

The relationship between creativity and mood disorders

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Research designed to examine the relationship between creativity and mental illnesses must confront multiple challenges. What is the optimal sample to study? How should creativity be defined? What is the most appropriate comparison group? Only a limited number of studies have examined highly creative individuals using personal interviews and a noncreative comparison group. The majority of these have examined writers. The preponderance of the evidence suggests that in these creative individuals the rate of mood disorder is high, and that both bipolar disorder and unipolar depression are quite common. Clinicians who treat creative individuals with mood disorders must also confront a variety of challenges, including the fear that treatment may diminish creativity. In the case of bipolar disorder, however, it is likely that reducing severe manic episodes may actually enhance creativity in many individuals.

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Anecdotal, there are many examples of striking associations between creativity and mood disorders, and particularly bipolar disorder. For example, Vincent Van Gogh suffered from mood disorder during much of his short adult life, prior to committing suicide at age 37. During the last year and a half of his life, he suffered from severe bouts of both psychotic mania and psychotic depression, yet he also produced more than 300 of his greatest works. Sylvia Plath, who also died by suicide at the young age of 31, suffered from severe mood disorder for much of her life. Although she was probably depressed at the time of her death, this period was preceded by a time when she worked late into the night and got up early in the morning, writing poetry intensely—and often poetry with a wry, dry sense of humor, suggesting intermittent periods of a manic or hypomanic state. Martin Luther suffered periods of intense despair, but also periods of extremely high energy. After his *Ninety-five Theses* unexpectedly launched the Reformation, he devoted enormous energy to writing theological tracts to defend his position. There are many other well-known creative people who suffered from mood disorders, many of them bipolar: Ernest Hemingway, Winston Churchill, and Theodore Roosevelt, to mention only a few.

Anecdotal accounts of the lives of creative people are fascinating, because they convey a human and personal element. They also suggest that examining the association between creativity and mood disorders is an interesting scientific pursuit. However, the real test of whether there is an association can only be determined by rigorous

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Clinical research

empirical studies. Such studies are relatively rare, however, because research on the nature of creativity presents a variety of challenges.

Challenges in studying creativity

One of the greatest challenges faced by creativity researchers is defining the nature of the sample to be studied. The use of the term “creativity” to refer to individuals who make creative contributions is relatively modern. Up until the early 20th century, such individuals were said to have “genius.” For example, the landmark study of Lewis Terman, who prospectively followed a group of highly gifted children over many decades, was called “Genetic Studies of Genius.”¹ In this particular study “genius” was defined as having a high intelligence quotient (IQ) on the IQ tests that Terman had developed. Interestingly, as Terman and his group followed these high-IQ individuals into adulthood, they observed that they were generally more successful than average, but that very few actually made significant creative contributions, thereby documenting that having a high IQ is a different mental trait than being creative. Other early studies by Lombroso, Ellis, and Galton also used the term “genius.”²⁻⁴ In these works genius was seen as roughly equivalent to being eminent in a variety of fields. Ellis, for example, chose to study people whose lives were described in the British *Dictionary of National Biography* and who had entries longer than three pages. This of course provided him with a very mixed group of people, ranging from politicians to industrialists to artists and scientists, not all of whom would be considered to be creative in current usage.

These early efforts suggest that a better definition of the term “creativity” may be the key to identifying an appropriate sample to study. Many different perspectives have been offered on defining creativity by authors such as Howard Gardner or Mihaly Csikszentmihalyi. Gardner argues persuasively that there are multiple types of creativity, which he refers to as “multiple intelligences.”⁵ A key component of Gardner’s approach is that he disagrees with the common stereotype that makes creativity equivalent to pursuing work in the arts, and ignores the fact that people in fields such as engineering or biology also may be highly creative. Csikszentmihalyi stresses the importance of making original contributions and of being recognized for these contributions by one’s peers.⁶ Although there are some differences between those cur-

rently pursuing research on creativity, a definition that most would embrace is one that emphasizes that creativity is the ability to produce something that is novel and also useful or beautiful in a very general sense.⁷ Some would also emphasize the importance of having achieved some kind of public recognition for this work, such as a Pulitzer Prize, a listing in *Who’s Who in Art*, or a Fields Medal. However, this is a relatively stringent criterion.

