Dyslexia and Creativity

Dyslexia and Creativity:

Diverse Minds

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PREFACE

The idea that dyslexia and creativity could be connected occurred to me after several years of teaching college students with language processing difficulties. I observed that these students were frequently forced to find creative solutions to problems that resulted from their struggles with language. This produced an opportunity for me to observe the conception, growth, and implementation of many of new ideas.

I first put my thoughts related to this in writing for a 1999 article titled "The Positive Side of Learning Differences." The article focused on how students with learning disabilities came to understand some of the concepts I was teaching in my classes. Some used visual organizers while others used their own experience as alternative routes to comprehension. Students might diagram a concept before writing about it, or they might think about applications of theoretical concepts in their own lives or the lives of their friends and families to gain understanding. Both approaches worked well for many (Gobbo 1999).

Over the next twenty years I saw unique student approaches described in the article repeatedly in my classrooms. Working with students who had a variety of learning differences allowed me to witness the creative adaptations that enabled them to understand concepts that they might not have been able to grasp by the means regularly used by typical college students. While I noticed that many of them had a strong interest in the arts, at first I thought this group is much like any other group of people in that it included some who had creative insights and a modicum of talent. Over time, however, I realized that they frequently experienced the spark of creativity and their determination and persistence contributed to fueling the fires of their success.

In my reading about the lives of people who I found interesting I noticed the difficulties that some of them experienced in school. To satisfy my own curiosity I went to search engines on the internet and entered the terms 'learning disability' and 'creativity.' Within moments, a list of famous people who supposedly had a variety of learning disabilities emerged. The same names came up again and again; Albert Einstein, Thomas Edison, Winston Churchill, Leonardo DaVinci. It is very likely that these men

struggled with learning disabilities like dyslexia long before the diagnostic category was routinely applied to those with reading, spelling and writing difficulties. In spite of recognized and recorded problems with the usual educational expectations of their times, they made major contributions to the worlds of science, politics, and the arts.

While a diagnosis of dyslexia is speculative for the historical figures mentioned, all five subjects of this book struggled with the learning disability. They are twentieth and twenty-first century creative individuals whose work I have admired. They all have had a major influence on the direction their disciplines have taken, and they all have spoken publicly about the effect their dyslexia has had on their formal educations and creative processes. I was amazed at the extent of the public record related to their experiences in elementary school, high school, and college.

Artists Robert Rauschenberg, Chuck Close, and Charles Ray, playwright Wendy Wasserstein, and novelist John Irving each had a very difficult time in school and grappled with the difficulties caused by dyslexia. Yet they persisted to become major forces for change in their respective fields. The relationship between the language processing disorder and the creative processes employed by these individuals appears to be one of the positive features of a dynamic that frequently serves to be the cause of pain, aggravation, and frustration experienced by students and the families who support them.

There have been many case histories related to the study of creativity written over the past thirty years or so. The five presented here focus on individuals who have made recognized contributions to their fields and have publicly commented on their struggles with dyslexia. These five cases are not a large enough sample to prove a direct connection between dyslexia and creativity, but they allow for the examination of the relationship between the learning disability and creativity in five very different lives with successful creative outcomes. Looking at these cases also allows for the identification of similar themes and trends. These similarities consistently include the important roles played by those who supported each individual as they developed their creative approaches. Supportive families were essential and the emotional sustenance they provided figured prominently in the lives of each person discussed. The roles of teachers, well known and less so, are also emphasized in these biographical sketches. Whenever possible, their sometimes-innovative approaches to working with students are recorded. The friends and student peers of the emerging artists who played an integral role in the college and

university environments were also critical to the growth of each artist's new ideas. They too are discussed and recognized in these short biographical summaries.

Most importantly, the five biographies allow students who struggle with the educational process to see the possible results of persistence in the face of adversity. They also may help the families, teachers and friends of those who struggle to see the importance of the ongoing support they provide to students.

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CHAPTER ONE

HISTORY: LANGUAGE AND THE BRAIN

Dyslexia and creativity are complex subjects. Both constructs are influenced by biological, psychological, and sociocultural forces. Dyslexia is a difficulty with language processing that negatively affects an individual's abilities in the areas of reading and written expression. Creativity is generally seen as the ability to produce new and valuable ideas (Myers and DeWall 2018, 339). This book will examine the intersection and relationship between dyslexia, often considered a disability in a society that places great emphasis on fluent reading and writing, and creativity which drives the engines of innovation.

