

2011

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Recommended Citation

Drapeau, Christopher W. and DeBrule, Daniel (2011) "The commonalities of creativity and suicide in college students," *Modern Psychological Studies*: Vol. 17 : No. 1 , Article 8.

Available at: <https://scholar.utc.edu/mps/vol17/iss1/8>

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The Commonalities of Creativity and Suicide in College Students

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Abstract

More than 1,000 college students die by suicide each year. Commonly found among these suicides are students who are highly creative, mentally ill, and attending highly competitive schools. Research has demonstrated that the risk of suicide is most acute in students displaying hypomania, impulsivity, psychosis, and a personality trait called psychoticism. Interestingly, these four risk factors are also exhibited in highly creative college students. Hypomania was the most significant contributor to creativity and suicide among the four variables. Elevations in hypomanic symptoms were found among the most creative students and those at risk for repeated suicide attempts. A self-report questionnaire entitled the Hypomania Checklist-32 (HCL-32) identifies two dimensions of hypomania (active/elated and irritable/risk-taking). Future research should investigate potential relationships between the two dimensions, and creativity and suicide in college students. The active/elated dimension may contribute to higher creativity while the irritable/risk-taking dimension may lead to increased risk for suicidal behavior.

Keywords: Creativity, Suicide, College Students, Psychosis, Psychoticism, Hypomania, Impulsivity.

The Commonalities of Creativity and Suicide in College Students

More than 1,000 suicides occur on college campuses each year in the United States (American Association of Suicidology [AAS], 2009a). For each completed suicide among the general population, there are 25 suicide attempts (McIntosh, 2010). Assuming that the total number of suicides among college students was 1,000 for a given year, the total annual

amount of suicide attempts on college campuses would equate to around 25,000. Even more alarming is the estimated rate of 100-200 suicide attempts per completed suicide in the 15-24 year old age group (CDC, 2007). Apply the 1,000 suicides to the 15-24 year old group and the total suicide attempts for the year increase to anywhere from 100,000 to 200,000.

When splitting the 15-24 age group in half, those in the 20-24 year old range have a rate that almost doubles the suicide rate of 15-19 year olds (McIntosh, 2009). As a group, young adults aged 18-25 had more serious thoughts of suicide, planned more suicides, and attempted more suicides than any other age group in 2008 (National Survey on Drug Use and Health [NSDUH], 2009).

In 2008, a little more than 60% of all American college students fell within the 18-25 age range; those 25 and older comprised about 37% of the student population (United States Census Bureau, 2009). According to Webb et al. (1989), suicide attempts among youth occur most often by those who attend highly competitive schools, have extraordinary creative abilities, superior grades, and have recently experienced a drop in cumulative grade point average (GPA). Also, Seiden found that undergraduate students who ultimately died by suicide achieved more academically than their peers (1966).

The student, or youth, most at risk for suicide can experience more than just one of the five variables listed previously. In a highly competitive academic environment, a slight drop in GPA can bring students an overwhelming sense of stress and anxiety. These emotions could lead the student to think of suicide as a seemingly viable option to end the pain of perceived failure (Weisse, 1990).

Some students experience a strong sense of self-dissatisfaction and failure when their performance is incongruent with their unrealistic self-imposed standards or goals (Weisse, 1990). Making every effort to achieve perfection can become an obsession. This insatiable perfectionist drive can prove dangerous if coupled with self-criticism (Hamilton & Schweitzer, 2000).

Research has shown that perfectionism and self-criticism can lead to suicidal ideation and psychopathology (Hamilton & Schweitzer, 2000; O'Connor, 2007). Passive perfectionism is the type of perfectionism that leads to the most severe symptoms of depression and greatest risk for suicide (Hamilton & Schweitzer, 2000). This type of perfectionistic individual has an intense fear of making a mistake, regularly second-guesses decision-making, and has a difficult time avoiding procrastination (Hamilton & Schweitzer, 2000). A large number of highly successful students are most stressed and anxious when in school (Weisse, 1990). The stress and anxiety may increase as the level of academic competitiveness increases.

Lajoie and Shore (1981) wonder if intellectual ability plays a role in forecasting suicidal behavior in students at highly competitive schools. Anderson, Allebeck, Gustafsson, and Gunnell (2008) found an increased risk of suicide in men who had a low intelligent quotient at the age of 13, and a decreased risk in those with higher intelligent quotients (IQ) at that age. Interestingly, a decreased suicide risk was found among low IQ men with histories of psychosis. Apparently, a low IQ serves as a protective factor while a high IQ increases the risk of suicide in men with histories of psychosis (Anderson et al., 2008).

Alterations in prefrontal activation are commonly found in those with psychosis or a predisposition for developing psychosis; these alterations were also found in participants exhibiting high levels of academic performance

and creative abilities (Karlsson, 2004; Kéri, 2009). Relatives of psychosis prone individuals also exhibited heightened abilities in academic and creative performance. According to Schwartz (1990), psychosis increases the risk for suicidal behavior among college students. The finding by Webb et al. (1989) that links the unusually creative college student to suicide is thought provoking. Psychosis may link creativity and suicide within the college student population. There may be additional commonalities that bind the two variables together. The present paper will investigate the commonalities among creativity and suicide within the college student and young adult population.

