,

Caravaggio's irrationality may have been beneficial to his creative process; he had no qualms creating paintings that many contemporaries considered controversial and sacrilegious. This also ties into his aforementioned lack of inhibition; because Caravaggio was clearly incapable of controlling his hostile impulses, it stands to reason that the cognitions and perceptions he expressed in his art were similarly unfiltered.

While Caravaggio's pathological behaviors both directly and indirectly influenced the content of his paintings, his aggression also informed his stylistic and symbolic decisions. Caravaggio is credited with pioneering tenebrism—this mysterious, gloomy and dark artistic style could have represented the lens through which Caravaggio's aggression rendered his world. Additionally, Caravaggio had a tendency to include himself in his paintings. In his *Martyrdom of St. Matthew*, Caravaggio depicts himself fleeing within the scene, which could have been a direct reference to his experiences with the law. In his *David with the Head of Goliath*, Caravaggio chose to paint Goliath as himself, which could be considered yet another reference to Caravaggio's violent past and troubles with the law. The influence of Caravaggio's aggression on his stylistic and symbolic decisions further demonstrates how this aggression was tied to Caravaggio's creative process.

Caravaggio's aggression and irrationality made it very difficult for him to maintain close relationships with others. Rather than seek stable friendships, Caravaggio would actively antagonize those around him, hoping that doing so would incite a fight. Clearly, this behavior contributed to Caravaggio's social isolation. However, while isolation can sometimes be considered a creative environment—the

lack of external distractions can be conducive to productivity and creativity—it is unclear if this isolation had a tangible beneficial effect for Caravaggio. Throughout his life, Caravaggio would have frequent run-ins with the law. In order to escape imprisonment, he would repeatedly have to flee. Even while hiding from the police, which involved briefly moving to various cities, Caravaggio remained very productive artistically. This suggests that Caravaggio may have been adaptable to multiple environments, and therefore his isolation may not have had an especially significant effect on his artistic production or quality. Additionally, because Caravaggio was able to remain productive regardless of circumstance—save for his imprisonments—the pathological behaviors that caused Caravaggio to become impoverished or need to flee did not have a detrimental impact on his artistic production or quality.

### **Creativity Profile of Pathological Behaviors and Symptoms**

Among the three selected artists, there were seven distinct pathological behaviors or symptoms demonstrated that had a direct effect on creativity: (i) aggression, (ii) anxiety, (iii) depression, (iv) hallucinations, (v) impulsivity, (vi) irrationality, and (vii) paranoia. In this section, the ways in which specific symptoms interact with the creative process will be considered. The goal is to highlight how these behaviors and symptoms can be detrimental from a social, emotional or economic perspective while at the same time being beneficial to creative production.

*Aggression:* Only Caravaggio demonstrated aggression or hostility. Because of Caravaggio's aggression, he lived or spent significant amounts of time in poor neighborhoods, was exposed to the lowest social stratum of society, was potentially drawn to the tenebrism style, and was inspired to include symbolism within his art that directly referenced the violence within his life.

Caravaggio had immense talent—during the early 17<sup>th</sup> century, no artist with his level of artistic ability would have been exposed to such miserable and dejected environments. Rather, artists of Caravaggio's caliber would normally live within the palaces of their patrons, surrounded by luxury and wealth. Caravaggio's level of aggression suggests a lack of inhibition—he was clearly incapable of controlling his hostile impulses. This proved detrimental in a social context, but was helpful in an artistic context; Caravaggio's exposure to these poor, crime-infested neighborhoods enabled him to draw inspiration from previously untapped sources. Additionally, this lack of inhibition, evidenced by his aggressive behavior, could have contributed to Caravaggio's lack of regard for social and artistic conventions, which ultimately enabled him to recognize the artistic value of his surroundings.

*Anxiety:* Both Van Gogh and Munch experienced anxiety, however Van Gogh's anxiety was likely a component or byproduct of his irrationality rather than a standalone psychopathology. Munch's anxiety significantly contributed to his creative environment. For Munch, his anxiety influenced the studios that he wanted to paint in, it directly influenced the content, style, and composition of his paintings, and it also positively influenced his intrinsic motivation to paint.