This discussion of the relationship between these two concepts takes place within a social environment that is changing the way people view neurologically based differences like dyslexia. The neurodiversity movement is reframing the way people view conditions like dyslexia, autism, and other differences. The term neurodiversity describes the seemingly endless naturally occurring variations in the human nervous system. Diversity is generally considered to be a desirable characteristic that provides a richness to our natural environments and to our experiences in society. Dyslexia in its different forms, and other conditions like autism and ADHD, are seen as naturally occurring variations of that system. Conditions like dyslexia that cause problems with learning and performance on language-based tasks can evoke frustration and aggravation, and result in a variety of negative experiences. They also impart advantages and strengths. For many, creativity may be one of these advantages. As the neurodiversity movement gains momentum, individuals who experience dyslexia, autism, attention difficulties and other neurologically based conditions more frequently incorporate these differences into their definitions of self. These differences become an important component of identity. In this context creativity is considered here as a significant positive element possibly afforded by dyslexia.

The International Classification of Diseases or the ICD-10 (World Health Organization 1992), a diagnostic manual developed by the World Health Organization, describes dyslexia as a miscellaneous "symbolic dysfunction." It explains that it is a, "specific and significant reading disorder not accounted for by mental age, visual acuity problems or inadequate schooling… comprehension skills, word recognition, oral reading skill, and performance tasks requiring reading may all be affected." It also mentions spelling difficulties. The International Dyslexia Association, a professional organization that supports individuals with dyslexia, their families, and educators describes dyslexia as a

> "specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and fluent word recognition and by poor spelling or encoding abilities. The difficulties result from a deficit in the neurological component of language that is often unexpected in relation to other cognitive abilities and the provision of classroom instruction (Lyon et al. 2003)."

This language processing difficulty is not uncommon, and it affects between 5% and 17% of the general population (Shaywitz et al. 1992; Shaywitz et al. 2008; Siegel 2006). Although the underlying cause is biological in nature, the resulting difficulties with the use of language have major influences in socio-cultural realms. Difficulties with reading and learning that result from dyslexia generally have a negative effect on participation in school and can result in long- term social and economic disadvantages. When severe reading comprehension causes a young person difficulty, it can color much of his or her life. The problems and disadvantages persist into adulthood.

While dyslexia is generally described in a negative light, creativity is almost always viewed more positively. An overwhelming majority, 94% of Americans, value creativity more than they value intelligence, compassion, humor, ambition, or beauty (Haberski 2013). Creativity is also complex in nature. It involves neurological, cognitive, and sociocultural elements. Many have attempted to provide succinct definitions of this multifaceted construct. Rollo May, the American existential psychologist defines creativity simply as, "the process of bringing something new into the world" (May 1975). In his discussions of creativity, he emphasizes the roles of commitment and compassion. Carl Rogers, one of the founders of humanistic psychology describes creativity as, "the emergence of a novel relational product growing out of the uniqueness of the individual … and the materials, events, people, or circumstances of life" (Rogers 1954). In his very detailed study,

Creativity: Flow and the Psychology of Discovery and Invention, Mihaly Csikszentmihalyi identifies creativity as, "any act, idea, or product that changes an existing domain, or that transforms an existing domain into a new one. What counts is whether the novelty he or she produces is accepted for inclusion in the domain" (Csikszentmihalyi 1996). Psychologist and psychometrist Ellis Paul Torrance emphasizes, "Fluency and flexibility, originality, and sometimes elaboration" (Torrance 1965). Cognitive scientist and proponent of triarchic intelligence Robert Sternberg posits that creativity is a kind of investment. In collaboration with Todd Lubart, Sternberg proposes that creative people tend to think differently than most others and decide to go off in their own direction. Because they see problems in novel ways, creative individuals take reasonable intellectual risks and challenge conventional beliefs. They buy their ideas "low" and sell their ideas, "high," promoting them later when they become more acceptable. This requires both persistence and tenacity (Sternberg and Lubart 1992). While all these definitions and comments on the nature of creativity are helpful Mark Runco's definition is perhaps the most useful. He sees creativity simply as, the development of original ideas that are useful and influential (Runco 2004).