Creativity and College Students

Creativity is displayed in various ways among college students. It can be defined as a process distinguished by an unusual imaginative ability or an originality of thought and design ("creative," 2010). For researchers, explanations of what influences creativity depends on how creativity is defined and how it is measured within experiments. For example, those scoring high on convergent thinking tasks are considered to be scientifically, or intellectually, inclined rather than "creative," while those scoring high on divergent thinking tasks are considered creatively or artistically inclined (Gibson, Folley, & Park, 2009; Lloyd-Bostock, 1979). Convergent thinking is defined as thoughts which are methodical or deductive ("convergent thinking," n.d.) while divergent thinking is defined as thoughts that are innovative or unusual ("divergent thinking," n.d.). Convergent and divergent thinking tasks involve activities that are meant to identify the participant's thinking style.

Some researchers believe that divergent thinking tasks are accurate measures of creative thinking in experimental subjects, while others believe that the tasks measure creative potential more than anything else (Runco, 2008). Convergent thinking is believed to be more

synonymous with IQ than with creativity. Convergent thinkers are known for their academic success and conventional behavior (Clark, Veldman, & Thorpe, 1965; Weisse, 1990). The division of thinking among the arts and sciences, or the creative and the intellectual, does not assume that creativity can only be present within the arts.

According to Root-Bernstein and Root-Bernstein (1999), intuition and emotion are essential elements of creativity in every discipline. Gardner (1993) explains what is meant by intuition and emotion when he explains that the work of creative individuals manifests itself after intense periods of insight and passionate dedication to overcoming difficulties and making ideas tangible. Brophy (2000-2001) believes that finding the meanings and solutions to difficulties requires divergent thinking while convergent thinking leads one to choose and refine those meanings and solutions. The types of creativity may appear to differ, but the concept is the same among all disciplines. What may be creative to one may not appear creative to another. But if a novel idea or creation one day appears, then creativity has manifested itself.

The process of creativity requires two essential parts, activity and achievement (Ludwig, 1995). Activity characterizes individual or group effort (i.e., the work required to test new ideas, create new products, etc.) while achievement represents the consequence of efficient effort (i.e., new inventions, new discoveries, new records, etc.). Ineffective creative activity may not always lead to creative achievement, but creative achievement will always be reliant upon some form of creative activity (Ludwig, 1995).

According to Runco (2009), individuals with elevated creativity also exhibit high levels of motivation. The devotion they exhibit in improving their talents, and their respective fields of study, is an important aid to their extraordinary achievements. The positive correlation between motivation and level of

creativity should be no surprise; many distinguished creators failed numerous times before discovering the illustrious invention that lifted them to eminence. The motivation to see their ideas succeed may have been one of the many attributes that helped them persevere in the face of continuous disappointments. As Gardner observed, the "exemplary creator" is one who is "alert ... hardworking, and committed obsessively to their work" (1993, p. 364).

It should be noted, though, that having high levels of motivation will not guarantee creative achievement; creativity is a condition that requires other factors in addition to high levels of motivation. Some believe that creativity is produced by the combination of one's environment, cognitive abilities, personality traits, intrinsic motivations, emotions, and resources (Runco, 2009). Root-Bernstein and Root-Bernstein (1999) explain that, universally, the same ways of thinking are employed by creative individuals; these tools grant them the ability to transform original thoughts into expressible forms of "language" which can arouse new ideas in others.

Drevdahl (1956) discovered that creative individuals generally seemed to share a withdrawn, quiet, and non-conformist temperament in a study involving graduate and advanced undergraduate students. Feist (1998) noticed that the highly creative were impulsive individuals open to new experiences, self-accepting, meticulous, and hostile. Perhaps the openness to new experiences, the impulsivity, and the withdrawn and eccentric temperament is what leads the highly creative student to a belief that suicide may be allowable in certain situations. This is not meant to imply that all creative students will believe that suicide is allowable in some instances. Among the personality traits identified in highly creative college students, research has identified impulsivity as a lone risk factor for suicidal ideation or behavior (Conner, Meldrum,

Wieczorek, Duberstein, & Welte, 2004; Molock, Kimbrough, Lacy, & McClure, 1994).

Theatrical and impulsive personality traits have been observed among those displaying spontaneous or unplanned suicidal gestures (Foreman, 1990). Impulsive traits are also found among several mental illnesses. Two that are noteworthy are attention deficit hyperactivity disorder (ADHD) and the hypomanic phase of bipolar type-II disorder (American Psychiatric Association, 2000). Hypomania is defined as periods of elated or irritable mood that last for at least three days. Both illnesses have established relationships with suicidal behavior and creativity in populations of children and young adults (Kaufman, Plucker, & Baer, 2008; Murphy, Barkley, & Bush, 2002).

The influence of ADHD on creativity is similar to that of bipolar disorder. Simeonova et al. (2005) found that children of parents with bipolar disorder displayed higher levels of creativity than creative children with mentally healthy parents. Interestingly, the children of the bipolar parents who had ADHD displayed levels of creativity similar to those children diagnosed with bipolar disorder (Simeonova et al., 2005). In another study, preschool children of parents with bipolar disorder demonstrated a higher risk of developing ADHD and bipolar disorder than preschool children of healthy parents or parents with non-bipolar psychiatric disorders (Birmaher, Axelson, Goldstein, Monk, Kalas, Obreja, et al., 2010).