A pathological, cognitive fixation on specific disconcerting or disturbing thoughts or beliefs is a fundamental component of anxiety. Munch's anxiety influenced the topics that he would contemplate and ultimately draw inspiration from. The central focus of Munch's anxiety related to his fear of death and his sense of social isolation. This helps to explain why Munch chose to paint the deaths of his mother and sister, and would also consistently portray the primary characters (which could have been representations of Munch) within his art as physically isolated. Munch's anxiety was fundamental to his ideation, and therefore, his anxiety clearly contributed to his creative process and creative product. Additionally, Munch's anxiety caused him significant emotional distress. For Munch, painting was a cathartic experience, and his intrinsic motivation to paint was grounded in his desire to alleviate this emotional distress.

*Depression:* Both Van Gogh and Munch experienced depression during their lives. Interestingly, depression had similar effects for both Van Gogh and Munch. Van Gogh and Munch both found painting to be an effective and cathartic means of self-expression, and so painting allowed both artists to experience solace despite their depression. Painting became a form of self-medication for Van Gogh and Munch, and so their intrinsic motivation to paint was borne from their innate desires to quell or mitigate their symptoms of depression. However, because both artists were exposed to painting at an early age, when their symptoms had yet to become as seriously psychologically damaging, the extent to which this intrinsic motivation and the

deliberate practice that accompanies it can be credited for either artist's ultimate mastery of painting is unclear.

*Hallucinations:* Of the three artists featured in the case studies, only Van Gogh experienced hallucinations. Van Gogh experienced symptoms more frequently towards the end of his life, which coincided with an increase in productivity. Because hallucinations can function as a source of ideation, and therefore can contribute to the creative process and creative product, Van Gogh may have incorporated the thoughts and ideas drawn from his hallucinations into his art. Additionally, like his depression, Van Gogh may have painted as a way to calm his mind and mitigate the distressing effects of his hallucinations. In this way, Van Gogh's intrinsic motivation to paint may have been partially attributable to his hallucinations, which would also explain his increase in productivity.

*Impulsivity:* Both Van Gogh and Caravaggio were pathologically impulsive. Their impulsivity led both of them to financial ruin, as they were both incapable of managing their finances. Additionally, their impulsivity may have been a manifestation of a dysfunctional cognitive inhibitory system, which would have contributed to their creative person and creative process by effectively increasing their ideation. However, Van Gogh's impulsivity did not directly contribute to his creative environment, whereas Caravaggio's impulsivity was primarily responsible for his exposure to poor neighborhoods, which served as a creative environment for him. For Van Gogh, impulsivity was one of many disconcerting behaviors that

influenced Theo's decision to be economically, emotionally and artistically supportive. In this sense, Van Gogh's impulsivity indirectly led to the creative environment that Theo provided.

*Irrationality:* Van Gogh and Caravaggio were also both irrational. Van Gogh's irrationality also expressed itself as a delirium, which may have been evidence of disordered thinking. This distinction is important because disordered thinking effectively removes the binds of convention, and facilitates one's ability to think of ideas or connections that are not grounded in reality, which would be beneficial to one's fluency, originality and flexibility, and thus their creative process. Caravaggio was not known to be delirious, and his irrationality was primarily manifested through his difficulty maintaining relationships or solving disagreements without resorting to violence. However, Caravaggio's irrationality may have also contributed to his creative process. Irrationality, like his impulsivity and his aggression, can be evidence of a dysfunctional cognitive inhibitory system. Therefore, Caravaggio's irrationality may have also contributed to his ideation, and thus his creative process and creative product.