The consistent theme in these definitions is that creativity involves processes both cognitive and social. It is seen as the development of new ideas or products that are valued. The two questions considered here are: Does dyslexia affect this process? And how might it do so?

This work attempts to pair dyslexia, which is often perceived as a disadvantage, with the complex process of the development and expression of new ideas. It examines the life experiences of five individuals who have dyslexia, and it explores the connections between their specific learning disability and their creativity. This book does not prove that the condition causes creativity, nor does it attempt to romanticize the difficulty thousands of people face every day as they work to decipher language and use it to express their ideas and feelings. However, it does recognize that the learning difference and the resulting different way of understanding the world is part and parcel of the person. The general goal of this work is to present the lives and educational experiences of five very different people by discussing how dyslexia affected their educations, creative processes, their lives, and their work.

The lives and early educational experiences of visual artists Robert Rauschenberg, Chuck Close, and Charles Ray along with playwright Wendy Wasserstein, and author John Irving are considered here. All of

them have discussed the effect of dyslexia on their lives. All five have earned international recognition for their work. They all took unique approaches to solving creative problems related to their work, and that work has in all five cases influenced the course of events in the history of art, theater, or literature

Dyslexia History

The history of dyslexia, and the understanding of this condition is closely tied to both the understanding of the development of written language and the understanding of how the brain processes language. For most of human history, language was something spoken and heard. As Yale professor of Learning and Development, Sally Shaywitz points out, "Speaking is natural, reading is not" (Shaywitz 2003, 49). Physical anthropologists posit that humans had the physical and neurological capacity to use spoken language tens of thousands of years ago (Balter 2015) and it probably emerged first in Sub-Saharan Africa (Atkinson 2011). While written language can be traced back to Mesopotamia in around 3200 BC, it is likely to have evolved independently in different parts of the world (Schmandt- Besserat n.d.). Western civilization has a long history of thousands of years of writing and in turn reading. However, the ability to read did not become widespread until about the mid-twentieth century when slightly more than half of the world's adults were literate. By the arrival of the twenty first century about 80% of the world's adults could read (UNESCO 2017).

Phrenology to Phonology

The understanding of the workings of the human brain and its role in the production of language is recent compared to the history of language, reaching back over a century and a half in time. The neurological study of language processing in the brain is usually traced back to 1861 when the clinical work of French physician Paul Broca identified a specific region of the brain responsible for language production after an autopsy of one of his patients who had difficulty speaking. Broca located and identified the language producing part of the brain near the motor cortex now referred to as Broca's area. Thirteen years later in Germany, physician Carl Wernicke, identified another area of the brain that was responsible for receptive language. Even today aphasias, difficulty with language most commonly associated with strokes, carry the names of these two pioneering scientists. Broca's aphasia is a difficulty with speaking while

Wernickes's aphasia refers to a difficulty with receptive language, particularly comprehension. Other types of aphasia associated with different areas of the brain have been identified, and this has contributed greatly to the understanding of localization of language in the brain.

Norman Geschwind, a professor of neurology at Harvard Medical School brought Broca's and Wernicke's ideas of localization together using his understanding of the history of brain studies and his own clinical work. His work extended the understanding of language abilities in the brain and the understanding of dyslexia (Geshwind 1965; Hopkins 1965).

Use of brain imaging technologies, from CT scans in the 1960s and MRI scans in the 1970s and 80s to current fMRI and PET and SPECT scans have verified and expanded clinical studies of the twentieth century. They have allowed researchers and physicians the unprecedented ability to see structures and activity inside living brains and have extended the understanding of the neurological processing of language. They hold promise for the further understanding of the diagnosis and the effectiveness of the mediation of dyslexia. These technological advances have also provided proof of the existence of something that is frequently described as a "hidden disability" (Shaywitz 2003, 87).