Similar symptoms shared among the bipolar and ADHD children may explain the parallel creativity scores. Shapiro and Weisberg (1999) found that hypomania was associated with increased creativity scores, but the participants who displayed hypomania in the study did not meet the criteria for a diagnosis of a bipolar disorder. Healey and Rucklidge (2006) discovered that among creative children with and without ADHD, those not diagnosed with ADHD who displayed symptoms of ADHD had higher creativity

scores than the ADHD group. The findings of these two studies (Healey & Rucklidge, 2006; Shapiro & Weisberg, 1999) seem contradictory. As mentioned previously, it may be the case that similar symptoms displayed in hypomania and ADHD (i.e., impulsivity) can explain the high levels of creativity, but a genetic predisposition to bipolar disorder could have an influence on creative levels in individuals with a family history of the illness.

High energy, impulsivity, risk-taking, sensation-seeking, task absorption, racing thoughts, and high ideational fluency are associated with creativity (Shapiro & Weisberg, 1999). High energy was associated with creativity in other studies (Isen et al., 1987; Lyubomirsky et al., 2005), as was ideational fluency (Guilford, 1967). The variables of risk-taking and sensation-seeking would be consistent with the creative personality as described by Drevdahl (1956) and Feist (1998). It should be noted that high energy, impulsivity, risk-taking, sensation-seeking, and racing thoughts are all symptoms of hypomania (American Psychiatric Association, 2000; Jamison, 1993).

Also associated with creativity are reduced levels of latent inhibition (LI; Simonton, 2009a). Latent inhibition is defined as an individual's ability to ignore irrelevant activity in his or her immediate environment (Carson, Peterson, & Higgins, 2003). Low levels of latent inhibition have been identified in creative achievers and psychotic individuals (Eysenck, 1998). Psychosis is defined as an unbalanced state of mind that results in a loss of contact with reality (psychosis, 2010). This state of mind can be found in schizophrenia, schizoaffective disorder, and bipolar I disorder (Basco, 2006; Comer, 2010).

According to Eysenck (1998), reduced latent inhibition is found in those with psychosis and those with a personality trait called psychoticism. Individuals exhibiting high levels of psychoticism tend to be impulsive, hostile, cold, aloof, insensitive,

tough-minded, and creative (Eysenck, 1998). Some of these traits appear to be a combination of the traits which Feist (1998) and Drevdahl (1956) found present among highly creative college students in their respective samples.

Reduced latent inhibition appears to be the main variable that links creativity to psychosis and psychoticism (Simonton, 2009a). It is possible that the loss of contact with reality in psychosis and the aloofness observed in those with psychoticism could be attributed to a reduction in latent inhibition. As mentioned earlier, those with psychosis, or a predisposition towards it, typically display variations in prefrontal activation that have been found in highly creative individuals; superior creative abilities have also been observed in relatives of psychotic individuals (Karlsson, 2004; Kéri, 2009). Psychoticism has displayed positive correlations with innovative behavior and divergent thinking (Eysenck, 1998). Similar to psychosis, the personality trait has also been observed in schizophrenia and bipolar disorder (Porzio, 2009).

The creative college student is described as an aloof, impulsive non-conformist (Drevdahl, 1956; Feist, 1998). This personality may not be apparent in every creative individual, but research has shown that young adults in the college population share these traits (Drevdahl, 1956). Mental illnesses such as bipolar disorder and ADHD were found in creative individuals as was psychosis, psychoticism, and the hypomania (Eysenck, 1998; Healey & Rucklidge, 2006; Karlsson, 2004; Kéri, 2009; Shapiro & Weisberg, 1999; Simeonova et al., 2005; Simonton, 2009a). Research has shown that some of these commonalities of creativity increase an individual's risk for suicide, specifically bipolar disorder, hypomania, impulsivity, psychoticism, and psychosis (Bryan, Johnson, Rudd, & Joiner Jr., 2008; Jamison, 1993; Lester, 1990b; Schwartz, 1990; Singh & Joshi, 2008).

Suicide and College Students

The first published study on suicide occurring in American universities did not appear until 1932 (Slimak, 1990). In 1927, there were at least 26 suicides by college students within the first few months of the year (Slimak, 1990). Beeley, the author of the first published study, examined the suicidal outbreak in order to determine if there was a "wave" of suicides in 1927 among college students. Even though Beeley's (1932) results did not demonstrate a "wave" of suicides among university students in 1927, he felt the need to demand all American universities to pay greater attention to the mental health of their students.

Today, suicide has been identified as a major risk among college students, especially those who develop a mental illness (AAS, 2009a; The Jed Foundation, 2002). The large number of suicide attempts among younger students and the growing number of suicides among older students are a cause for concern. One way to decrease the risk of suicide on college campuses is to teach the warning signs of suicide to all entering students. "Suicide prevention is like fire prevention" and the only difference between the two "is that the prodromal clues for fire prevention have become an acceptable part of our common-sense folk knowledge; we must also make the clues for suicide a part of our general knowledge" (Shneidman, 1965, p. 257). General knowledge of major symptoms of mental illness would also contribute to suicide prevention. Mental illnesses, such as bipolar disorder and schizophrenia, have demonstrated an age of onset as early as 18-24 years of age (Comer, 2010; Jamison, 1993). The highest percentage of college students in the United States lies within the 18-24 year old age group (United States Census Bureau, 2009).