*Paranoia:* Of the three artists discussed in the case studies, only Van Gogh experienced paranoia during his life. While Van Gogh's paranoia may have been pathologically connected to his irrationality—the symptoms could have been comorbid or suggested a greater psychopathology—it nonetheless had a distinct effect on his creative environment. Van Gogh's paranoia made it very difficult for him to

maintain close relationships, and he remained socially isolated for much of his life. This isolation may have served as a creative environment; Van Gogh was extremely productive while he was isolated from others. Furthermore, when Gauguin came to visit Van Gogh in Arles, Van Gogh felt that Gauguin was betraying him by asking to leave. This paranoia caused Van Gogh to cut off his ear, which resulted in Van Gogh's institutionalization. While living in an institution, Van Gogh was physically separated from the rest of the world, yet he was extraordinarily productive, creating some of his most famous work, such as *Starry Night*. This further suggests that Van Gogh's isolated environment contributed to both his creativity and his artist production.

### **Limitations**

While this thesis provides insights into the relationship between mental disorders and creativity for three artists, the limited nature of the sample cannot serve as an adequate basis from which to draw statistically generalizable conclusions. In order to discern and uncover overarching connections between psychopathologies and creativity, a greater number of creative geniuses with mental disorders would have to be analyzed and considered. Nevertheless, this qualitative study does begin to highlight some ways in which psychopathological symptoms and elements of creative processing overlap to both the benefit and detriment of those they effect.

While a few of the connections between psychopathologies and the creative person were clearly specified within the creativity profiles, many were vague or



difficult to fully understand. Much of the research investigating the biological, physiological and neurological effects of mental disorders is nascent; further exploration into these relationships is required for a more comprehensive understanding of the effects of mental disorders.

A third limitation is that this analysis is based on retrospective data, rather than prospective data. Each artist has been deceased for a considerable amount of time, and this limits the quantity and quality of information that can be used in a case study. Additionally, because there were no neurological scans or tests conducted on these artists (these devices and methods were not yet developed), much of this analysis is based on behavioral reports from the time period. In order for the relationship between creativity and mental disorders to be fully understood, there must be future research involving longitudinal studies of visual artists who are creative geniuses with mental disorders. These longitudinal studies should include intermittent neurological scans, personality tests, cognitive ability assessments such as the Torrance test and I.Q. test, and detailed primary reports from psychologists, friends, family members and the artist him/herself.

## **Conclusion**

This thesis illuminates the ways that mental disorders can benefit, rather than impede, the art of highly creative individuals, and it also offers potential explanations as to why not all of those with mental disorders become creative. For a mental disorder to contribute to one's creativity within an artistic context, the mental disorder

must inspire an individual, and provide a pathway for him/her, to explore greater levels of expressiveness. All three artists discussed in this thesis were pioneers given their artistic and historical contexts, and all three had to innovate and invent the means through which they would express themselves. Additionally, many of the pathological behaviors and symptoms experienced by the artists spurred their motivation to paint. This desire to practice painting was beneficial to the development of their artistic expertise and this mastery of painting enabled each artist to realize his creative thoughts on a canvas.

By highlighting some of the ways in which psychopathological thought processes can interact with creative cognition to produce eminently creative products, the narrative that all creative geniuses are successful in spite of their mental illness is called into question. The lives and careers of Vincent Van Gogh, Edvard Munch, and Michelangelo Merisi da Caravaggio suggest that creative geniuses can be successful because of their mental illnesses. In modern American society, mental disorders, and those who suffer from them, are severely stigmatized. One of the primary objectives of this thesis is to illustrate the many ways that mental disorders can help spur creativity and lead to profound innovations, ultimately benefiting both society and culture. An understanding and acknowledgement of the positive aspects of mental disorders will hopefully call into question the negative societal branding, and lead to an acceptance, appreciation, and celebration of those afflicted, and the sources of their creativity.