While neuroimaging technologies have increased the understanding of language related difficulties like dyslexia, rapid progress in the fields of behavioral and molecular genetics has also contributed to our insight. The dawn of the twenty first century and the mapping of the human genome provides another perspective on difficulties with language. Robert Plomin, one of the leaders in the field of behavioral genetics points out that "family studies" are done to show the degree of risk relatives have of developing conditions that other family members experience. These have shown that reading disabilities run in families (Plomin, et al. 2013, 175). Twin studies that take advantage of monozygotic twins with duplicate genotypes offer strong support for the genetic origin of many disorders. These studies show high concordance rates for reading disabilities (Wadsworth, Kopnik and De Fries 2000; Plomin and Kovas 2005). Statistical analyses by behavioral geneticists also indicate that dyslexia has a strong genetic component. Research related to communication disorders as defined by the American Psychiatric Association's DSM-IV (2000) indicates genetic links to both receptive and expressive language disorders. This research uses the terms receptive and expressive language disorders are used because the American Psychological Associations diagnostic manuals have not included a category specifically for dyslexia. Research indicates

that these language disorders are familial in nature (Plomin and Kovas 2005,) and chances of developing dyslexia are estimated at 40% to 60% for children if one of their parents has dyslexia (Ziegler et al. 2005).

It is not surprising that familial studies like these piqued the interest of those who study molecular genetics. The field of molecular genetics examines and seeks to understand the structure and function of genes. Geneticists conduct linkage studies that focus on the location of genes on chromosomes that are inherited together. Such studies further the understanding of the genetic nature of dyslexia. Schumacher and Hoffman (2007) have found candidate genes related to neuronal migration patterns in prenatal development that seem to be related to dyslexia. Neuroscientist Albert Galaburda (2005) explains that during prenatal development neurons move or migrate to different appropriate locations of the brain. These candidate genes seem to disrupt the movement of neurons in areas of the brain related to language processing. Brain changes resulting from neuronal migration problems result in the "abnormal processing of sounds" and this likely contributes to reading difficulties.

The Understanding of Dyslexia Over Time

The history of dyslexia is probably as long as the history of language processing and the brain. In 1877 following the clinical studies of Broca and Wernicke, Adolf Kussmaul recorded the first diagnosis of something he referred to as word blindness, a nineteenth century term that referred to the inability to recognize and understand words. Ten years later in 1887 German ophthalmologist Rudolf Berlin coined the term "dyslexia," dys meaning bad or difficult and lexia referring to reading. The term word blindness again appeared in 1896 when William Pringle Morgan published a case study in the British Medical Journal (Morgan 1896). Morgan discussed the experience of a patient named "Percy F." and suspected the familial nature of dyslexia (Kirby 2018). Just before the turn of the twentieth century, James Hinshelwood, a surgeon from Glasgow proposed that dyslexia was present at birth and resulted from differences in the angular gyrus, the part of the brain that specializes in visual and auditory processing. Hinshelwood thought these differences occurred during prenatal development and published his findings in *The Lancet (*Hinshelwood 1898*)*.

What became known as "word blindness," was also referred to as "strephosymbolia" which refers to the reversal or transposition of letters

when reading. This term was first used by Samuel Orton (1928), an American neuropsychiatrist and pathologist from Iowa. Later at Columbia University in New York, Orton studied the relationship between hand dominance and delay of language acquisition and emphasized the reversal of letters in his descriptions. Thanks to the work of Orton's wife, June Orton, the Orton Dyslexia Society was founded after Orton's death in 1949. The work of the society continues today under the name of the International Dyslexia Association. With the interdisciplinary approach of the Orton Society, the study of dyslexia became an area not just for physicians to investigate, but an area of research and concern for psychologists and teachers as well. The resulting interdisciplinary efforts also led to the idea that dyslexia could be remediated. At about the same time Anna Gillingham, noted educator and psychologist became known for her work in this area. Her work in the remediation of reading difficulties emphasized multisensory techniques, phonics, and spelling rules. Her combination of teaching techniques became known as the *Orton - Gillingham* approach. The idea that there could be different types of dyslexia and that it could be differentiated from other specific learning disabilities emerged later in the 1960's and 1970's as a result of Martha Denkla's work (Denkla 1976).