According to Silverman (1997), the suicide rate among college students is 7.5 per every 100,000 students. The students identified as most at risk for suicide are Asian or Hispanic males under the age of 21 who develop a mental illness either before or during college.

The young age is somewhat surprising due to the recent rate of suicide among 20-24 year olds being reported as close to 13 per every 100,000 while those aged 15-19 had a rate of 7.3 per every 100,000 (AAS, 2009a). Evans et al. (2003) report that the suicide rate among 19-24 year olds enrolled in college is higher than 19-24 year olds not enrolled, but other studies suggest that it is actually the other way around (Barrios, Everett, Simon, & Brenner, 2000; Silverman, 1993). Foreign students in American and British schools during the "1950s" had a suicide rate vastly higher than the current suicide rate of college-attending and non-college-attending young adults combined. The "1950s" suicide rate for foreign students was 80 per 100,000 (Evans et al., 2003).

Silverman et al. (1997) found that college students older than 25 years had a much higher risk of suicide than students younger than 25 years old. Their study of suicide on Big Ten college campuses in 1997 found a suicide rate of 9.1 per 100,000 among female graduate students and 11.6 per 100,000 among male graduate students. The rate of suicide among female graduate students is almost double the national suicide rate of 4.6 per 100,000 for women in general (Suicide Prevention Resource Center [SPRC], 2004).
Suicide and Young Adults

In the United States, suicide is the third leading cause of death for 15-24 year olds (CDC, 2007), with estimations of one youth suicide every 125 minutes (AAS, 2009a). As mentioned earlier, there are 100-200 suicide attempts for every youth suicide (CDC, 2007). The total number of suicides in 2007 for 15-24 year olds was 4,140 (McIntosh, 2010). That total would place the number of youth suicide attempts anywhere from 414,000 to 828,000 attempts in one year. Some studies have shown that those who attempt suicide once are at a higher risk of attempting again in the future (Bryan, Johnson, Rudd, & Joiner, 2008; Géhin, Kabuth, Pichené, & Vidailhet, 2009; Shneidman, 1985).

Sixty-five adolescents who were admitted to the Nancy Children's Hospital for attempting suicide between January and December of 1994 completed a questionnaire 10 years after the initial admission (Géhin et al., 2009). The participants included 54 girls and 11 boys with an age range of 11 to 19 years of age. Two questionnaires were mailed to the home of each participant; one of the questionnaires was for the participant and the other was for the participant's parent or guardian. The questions were grouped into three sections. One section asked the participant about his or her family life; other sections assessed professional life and schooling, and the participant's physical and mental health. Géhin et al. (2009) obtained information on only 36 of the participants and found that most of the participants attempted suicide again the year following the 1994 hospital admission; of the 36 participants, two girls died by suicide. Géhin et al., (2009) believe that a suicide attempt in adolescence will predict future attempts within 10 years after the initial attempt.

Bryan et al. (2008) suggest that suicidal behavior becomes more frequent when past attempters experience stressful life events. They conducted a study that included 127 participants, with a mean age of 22, who had a history of at least one previous suicide attempt. The participants went through a clinical interview, structured diagnostic interview, and standardized assessment at least three days after the foremost suicide attempt. After the interviews, they completed the Modified Scale for Suicidal Ideation, Beck Hopelessness Scale, Beck Depression Inventory, and the Millon Clinical Multiaxial Inventory. The results of the study indicated that elevations in hypomanic symptoms could significantly foretell prospective multiple attempters. Bryan et al. (2008) noted that 43% of the potential multiple attempters met criteria for a diagnosis of bipolar disorder.

Current statistics indicate that there are four female suicide attempts per every male attempt (McIntosh, 2010). If hypomania is linked to multiple suicide attempts, and women are more likely to attempt than men, then it would confirm research which shows that hypomania is more prevalent among women (Curtis, 2005). With this in mind, it is interesting that the participants in the Bryan et al. (2008) sample were mostly male participants (81% male), with 43% of the males in the multiple attempter group showing elevations in hypomanic symptoms. It is currently unknown, but perhaps hypomania is equally prevalent among both genders. It may be that females are diagnosed more often because they are more likely than their male counterparts to seek help for symptoms of mental illness. More research is necessary in order to ascertain whether a difference exists in the presentation of hypomania among males and females.

If there are 418,900 to 837,800 suicide attempts among 15-24 year olds every year, then it is imperative that we look for elevations in hypomanic symptoms. It is also important to stay cognizant of the warning signs of an impending repeated attempt, and pinpoint an internationally cohesive definition of suicide and suicide attempts (Bryan et al., 2008; Géhin et al., 2009; Shneidman, 1985).

According to Shneidman, a suicide attempter is one who "sought to commit suicide and fortuitously survived" (1985, p. 17). There seems to be a wide variety of definitions for what qualifies as a suicide attempt (De Leo et al., 2006). The lack of consistency in defining a suicide attempt may not have been taken into consideration with the total number of suicide attempts estimated. Regardless of how an attempt is defined, suicidal ideation and behavior still need to be taken seriously whether it is a serious intention of killing oneself or an indirect plea for help. A universal definition is necessary to assure better treatment and assessment methods for potential multiple attempters, and to help researchers uncover

more important indicators and risk factors among suicide attempters (Silverman et al., 2007).