## References

- Amabile, T. M. (1982). Social Psychology of Creativity: A Consensual Assessment Technique. *Journal of Personality and Social Psychology*, 43(5), 997–1013. <https://doi.org/10.1037/0022-3514.43.5.997>
- American Psychiatric Association, & American Psychiatric Association. DSM-5 Task Force. (2013). *Diagnostic and Statistical Manual of Mental Disorders: DSM-5*. (5th ed.). Washington, D.C.: American Psychiatric Association.
- Baruch, I., Hemsley, D. R., & Gray, J. A. (1988). Latent Inhibition and “Psychotic Proneness” in Normal Subjects. *Personality and Individual Differences*, 9(4), 777–783. [https://doi.org/10.1016/0191-8869\(88\)90067-0](https://doi.org/10.1016/0191-8869(88)90067-0)
- Benedek, M., Jauk, E., Sommer, M., Arendasy, M., & Neubauer, A. C. (2014). Intelligence, Creativity, and Cognitive Control: The Common and Differential Involvement of Executive Functions in Intelligence and Creativity. *Intelligence*, 46, 73–83. <https://doi.org/10.1016/j.intell.2014.05.007>
- Bersani, L., & Dutoit, U. (1998). *Caravaggio's Secrets*. Cambridge, Mass.: MIT Press.
- Betancourt, T. S., Speelman, L., Onyango, G., & Bolton, P. (2009). Psychosocial Problems of War-Affected Youth in Northern Uganda: A Qualitative Study. *Transcultural Psychiatry*, 46(2), 238–256. <https://doi.org/10.1177/1363461509105815>
- Cassani, S., Sapio, M., Altieri, P., D’Aguanno, E., Manna, G., Weir, M., & Bologna, F. (2005). *Caravaggio: The Final Years*. Napoli: Electra Napoli.

- Chase, W. G., & Simon, H. A. (1973). Perception in Chess. *Cognitive Psychology*, 4(1), 55–81. [https://doi.org/10.1016/0010-0285\(73\)90004-2](https://doi.org/10.1016/0010-0285(73)90004-2)
- Chi, M. T. H., Glaser, R., & Farr, M. J. (1988). *The Nature of Expertise*. (M. T. H. Chi, R. Glaser, & M. J. Farr, Eds.). Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc.
- Colin, P. (1926). *Van Gogh*. New York: Dodd, Mead.
- De Batz, G. (1943). *The Art and Life of Vincent van Gogh. Loan Exhibition in Aid of American and Dutch War Relief*. New York: Wildenstein.
- de Groot, A. D. (1978). *Thought and Choice in Chess* (Originally published 1978 ; Im Original erschienen 1978). Berlin, Boston: De Gruyter.
- Drescher, J. (2015). Out of DSM: Depathologizing Homosexuality. *Behavioral Sciences*, 5(4), 565–575. <https://doi.org/10.3390/bs5040565>
- Ebert-Schifferer, S. (2012). *Caravaggio: The Artist and his Work*. Los Angeles: The J Paul Getty Museum.
- Ericsson, K. A., & Smith, J. (1991). *Toward a General Theory of Expertise: Prospects and Limits*. Cambridge ; New York: Cambridge University Press.
- Gail Saltz author. (2017). *The Power of Different: The Link Between Disorder and Genius* (First edition..). New York: Flatiron Books.
- Graham-Dixon, A. (2010). *Caravaggio: A Life Sacred and Profane*. London ; New York: Allen Lane.

- Guegan, J., Nelson, J., & Lubart, T. (2017). The Relationship Between Contextual Cues in Virtual Environments and Creative Processes. *Cyberpsychology, Behavior, and Social Networking*, 20(3), 202–206.  
<https://doi.org/10.1089/cyber.2016.0503>
- Hastorf, A. H. (1997). Lewis Terman's Longitudinal Study of the Intellectually Gifted: Early Research, Recent Investigations and the Future. *Gifted and Talented International*, 12(1), 3–7.  
<https://doi.org/10.1080/15332276.1997.11672858>
- Hennessey, Beth A., & Amabile, Teresa M. (1988). The Role of the Environment in Creativity. In R. J. Sternberg, *The Nature of Creativity: Contemporary Psychological Perspectives*. Cambridge ; New York: Cambridge University Press.
- Howe, J. W. (2001). *Edvard Munch: Psyche, Symbol and Expression*. Chestnut Hill, MA : [Chicago]: Boston College, McMullen Museum of Art ; Distributed by the University of Chicago Press.
- J. P Hodin. (1972). *Edvard Munch*. New York: Oxford University Press.
- Jason, G. W. (1983). Hemispheric Asymmetries in Motor Function: I. Left-Hemisphere Specialization for Memory but not Performance. *Neuropsychologia*, 21(1), 35–45. [https://doi.org/10.1016/0028-3932\(83\)90098-2](https://doi.org/10.1016/0028-3932(83)90098-2)
- Jay A Clarke. (2009). *Becoming Edvard Munch: Influence, Anxiety, and Myth* (1st ed.). Chicago, Ill. : New Haven, Conn.: Art Institute of Chicago ; Yale University Press distributor.