In the United States, the 1960's also brought sociopolitical change to the lives of individuals with dyslexia and their families. During the Kennedy administration, advocacy groups influenced the passing of legislation that came to be known as the *Elementary and Secondary Education Acts*. It was with the later passing of the *Individuals with Disabilities Education Act* that an understanding of learning disabilities like dyslexia started to become well known among educators and the general public. *IDEA* guarantees students' right to a free and appropriate education. Dyslexia a specific learning disability is covered by this legislation. In 1973 Congress passed section 504 which prohibits discrimination against those with disabilities. This federal law included people with dyslexia and protects their civil rights.

With these legal advances, interest in providing appropriate support to students with dyslexia increased. Efforts to understand and assist students with dyslexia to attain educational success expanded, and pedagogical approaches that combined visual, auditory, and kinesthetic approaches increased. Teachers and tutors employed multiple avenues in the process of remediation to address issues related to speaking, reading, and writing (Richardson 1992). With the use of neuroimaging techniques that became more readily available through the 1990's and early twenty-first century,

neurologists and cognitive scientists began to identify neuronal processes in specific regions of the brain associated with difficulty in language processing. In 1996, researchers using positron emission tomography were able to localize syntactic comprehension, the understanding of the meaning of language, in specific brain regions (Kaan and Swab 2002).

In the early 2000s neurological studies began to point to phonological processing problems as a primary component of dyslexia. This point of view purports that there is a difference in the timing of the auditory processing of speech sounds in the brains of individuals with dyslexia. Reading requires the brain to represent written symbols, known as phonemes, as sounds in order for comprehension to occur. Problems with the timing and automaticity of processing seem to underpin dyslexia (Ramus et al. 2003; Shaywitz 2003; Vellutino et al. 2004). Further use of neuroimaging showed that individuals with dyslexia seem to use more cortical areas of the brain when processing language than those without dyslexia (Boets et al. 2013; Shaywitz 2003).

In the late twentieth and early twenty-first centuries as computers became more readily available to the typical student, multisensory approaches combined with assistive technology and mobile applications to support students with dyslexia in the classroom (Reid, Strnadova, and Cumming 2013). These multimodal teaching approaches combined with the increased use of technology, supported increasingly popular ideas of universal design for learning. These approaches focus on making information available through multiple means, allowing for multiple means of representation, and providing multiple means for the expression of learning (Rose et al. 2006).

Advances in the study of genetics and the mapping of the human genome over the past two decades have also furthered the understanding of dyslexia. Both the process of reading and dyslexia are complex and involve the expression of many genes. Schumacher et al. (2007) found that inherited factors account for “up to 80%” of the condition. Results indicate that irregular patterns of neuronal migration during prenatal development correlate highly with dyslexia.

Clinical studies over the past 30 years also indicate that dyslexia is often accompanied by other conditions that occur more frequently in individuals with this reading difficulty than they do in the general population. Dyspraxia, a condition affecting fine and gross motor coordination, dyscalculia which affects the ability to learn and understand arithmetic,

and attention deficit hyperactivity disorder are among these co-occurring conditions (Pennington Willcutt and Rhee 2008, 207). Obsessive compulsive disorder, other anxiety conditions, and autism also occur among this population with greater frequency (Beddows 2016; Gobbo and Shmulsky 2007; Pauc 2005; Shultz 2013). All these have the potential to add to and complicate an individual's struggle to attain educational success.

For more than a century and a half, physicians, therapists, and educators have advanced the understanding of the language processing difficulty known as dyslexia. Technological advances have helped them to understand the origins of the condition and pedagogical advances have helped in the process of its remediation. It is a complicated condition often affected by the presence of other coexisting psychological and social factors. It may also afford positive features that have a bearing upon how an individual becomes involved in and implements creative processes?

Creativity

"Creativity is the fountainhead of civilization and the defining characteristic of what makes us human" (Deitrich and Harding 2016). The history of the understanding of creativity is much longer and more complicated than that of dyslexia. The ancient Greeks referred to the muses who provided guiding spirit and inspiration to poets. The Romans believed that each individual had a guiding spirit and that some possessed special talent. During the Renaissance, people believed that great artists received extraordinary qualities from god making creativity a divine gift. It was not until nineteenth century Europe when logic and empiricism influenced scientific thought that creativity was viewed in a more "scientific" way (Simonton 1996, 5).