Given this definition of creativity, how then should an investigator identify a sample to study? One approach is to select a very homogeneous group of creative people, such as a group of writers, or musicians, or mathematicians. This is perhaps the most common. Another approach is to sample more broadly and to study a mixture of creative individuals from multiple disciplines. The most difficult aspect of this type of research is identifying and recruiting the subjects, since creative people tend to be relatively busy.

An alternative approach is to identify a group of people for whom written histories are available and to use this information as the basis for study. Examples of this type of approach are the studies of Ellis, Juda, Post, Ludwig, and Schildkraut.^{3,8-11} Although using written historical biographical and autobiographical material provides a sample of convenience, an obvious problem is that the information may not be complete or accurate.

If the goal of a study is to examine the relationship between creativity and psychopathology, then several other challenges must also be met. One is to use a standard and widely accepted set of definitions of mental illness, and to assess its presence or absence using a structured interview of some type. Although this seems obvious in the early 21st century, most of the extant literature on creativity and mental illness has not used this approach. It is nearly impossible to map the diagnoses of early investigators, such as Adele Juda, into modern nomenclature, and therefore to interpret the results. A second challenge is to identify an appropriate comparison or control group, in order to determine whether rates of any given illness in the creative people are different from rates in a “normal” comparison group. Selecting the comparison group is also a challenge. Should one select a profession not notable for nurturing creativity, such as lawyers? Should one select a varied group of people not known to be creative, who are equivalent in age, gender, and educational level to the creative group? There is no easy answer, but the latter alternative is probably prefer-

able, since it “averages out” whatever bias might exist if a single field or profession were chosen.

Is there an association between mood disorders and creativity?

The earliest solidly empirical study to examine the relationship between creativity and mental illness was conducted using a sample of 15 writers from the University of Iowa Writers’ Workshop and 15 control subjects of equivalent age, gender, and educational achievement.¹² Over the years the sample was steadily expanded, so that the final study consisted of 30 subjects in each group.¹³ Subjects were evaluated using a structured interview, and diagnoses were made using the *Diagnostic and Statistical Manual of Mental Disorders*, 3rd ed (*DSM III*)¹⁴ criteria. The results of this study are summarized in *Table I*. Rates of mood disorder are extremely high in the writers; 80% had some type of mood disorder, and 30% had either bipolar I or bipolar II disorder. Both these rates are significantly different from the control subjects. The writers also had higher rates of alcohol abuse than the controls. This study has been replicated by several other investigators. In 1989 Jamison reported her work examining British writers and artists.¹⁵ They were selected using the criterion of having won major honors or prizes in their field, such as membership in the Royal Academy, the Booker Prize, or the New York Drama Critics’ Award. Diagnostic criteria were not used in this study; instead subjects were classified as suffering from mood disorder based on whether they had received treatment. The subjects were subdivided into five groups: novelists (8), poets (18), playwrights (8), biographers (5), and artists (8). Overall, 38% of the sample had been treated for a mood disorder. The highest rate of treatment was in the playwrights (63%), but more than half had received psy-

chotherapy rather than medication. The poets had the highest rate of needing medication for mood disorder (33%); they were also the only group to have received treatment for mania. This study did not include a control group, so statistical comparisons cannot be made between the creative individuals and a comparable comparison group. Although a relatively small subset of the sample had been treated for bipolar disorder, Jamison describes a variety of types of mood swings in this sample.