- Jung, R. E., Gasparovic, C., Chavez, R. S., Flores, R. A., Smith, S. M., Caprihan, A., & Yeo, R. A. (2009). Biochemical Support for the “Threshold” Theory of Creativity: A Magnetic Resonance Spectroscopy Study. *Journal of Neuroscience*, 29(16), 5319–5325.  
<https://doi.org/10.1523/JNEUROSCI.0588-09.2009>
- Jung, R. E., Grazioplene, R., Caprihan, A., Chavez, R. S., & Haier, R. J. (2010). White Matter Integrity, Creativity, and Psychopathology: Disentangling Constructs with Diffusion Tensor Imaging. *PLoS ONE*, 5(3).  
<https://doi.org/10.1371/journal.pone.0009818>
- Jung, R. E., Segall, J. M., Bockholt, H. J., Flores, R. A., Smith, S. M., Chavez, R. S., & Haier, R. J. (2010). Neuroanatomy of Creativity. *Human Brain Mapping*, 31(3), 398–409.
- Kandler, C., Riemann, R., Angleitner, A., Spinath, F. M., Borkenau, P., & Penke, L. (2016). The nature of creativity: The Roles of Genetic Factors, Personality Traits, Cognitive Abilities, and Environmental Sources. *Journal of Personality and Social Psychology*, 111(2), 230–249.  
<http://dx.doi.org.ezproxy.wesleyan.edu/10.1037/pspp0000087>
- Kaufman, J. C., & Baer, J. (2012). Beyond new and appropriate: Who Decides What is Creative? *Creativity Research Journal*, 24(1), 83–91.  
<https://doi.org/10.1080/10400419.2012.649237>

- Kaufman, Allison B., Kornilov, Sergey A., Bristol, Adam S., Tan, M., & Grigorenko, Elena L. (2010). The Neurobiological Foundation of Creative Cognition. In J. C. Kaufman & R. J. Sternberg (ed.), *The Cambridge Handbook of Creativity*. Cambridge; New York: Cambridge University Press.
- Kozbelt, A., Beghetto, Ronald A., & Runco, Mark A. (2010) Theories of Creativity. In J. C. Kaufman & R. J. Sternberg (ed.), *The Cambridge Handbook of Creativity*. Cambridge; New York: Cambridge University Press.
- Kyaga, S. (2015). *Creativity and Mental Illness: The Mad Genius in Question*. London: Palgrave Macmillan UK.
- Leighton, J. P., & Sternberg, R. J. (2004). *The Nature of Reasoning*. Cambridge, U.K. ; New York: Cambridge University Press.
- Littman, R. (2008). *The Cultural Context of Trauma: A Case Study of Displaced Youth in Northern Uganda*. Retrieved from [http://wescholar.wesleyan.edu/etd\\_hon\\_theses/78/](http://wescholar.wesleyan.edu/etd_hon_theses/78/)
- Lloyd-Evans, R., Batey, M., & Furnham, A. (2006). Bipolar Disorder and Creativity: Investigating a Possible Link. In A. Columbus & A. Columbus (Ed) (Eds.), *Advances in Psychology Research*. (pp. 111–141). Hauppauge, NY, US: Nova Science Publishers.
- Lomas, D. (1993). A Canon of Deformity: Les Demoiselles d'Avignon and Physical Anthropology. *Art History*, 16(3), 424.
- Ludwig, A. M. (1995). *The Price of Greatness: Resolving the Creativity and Madness Controversy*. New York: Guilford Press.