Charles Darwin influenced his cousin Francis Galton who argued for "hereditary genius" in the late 1800s. Galton attempted to measure a variety of human qualities including creativity. His work was known as the study of "genius and productive creators" (Albert 1975). Galton believed that biological processes underpinned intellectual processes and that related abilities were genetically determined. While his overall theory lacked consideration of key developmental concepts and the resulting idea of eugenics proved to be a failure that was later debunked (Simonton 1991), in the process of his research Galton developed many of the methods commonly used today in the field of descriptive statistics. Later

with the emergence of psychology as a science, William James who became one of the first psychology professors in the United States researched creativity, and it became associated with the new discipline (Simonton 2018). In the 1920s, Lewis Terman launched a longitudinal study on the relationship between creativity and intelligence (Terman 1922, 1959). He spent much of his life developing tests of intelligence. While he believed intelligence to be inherited, and he often used testing for less than positive ends. His longitudinal study indicated that most individuals with high intelligence as measured by his standardized test did well socially. However, it would be a stretch to tie IQ to recognized creative acts. Generally, in Terman's studies, creative architects, mathematicians, scientists, and engineers, usually scored no higher than their less creative peers. (Terman 1959). There is clearly more to creativity than intelligence as measured by standardized IQ tests.

Gestalt psychologist Max Wertheimer discussed "productive thinking" in the 1940s. He considered this to be a kind of problem solving that considers elements of a situation or problem and is driven by intrinsic motivation. After World War II psychologists turned toward the study of qualities like creativity using psychometrics and instruments. One example, The Minnesota Multiphasic Personality Inventory (MMPI) was used to assess personality types some of which were thought to be connected to creativity. In the second half of the twentieth century a continued shift to studies that paired personality and creativity occurred (Barron and Harrington 1981). During the same time period the "Big 5" concept of personality traits, also known as the "Five Factor Model" became popular. One of those five factors is openness to experience emphasizes imaginativeness, sensitivity to beauty, and flexibility (Costa and McCrae 1992). People with high levels of openness to experience are more likely to be inventive and creative (Kaufman and Gregoire 2015).

Definitions from the field of cognitive psychology are more complex. Myers and DeWall (2018, 339) proposed that creativity is the ability to produce something novel and valued. Runco (2004) defines it among other things as being part of a problem-solving process, a useful and effective response to evolutionary change. A decade later, in the 1990's Robert Sternberg, who developed the three pronged or triarchic view of intelligence, emphasized five elements necessary for creativity: expertise, imaginative thinking, a venturesome personality, intrinsic motivation, and a creative environment (Sternberg 1999; Sternberg and Lubart 1992; Sternberg and Williams 1996).

Much of current cognitive psychology's view on creativity involves the study of divergent thinking. It refers to a way of solving problems where in "a variety of possible solutions are proposed in an effort to find one that works" (Silva 2008). Ideas are generated to explore many possible solutions. Runco (2014) describes the dimensions of this sort of thinking as including ideational originality and flexibility. Daniels and Freeman (2018) also discuss interconnected reasoning, which involves the ability to see situations from several different angles and make connections that may elude others as well as being able to view the big picture.

The Neurology of Creativity

As with dyslexia, the biological substrates of creativity are of interest to neuroscientists. Runco (2004) reports some basic findings on creativity and the brain. Not surprisingly both hemispheres of the brain are involved in creative thinking (Katz 1997). In a review of several EEG and neuroimaging studies Dietrich and Kanso (2010) found that several regions of the brain are involved, and that related processes are not particularly focused in the right hemisphere. This debunked the popular stereotype that creativity has its origins in the right hemisphere of the brain. Runco's research asserts that "Both hemispheres are involved in divergent thinking events and are accompanied by related increases and decreases in neural activation in central, temporal and parietal regions. These indicate semantic and recombination of semantically related information (Runco 2014). Benedek et al. (2013) identify activity in left prefrontal lobes as being active during idea generation. Recent research also examines the relationship between frontal lobes – usually associated with decision making and executive functions and the default mode network. This default mode network includes brain regions that interact when a person is at rest, in the creative process, or the process of divergent thinking (Beaty et al. 2014). Arne Dietrich (2004) emphasized the complexity of creativity as a neurocognitive event with different types of creativity involving several different cortical areas.