Other Risk Factors

A number of variables can generate suicidal behavior in college students. Several of these variables include mental illness, psychosis, rumination, substance abuse, a feeling of hopelessness, a decrease in self-confidence and self-worth, psychological pain due to poor academic performance, and a general feeling of not being loved or wanted (Evans et al., 2003; Schwartz, 1990; SPRC, 2004). The personality traits of psychoticism and neuroticism have also been associated with suicide (Singh & Joshi, 2008; Slimak, 1990). Many of the young adults who die by suicide are described as impulsive risk-takers who abuse alcohol and illegal drugs, while college students who die by suicide are described as quiet, friendless, socially isolated individuals with depression (Evans et al., 2003; Seiden, 1966). A few variables that suicidal college students struggle with are anxiety, insomnia, familial rejection, and perfectionism (Evans et al., 2003).

The suicidal college student shares similarities with creative individuals. Feist (1998) discovered that anxiety was common among creative artists while Walker, Koestner, and Hum (1995) found that creative achievers had higher levels of depression and impulsivity than less creative individuals. Interestingly, Phelps once stated that it was the happiest individuals who were able to produce the most fascinating thoughts (as cited in Lyubomirsky, King, & Diener, 2005, p. 830). According to Phelps, a suicidal individual with depression most likely would not have interesting, or creative, thoughts. But the research by Feist (1998) and Walker et al. (1995) indicate that creativity can exist among those with personality traits that are typically not found among the happiest of individuals. It may be

possible for high levels of creativity to exist among college students at risk for suicide.

Research has determined that there are specific traits, mental illnesses, and other variables which can help predict and prevent suicide on college campuses (SPRC, 2004). The suicide rate among college students is 7.5 per every 100,000 students, with students over 25 being at greater risk for suicide than those under 25 (Silverman et al., 1997). Interestingly, hypomania, impulsivity, psychosis, and psychoticism are found among the creative college student and the student at risk for suicide. These variables may be the commonalities that bind creativity and suicide together within the college student population.

The Commonalities

According to Runco, there have been many “unambiguously creative persons [that] have committed suicide” (1998, 639). Clearly, not every creative individual demonstrates suicidal behavior or tendencies. There are specific creative professions and temperaments that have been linked with suicide and a shorter lifespan. These include artists, writers (especially poets), children with high intelligence quotients, gifted adolescents, highly creative college students, and individuals exhibiting artistically creative or hypomanic temperaments (Bryan et al., 2008; Cassandro, 1998; Delisle, 1986; Domino, 1988; Gust-Brey, & Cross, 1999; Jamison, 1993; Kaufman, 2003; Kaufman, & Baer, 2002; Lester, 1990a, 1991; Ludwig, 1995; Preti, & Miotto, 1999; Runco, 1998; Shneidman, 1971; Simonton, 2009a; Slaby, 1992; Stack, 1996, 1997; Weisse, 1990; Winner, 2000).

Among highly creative college students, suicide is positively acknowledged more often than amongst college students exhibiting less creativity (Domino, 1988). This does not imply that one has to be creative in order to die by suicide, or to view suicide in a non-judgmental way. The creative ability requires an openness of mind that allows the unconventional to

overshadow the conventional. If the ordinary consumes the mind, then there will be no room for novelty. The openness of mind that creative and gifted students display may be what has led them to be more accepting of suicide than their less creative peers. Nevertheless, there are certain commonalities among adolescents and certain age groups of college students that link suicide and creativity. As mentioned previously, hypomania, impulsivity, psychosis, and psychoticism have been found among creative students and suicidal students.

Hypomania

A number of studies have shown that a hypomanic temperament is associated with high levels of creativity (Furnham, Batey, Anand, & Manfield, 2008; Lyubomirsky et al., 2005; Schuldberg, 2000-2001; Winner, 2000). According to a study by Schuldberg (2000-2001, p. 14), hypomania had the “highest correlations with creativity test scores” of any of the other traits in the study. Furnham et al. (2008) found similar results and suggested that the resulting correlates of creativity may be largely dependent upon the type of creativity measure utilized. Hypomania was related to divergent thinking, self-reported creativity, and creative leisurely pursuits but was not related to successful academic performance. Furnham et al. (2008) believed that hypomania would lead to poor academic performance but high levels of divergent thinking.

According to Winner (1996, 1997), internally motivated and talented children exhibited “almost manic” levels of energy in the subject, or domain, that they felt inclined to pursue (as cited in Winner, 2000, p. 162). Apparently, the most creative individuals display hypomanic or “elevated moods ... without symptoms of depression” (Lyubomirsky et al., 2005, p. 830). The most distinguished of the creators are believed to be characterized by confidence and supremacy, personality traits that are in full force during periods of hypomania (Jamison, 1993, 1995;

Lyubomirsky et al., 2005). The relationship which hypomania shares with creativity has mystified people for many years. The fact that hypomania is a symptom of a mental illness has fueled debates over the possible role that mental illness may play among highly creative individuals. While hypomania has been linked to creativity, critics of the "mad genius" hypothesis have strongly opposed any idea indicative of an involvement of mental illness in the creative process (see Schlesinger, 2002a, 2002b, 2003, 2009).

According to Schlesinger (2009), most of the evidence of a link between mental illness and creativity is blindly cited by many researchers from the works of Anderson (1987), Jamison (1993), and Ludwig (1995). The popular culture's acceptance of the mad-genius hypothesis has led researchers and individuals to overwhelmingly accept it without critically evaluating the methodology of the oft cited Anderson, Jamison, and Ludwig (as cited in Schlesinger, 2009, p. 62). Indeed, the fact that Jamison has bipolar disorder has prompted Schlesinger to suspect that Jamison is "sparked ... to prove that all geniuses are bipolar" (2009, p. 68).