- Ludwig, A. M. (1998). Method and Madness in the Arts and Sciences. *Creativity Research Journal*, 11(2), 93–101.  
[https://doi.org/10.1207/s15326934crj1102\\_1](https://doi.org/10.1207/s15326934crj1102_1)
- Mashal, N., Faust, M., Hendler, T., & Jung-Beeman, M. (2007). An fMRI Investigation of the Neural Correlates Underlying the Processing of Novel Metaphoric Expressions. *Brain and Language*, 100(2), 115–126.  
<https://doi.org/10.1016/j.bandl.2005.10.005>
- McCutcheon, V. V. (2006). Toward an Integration of Social and Biological Research. *The Social Service Review*, 80(1), 159–178. <https://doi.org/10.1086/499087>
- Mell, J. C., Howard, S. M., & Miller, B. L. (2003). Art and the Brain: The Influence of Frontotemporal Dementia on an Accomplished Artist. *Neurology*, 60(10), 1707–1710.
- Mishra, S., & Carleton, R. N. (2015). Subjective Relative Deprivation is Associated with Poorer Physical and Mental Health. *Social Science & Medicine*, 147, 144–149. <https://doi.org/10.1016/j.socscimed.2015.10.030>
- Murali, V., & Oyeboode, F. (2004). Poverty, Social Inequality and Mental Health. *Advances in Psychiatric Treatment*, 10(3), 216–224.  
<https://doi.org/10.1192/apt.10.3.216>
- Mushtaq, R., Shoib, S., Shah, T., & Mushtaq, S. (2014). Relationship Between Loneliness, Psychiatric Disorders and Physical Health ? A Review on the Psychological Aspects of Loneliness. *Journal of Clinical and Diagnostic Research : JCDR*, 8(9), WE01–WE04.  
<https://doi.org/10.7860/JCDR/2014/10077.4828>



- Naifeh, S. W., & Smith, G. W. (2011). *Van Gogh: the Life* (First U.S. Edition..). New York: Random House.
- Oltmanns, T. F., & Emery, R. E. (2015). *Abnormal Psychology* (Eighth edition..). Boston: Pearson.
- Piérard, L., & Garland, H. (1925). *The Tragic Life of Vincent Van Gogh*. London: JCastle.
- Plucker, J. A., Beghetto, R. A., & Dow, G. T. (2004). Why Isn't Creativity More Important to Educational Psychologists? Potentials, Pitfalls, and Future Directions in Creativity Research. *Educational Psychologist*, 39(2), 83–96.  
[https://doi.org/10.1207/s15326985ep3902\\_1](https://doi.org/10.1207/s15326985ep3902_1)
- Plucker, Jonathan A., & Makel, Matthew C. (2010). Assessment of Creativity. In J. C. Kaufman & R. J. Sternberg (ed.), *The Cambridge Handbook of Creativity*. Cambridge; New York: Cambridge University Press.
- Post, F. (1994). Creativity and psychopathology. A Study of 291 World-Famous Men. *The British Journal of Psychiatry: The Journal of Mental Science*, 165(1), 22–34.
- Raffaele, P. (n.d.). Uganda: The Horror. Retrieved January 17, 2018, from <https://www.smithsonianmag.com/history/uganda-the-horror-85439313/>
- Rhodes, M. (1961). An Analysis of Creativity. *The Phi Delta Kappan*, 42(7), 305–310.
- Richard Kendall author, Sjraar van Heugten author, & Chris Stolwijk author. (2015). *Van Gogh and Nature*. Williamstown, Massachusetts: Clark Art Institute.