This research related to these areas of the brain raises questions about brain areas that are related to semantic processing. Are these differences in the circuitry of the brains of dyslexics in the same areas related to creativity? This led to a further question- are some of the results of these neurological differences possible leads to understanding abilities in divergent thinking and creativity? This question and related opinions have

been explored over the past few decades and will likely continue to be an area of fruitful exploration in the future.

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CHAPTER TWO

DYSLEXIA AND CREATIVITY: THE POSSIBILITY OF CONNECTIONS

Is there something *different* about creative people? This question has held the interest of philosophers and psychologists for as long as the two disciplines have existed. It seems that great thinkers in both disciplines have held tightly to the famous comment attributed to Aristotle, “No great genius has ever existed without a touch of madness.” Psychoanalyst Adam Phillips (2005) states that “No artist is remembered for his sanity.” While these are seemingly extreme views on “madness” and “sanity” they seem to have held sway over public opinion for many years. Social scientists often use case studies to draw connections between creativity and personality traits which are sometimes unusual.

The use of case studies in the social sciences is a long tradition. Despite their methodological limitations, case studies have also been integral in the fields of medicine, law, and history. From Jean Marc Gaspard Itard's "Wild Boy of Aveyron" through the contributions of scholars like Hermann Ebbinghaus, Alexander Luria, Virginia Axline, and Oliver Sacks, case studies continue to find their way into the literature. They fascinate because they allow a close look at both a subject's life and work. They allow for the examination of an individual's childhood, family, education, and historical context. Simply put, they let us see an individual holistically. While case studies appeal to our desire to know the person under consideration, they also carry the limitation of being difficult to generalize from. To take the findings about an individual or a few individuals to the level of theory that explains thinking, personality, and the process a person uses in relation to creativity as a concept presents some problems.

There have been several case summaries that explore the relationship between creativity and disorder. Perhaps the most well-known work on the topic was done by Felix Post in the 1990s. He dedicated much of his life to a popular and wide-ranging study entitled *Creativity and*

Psychopathology: A Study of 291 World Famous Men (Post 1994). His work considered biographies of notable figures from the eighteenth, nineteenth, and twentieth centuries. Post analyzed existing detailed biographical accounts for signs of psychological disorder. He found that among this group, functional psychosis was less frequent than was reported in the general population statistics. He also found that the members of this group were: driven, methodical, tended to persevere, and had a gift for sociability. He noted that artists and writers experienced personality disorders more frequently than creative individuals working in other fields. Writers experienced depression more frequently than others. Artists, writers, and composers were also more likely to exhibit substance abuse disorders, mostly involving alcohol. Using a similar approach, psychiatrist and Brown University professor Arnold Ludwig analyzed more than 1,000 biographies of eminent individuals in very disparate fields and concluded that a relationship existed between non-debilitating emotional distress and creativity. He felt that an underlying sense of unease may instill a sense of urgency in an individual and motivate creative behavior (Ludwig 1995).

Several other influential researchers in the field of cognitive psychology have used case studies to support their theories. Kay Redfield Jamison, (1993, 1995) a clinical psychologist who is well known for her very personal account of bipolar disorder, wrote an in-depth discussion of the relationship between creativity and severe experiences that range from depression to mania. Her book *Touched with Fire* considers the neuroscience and genetics of the disorder while examining the lives of important figures in the history of literature and art.

Mihaly Csikszentmihaly (1990, 1996) in his two best known works, *Flow* and *Creativity* discusses the state of concentration that allows creative events to occur. "Flow" as he refers to it, is the full focus that results from intrinsic motivation and internalized understanding of what works. He also considers the role of culture's symbolic domain and those who recognize and validate the creative work. Csikszentmihaly reinforces his ideas through interviews with more than 80 recognized individuals from the fields of art, politics, business, and science. The reports of those individuals who often find themselves steeped in their creative work support his theory.

Howard Gardner (1993, 1994, and 2007) is a cognitive scientist best known for his theory of multiple intelligences. This theory commonly referred to as MI, takes the idea of intelligence and extends it beyond the