Schlesinger did a study which entailed asking "jazz artists" about the supposed mental illness-creativity link and found that the jazz artists believed that there is "a specialness among creatives" that is not due to any type of pathology (2003, p. 151). The heart of the argument that Schlesinger (2009) made about the suspicion of Jamison trying to prove that those with bipolar disorders are geniuses can be made about her own jazz artist study. Schlesinger is not just a psychologist trying to debunk the creativity-mental illness link; she is also a classical pianist and jazz artist (All About Jazz, n.d.).

One issue with the work of Schlesinger regarding the creativity-mental illness link is that she has not researched artistic professions outside of musicians that have been associated with mental illness. While she has cited a few

researchers who are skeptical of the link, she has not done any scientific research of her own (Schlesinger, 2002a, 2002b, 2003, 2009). According to Simonton, an inclination towards developing mental illness should be highest among poets writing in a "highly emotionally expressive style" (2009a, p.445). It also should be noted that Anderson (1987) and Jamison (1993) studied writers, not musicians. Although Schlesinger presents compelling arguments, she has yet to scientifically debunk the creativity-mental illness link among artistic professions outside of jazz artists.

Research has yet to demonstrate high levels of creativity among every individual exhibiting hypomania. There may be different dimensions of hypomania that could separate the creative students from the suicidal students. It may also be possible that creativity is a genetic component that is activated or accentuated in some individuals with hypomania.

The creativity-mental illness argument may be debatable, but the suicide-mental illness link is certainly not debatable. AAS reports that two thirds of suicides are completed by individuals who were depressed at the time of their death (AAS, 2009). Bipolar disorder is also a risk factor for suicide among college students and tends to develop, in most cases, within the ages of 17-25 (Williams, Belnap, & Livingstone, 2008). It is estimated that 25-50% of patients with bipolar disorder attempt suicide (Jamison, 1999).

Affective illnesses such as bipolar disorder and depression are greater risks for suicide than any other psychiatric disorder (Jamison, 1999). Among bipolar disorder, mixed states are labeled the most dangerous states due to a mixture of hypomania and moderate to severe depression. Many depressed individuals who die by suicide do so when symptoms begin to improve (Jamison, 1999). Apparently, the increased energy that accompanies improvement gives the suicidal patient enough vitality to carry out the suicide.

The mixed state gives the suicidal patient the energy to make an attempt while being in the darkest abyss of depression; a combination that is sure to be lethal for someone who is looking to stop the psychological pain. Hypomania has also been identified as a risk factor for repeated suicide attempts among those who have already attempted suicide (Bryan et al., 2008).

Measures, such as the Hypomania Checklist-32 (HCL-32), have been developed in order to identify hypomanic symptoms in participants. The HCL-32 is a questionnaire specifically meant to identify hypomanic symptoms in individuals with major depressive disorder (MDD; Vieta et al., 2007), but can be administered to individuals and out-patients without MDD (Angst et al., 2005). Regarding the scoring of the HCL-32, two dimensions of hypomania are identified. One dimension is called *irritable/risk-taking* and the other is called *active/elated* (Angst et al., 2005). It was previously mentioned that hypomania is considered an important factor in heightened creativity and significant suicidality when mixed with depression, but the two dimensions may explain why hypomania has such an influence on creativity and suicide. Perhaps the active/elated hypomania leads to greater creativity and the irritable/risk-taking hypomania leads to a greater risk of suicidal behavior.

Impulsivity is one variable that plays a part in the two dimensions of hypomania and is also characteristic of individuals who have threatened suicide (Benazzi, 2007; Lester, 1990b). It has also been observed in creative individuals (Batey & Furnham, 2008, 2009; Schuldberg, 2000-2001). One hundred and ninety-three undergraduate students participated in a study designed to examine the relationship between creative productivity and creative attitudes (Taft & Gilchrist, 1970). The students' creative productivity and attitudes were assessed through responses to an open-ended question and three measures of creativity.

Taft and Gilchrist (1970) found high academic interests, extraversion, and enthusiasm in those possessing creative attitudes and impulsive, rebellious, and impractical traits among those in the creative production group. Taft and Gilchrist (1970) also found a correlation between childhood unhappiness, neurotic disorders and creative production.

Creative individuals tend to be more impulsive, hostile, open-minded, and self-assured than those deemed less creative or not creative at all (Feist, 1998). Among a sample of 107 undergraduates, Burch, Pavelis, Hemsley and Corr (2006) found that students who were visual artists were more impulsive than non-artistic students. Preti and Miotto (1999) found that poets and fiction writers had considerably higher rates of suicide than visual artists. As already mentioned, Simonton (2009a) believes that poets writing in a highly poignant, expressive style should show a higher susceptibility to mental illness. Preti and Miotto (1999) suppose that the field of poetry may be especially attractive to those with a predisposition to mental illness.