- Runco, Mark A., & Albert, Robert S. (2010). Creativity Research: A Historical View. In J. C. Kaufman & R. J. Sternberg (ed.), *The Cambridge Handbook of Creativity*. Cambridge; New York: Cambridge University Press.
- Sawyer, R. K. (2012). *Explaining Creativity: The Science of Human Innovation* (2nd ed.). New York: Oxford University Press.
- Sgarbi, V. (2007). *Caravaggio* (1st ed.). Milano : New York : London: Skira ;  
Distributed in North America by Rizzoli International Publications ;  
Distributed elsewhere in the world by Thames and Hudson.
- Shavelson, R. J., Webb, N. M., & Rowley, G. L. (1989). Generalizability Theory. *American Psychologist*, 44(6), 922–932. <http://dx.doi.org/10.1037/0003-066X.44.6.922>
- Silvia, Paul J., & Kaufman, James C. (2010). Creativity and Mental Illness. In J. C. Kaufman & R. J. Sternberg (ed.), *The Cambridge Handbook of Creativity*. Cambridge; New York: Cambridge University Press.
- Silvia, P. J., Nusbaum, E. C., Berg, C., Martin, C., & O'Connor, A. (2009). Openness to Experience, Plasticity, and Creativity: Exploring Lower-Order, High-Order, and Interactive Effects. *Journal of Research in Personality*, 43(6), 1087–1090. <https://doi.org/10.1016/j.jrp.2009.04.015>
- Simon, H. A., & Gilmarin, K. (1973). A Simulation of Memory for Chess Positions. *Cognitive Psychology*, 5(1), 29–46. [https://doi.org/10.1016/0010-0285\(73\)90024-8](https://doi.org/10.1016/0010-0285(73)90024-8)
- Simonton, D. K. (1984). *Genius, Creativity, and Leadership: Historiometric Inquiries*. Cambridge, Mass.: Harvard University Press.

- Simonton, K. D. (1999). Creativity from a Historiometric Perspective. In R. J. Sternberg (ed.), *Handbook of Creativity*. Cambridge University Press.
- Spitzer, R. L. (1981). The Diagnostic Status of Homosexuality in DSM-III: A Reformulation of the Issues. *The American Journal of Psychiatry*, 138(2), 210–215.
- Stemler, S., & Bebell, D. (2012). *The School Mission Statement : Values, Goals, and Identities in American Education*. Larchmont, NY: Eye on Education.
- Sternberg, R. J., Grigorenko, E. L., & Singer, J. L. (2004). *Creativity: from Potential to Realization* (1st ed.). Washington, DC: American Psychological Association.
- Sussman, A. (2007). Mental Illness and Creativity: A Neurological View of the “Tortured Artist.” *Stanford Journal of Neuroscience*.
- Sussmann, J. E., Lymer, G. K. S., McKirdy, J., Moorhead, T. W. J., Maniega, S. M., Job, D., ... McIntosh, A. M. (2009). White Matter Abnormalities in Bipolar Disorder and Schizophrenia Detected Using Diffusion Tensor Magnetic Resonance Imaging. *Bipolar Disorders*, 11(1), 11–18.  
<https://doi.org/10.1111/j.1399-5618.2008.00646.x>
- Tøjner, P. E. (2001). *Munch: In His Own Words*. Munich ; New York: Prestel.
- Torrance, Paul E. (1988). The Nature of Creativity as Manifest in its Testing. In R. J. Sternberg, *The Nature of Creativity: Contemporary Psychological Perspectives*. Cambridge ; New York: Cambridge University Press.

Wakefield, J. C. (1992). Disorder as Harmful Dysfunction: A Conceptual Critique of DSM–III–R 's Definition of Mental Disorder. *Psychological Review*, *99*(2),

232–247. <https://doi.org/10.1037/0033-295X.99.2.232>

Zhang, J., Kong, Y., Gao, Q., & Li, Z. (2013). When Aspiration Fails: A Study of Its Effect on Mental Disorder and Suicide Risk. *Journal of Affective Disorders*,

*151*(1), 243–247. <https://doi.org/10.1016/j.jad.2013.05.092>