Some researchers believe that impulsivity plays a role in suicidal and homicidal aggression and non-fatal suicidal behavior (Traskman-Bendz & Mann, 2000; Williams & Pollock, 2000). Decreased levels of serotonin (a chemical in the brain that affects sex drive, feeling, and self-defensive behaviors) have been observed in those who have murdered someone or have died by suicide in a violent manner (e.g., neck slashing; Slaby, 1992). According to Slaby (1992), impulsivity may be the link that binds the association between decreased serotonin levels and violent suicide and homicide.

Similarly, Williams and Pollock (2000) found that the intensity and likelihood of suicidal behavior is tied to the individual's level of impulsivity. Impulsivity plays a large role in creativity and suicide as a personality trait and a symptom of mental illness. Williams and Pollock (2000) maintain that the difference

between how impulsivity is displayed in creativity and suicide may depend on the mental state of the individual (Williams & Pollock, 2000).

Barrios and Everett (2000) found higher levels of suicidal ideation among college students who participated in injury-related risky behaviors (e.g., driving while intoxicated, not wearing a seat belt, engaging in physical fights, etc.). Conner et al. (2004) also found high levels of suicidal ideation among a sample of 15 to 20 year old males with high levels of impulsivity.

Impulsivity plays a role in the creative and suicidal student's behavior. It is a trait of the creative producer and the creative personality (Feist, 1998; Taft & Gilchrist, 1970) and it is a trait of those exhibiting high levels of suicidal ideation (Barrios & Everett, 2000; Conner et al., 2004).

Bately and Furnham (2008) found what they called impulsive nonconformity in creative individuals, which may be the trait that leads to an exploration of ideas or responses that others would consider irrelevant. This lowered latent inhibition (LI) can lead the impulsive nonconformist to an originality that others do not attain. But if the individual is psychotic, this lowered latent inhibition can lead to a risk for suicide (Clarke et al., 2006).

Psychosis

Decreased LI, a diminished ability to ignore irrelevant stimuli, has been identified among those at risk for psychosis and those with psychoticism (Simonton, 2009a; Rybakowski, Klonowska, Patrzala, & Jaracz, 2008). In a study of 128 participants recruited through various methods (i.e. newspaper ads and university e-mail addresses), Kéri (2009) found that the most creative participants carried a genotype associated with a risk for psychosis. Interestingly, Richardson and Garavan (2009) found a link between psychotic symptoms and hypomania in a sample of 303 undergraduate students. This relationship apparently only

appeared in the irritable/risk-taking dimension of hypomania. They did not find an association between psychotic symptoms and the active/elated dimension of hypomania (Richardson & Garavan, 2009). These findings are very intriguing due to the research from past studies that reports that psychosis cannot present itself during hypomania (Benazzi, 2001).

Psychosis has also been identified as a risk factor for suicidal behavior (Clarke et al., 2006). When individuals are experiencing a psychotic state, they may exhibit hostile behavior, greater impulsivity, and experience an inability to gauge what is and is not reality (Evans et al., 2003). The risk for death by suicide for college students with psychosis is "150 times greater" than for non-psychotic students (Schwartz, 1990, p. 39). In a sample of first year college students, Engin, Gurkan, Dulgerler, and Arabaci (2009) found an increase in suicidal ideation among those displaying psychotic symptoms. Clarke et al. (2006) established that one in ten individuals in their sample with untreated psychosis attempted suicide, including inpatient and outpatient participants. Psychosis is not only displayed in suicidal students and those with notable creative achievements. Karlsson (2004) found high academic achievements among participants with psychosis and their relatives. It is possible that latent inhibition may play a role in suicide, creativity, and intellectual performance.

It is proposed by Rybakowski et al. (2008) and Simonton (2009a) that a high intelligence quotient (IQ) may be the one factor that guides low LI into creative achievement. Anderson et al. (2008) found that suicide risk and IQ had a positive correlation among men with a history of psychosis. A high IQ increased the risk of suicide while a low IQ decreased the risk of suicide, but this was only for men with histories of psychosis. Simonton (2009a) believes that a high IQ serves as a protective factor in preventing

psychopathological characteristics observed in those individuals with psychoticism.

Psychoticism

Psychoticism is a personality trait that has an established relationship with divergent thinking and creativity (Eysenck, 1998; Simonton, 2009a). In samples of creative individuals, Feist (1998) and Bachtold's (1980) results demonstrated high psychoticism scores among creative artists. Similarly, Woody and Claridge (1977) found that psychoticism was strongly related to divergent thinking, a type of thinking that is found mainly among creative artists and those with high creative potential (Booker, Fearn, & Francis, 2001; Runco, 2008; Simonton, 2009a, 2009b).

In a sample of 108 depressed participants and 105 healthy participants, Farmer et al. (2001) found that suicidal ideation had a significant association with psychoticism in depressed and non-depressed individuals. Similar results have been found outside of the US in samples of Iranian and Turkish college students (Irfani, 1978). The students thinking of suicide all had high psychoticism scores. High psychoticism scores were also found in students thinking of suicide who were described as socially non-conformist, isolated, and suspicious (Mehryar et al., 1977).

The social non-conformity and psychoticism personality is consistent with the artistic and highly creative student profile (Drevdahl, 1956; Feist, 1998). Eysenck believes that a failure to obtain high levels of LI will lead to the development of psychoticism and could lead to schizophrenia and bipolar disorder if not "counteracted by traits related to ego-strength" (1998, p. 177). The development of the latter two (schizophrenia and bipolar disorder) would significantly move an individual from a risk of suicidal ideation (psychoticism) to risks for lethal suicidal behavior.

Summary

It is estimated that over 1,000 college students will engage in fatal suicidal behavior on college campuses each year (AAS, 2009a). These suicides are most likely to occur among highly creative college students, students at highly competitive schools, and among students who develop a mental illness (AAS, 2009a; The Jed Foundation, 2002; Webb et al., 1989). Much of the research regarding college student suicide has taken place at large universities and colleges; research of students attending community and two-year colleges has been lacking (Schwartz, 2006a, 2006b; SPRC, 2004). However, Schwartz (2006a, 2006b) points out that part-time students attending four year and two year schools display a higher rate of death by suicide than full-time students at four-year institutions. Schwartz (2006a, 2006b) believes that the lifestyle of part-time students is similar to that of non-students. The suicide rate among the general population in the US is twice as high as the rate among full-time students attending four-year schools. And the general population in the US has more non-students than students (Schwartz, 2006a, 2006b).

College students today encounter more stress, more depression, and greater amounts of anxiety than students of past decades (Benton, Robertson, Tseng, Newton, & Benton, 2003). The transition of leaving a consistent familiar environment and entering an unfamiliar, competitive environment can add a significant amount of stress on the young college student which can aggravate or elicit symptoms of psychopathology (SPRC, 2004). Suicidal behavior becomes more frequent when there is an increase of stressful experiences among those who have attempted suicide in the past (Bryan et al, 2008).

Bipolar disorder, a mental illness characterized by periods of elated mood followed or preceded by periods of depression, tends to develop within the ages of 17-25 (American Psychiatric Association, 2000;

Williams et al., 2008). Research has shown that college students 25 years or older have a higher risk of suicide than students under 25 (Silverman et al., 1997). Hypomania, which is a period of elated mood in those with cyclothymia and bipolar type II disorder, has been identified as a significant predictor of future suicidal behavior in those who have attempted in the past (American Psychiatric Association, 2000; Bryan et al., 2008). Bipolar disorder may be a contributor to the suicide rates among college students as it is estimated that 25 to 50% of those diagnosed with bipolar disorder attempt suicide (Jamison, 1999). Some of the students over 25 years of age who die by suicide may have developed bipolar disorder between the ages of 17 and 25, and may have also attempted suicide numerous times prior to their self-inflicted death. According to Silverman et al. (1997), graduate students have a higher risk of suicide than undergraduates. The high stress that accompanies older students may be due to a combination of family, employment, and academic responsibilities. High stress, as mentioned earlier, can trigger symptoms of mental illness and even suicidal thoughts in those unable to cope with major life transitions (SPRC, 2004).

College students who scored high on psychoticism scales exhibited more suicidal ideation than students who scored lower (Irfani, 1978; Mehryar et al., 1977). One of the personality traits of the high scorers was social non-conformity; a trait found among creative students and impulsive individuals (Drevdahl, 1956; Feist, 1998). Creative individuals generally are withdrawn, impulsive, non-conformist, hypomanic, and open to new experiences (Drevdahl, 1956; Feist, 1998; Furnham et al., 2008; Schuldberg, 2000-2001). Burch et al. (2006) found that students in the visual arts were more impulsive, open-minded, and creative than non-artistic students. Having an open-mind, or being open to new experiences, has been associated with high

levels of creativity, especially when it is combined with hypomania (Lyubomirsky et al., 2005).

After doing an extensive review of articles on suicide and creativity in college students, it appears that hypomania holds the most significant association with creativity and suicide. Shapiro and Weisberg (1999) found that creative undergraduates displayed high energy, impulsivity, racing thoughts, and risky behavior, which are all symptoms of hypomania (American Psychiatric Association, 2000). Openness and psychoticism have also been linked to hypomania (Eysenck, 1998; Lyubomirsky et al., 2005). Psychoticism and psychosis have been linked to bipolar disorder and schizophrenia, and they also share a significant correlation with creativity (Eysenck, 1998; Kéri, 2009; Porzio, 2009). Future research is needed in order to determine how hypomania can be present in creative actions and self-destructive behavior. Research has shown poor creative problem solving abilities among suicidal individuals (McAuliffe, Corcoran, Keeley, & Perry, 2003) and has also identified hypomania as a strong identifier of individuals who are most likely to attempt suicide (Bryan et al., 2008). It is intriguing that creative and suicidal individuals both experience hypomania.

The HCL-32 identifies and separates two different symptoms of hypomania, irritability and elevated mood, into two dimensions (Angst et al., 2005). It is possible that the active/elated dimension of hypomania is associated with high creativity levels while the irritable/risk-taking dimension is associated with suicidal ideation and behavior. This supposition is strengthened by research which found a relationship between psychotic symptoms and the irritable/risk-taking dimension of hypomania (Richardson & Garavan, 2009). But this finding also draws a question mark on the creativity-psychosis link because the active/elated dimension of

hypomania did not show a relationship with psychosis.

The ability to identify the dimension of hypomania associated with suicide will aid prevention and treatment efforts for those displaying that specific dimension. Treatment for mental illness is vital in preventing suicide on college campuses. College administration leaders should promote programs and efforts to

ensure mental health and suicide prevention among their students. According to the Suicide Prevention Resource Center (SPRC, 2004), such efforts would influence and expand to other colleges and universities. Such an expansion would greatly help prevent suicide and assist those college students displaying the commonalities of creativity and suicide.

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