A subsequent study, published by Ludwig in 1994, also examined creativity in writers.¹⁶ He studied 59 women writers who were participants in the national Women Writers’ Conference held annually at the University of Kentucky. He selected age and educationally matched controls from members of several different women’s clubs within the state, such as a county medical auxiliary or a statewide homemaker’s association. Evaluations were extensive and included a screening questionnaire designed to evaluate the presence of psychiatric syndromes, followed by a personal interview; diagnostic criteria were based on *Diagnostic and Statistical Manual of Mental Disorders*, 3rd ed revised (*DSM-III-R*).¹⁷ The two groups differed significantly in rates of a variety of diagnoses, including depression, mania, panic attacks, generalized anxiety, and drug abuse. Rates were always higher in the writers. Rates of depression (56%) and mania (19%) were both relatively high.

These three studies are the primary ones to investigate rates of mood disorders in creative individuals using personal interviews of the subjects and a diagnosis that reflects modern concepts of depression and bipolar disorder. While they vary slightly in the lifetime prevalence rates reported, all results run in the same direction. Thus, it seems likely that creative individuals do have higher rates of mood disorder in general, and bipolar disorder in particular. An obvious limitation of the work to date, however, is that it has focused primarily on writers. A study to determine whether these results generalize to other types of creativity (eg, inventors, performing artists, scientists) is yet to be done.

Psychiatric treatment of creative individuals suffering from bipolar disorder

Given that there appears to be a clear association between creativity and mood disorder, what are the implications for the clinician who is caring for a creative

Disorder	Writers		Controls		χ^2	P
	N	%	N	%		
Bipolar I	4	13	0	0	-	ns
Bipolar II	9	30	3	20	2.60	ns
Unipolar	11	27	5	17	2.13	ns
Any bipolar disorder	13	43	3	10	6.90	0.01
Any mood disorder	24	80	9	30	13.20	0.001
Alcohol abuse	9	30	2	7	4.01	0.05
Drug abuse	2	7	2	7	--	ns

Table I. Psychiatric illness in writers versus controls. ns, non significant

Clinical research

individual who suffers from mania or depression? Specifically, how does treatment affect an individual's capacity to be creative? This is a matter of some concern to patients, particularly those in the bipolar spectrum. Some feel that the high energy levels and euphoria associated with manic or hypomanic states enhance creativity and may be reluctant to have their euphoria blunted by psychotropic medications. Further, it has been argued that experiencing depression may also increase the creative capacity in some individuals. For example, Sir George Pickering has argued that while depressed a creative person may be in an incubation phase during which ideas may grow.¹⁸ This is then followed by a very creative period after the person emerges from the depression; he cites Charles Darwin, Mary Baker Eddy, Marcel Proust, Sigmund Freud, Florence Nightingale, and Virginia Woolf as examples. Such examples are, of course, anecdotal.

There are also many examples of anecdotal accounts indicating that creative individuals who have suffered from mood disorders find them to be disruptive and counterproductive. Among the writers in the Iowa Workshop study, essentially all of them reported that they were unable to work creatively during periods of depression or mania. During depressive episodes their cognitive fluency and energy were decreased, and during manic periods they were too distractible and disorganized to work effectively. Other writers have also reported a similar inhibiting effect of mood disorder. One of the most famous public examples is Robert Lowell, a great American poet of the 20th century who suffered from severe bipolar disorder. In his biography of Lowell, Ian Hamilton described how Lowell found himself to be more creative after being placed on lithium.¹⁹

This had been the first year in eighteen he hadn't had an attack. There had been fourteen or fifteen of them over the past eighteen years. Frightful humiliation and waste....Now it was a capsule a day and once-a-week therapy.

Very little empirical work has been done on this subject. It was of interest to Mogens Schou, who was largely responsible for developing lithium as a treatment for bipolar disorder.²⁰ He studied a group of 24 artists (a mixture of writers, composers, and painters). Using measures

of productivity and quality of work, he found that the artists fell into three groups. Half of the subjects (12) showed great improvement; these were people who had very severe bipolar illness (much like Robert Lowell) and found that treatment actually enhanced their ability to create. A second group (N=6) had unaltered productivity. A third group—6 people, or 25% of the sample—had lowered productivity, although this did not necessarily occur throughout the period of treatment. Overall these results suggest that adequate and appropriate treatment is likely to be helpful for the majority of creative people suffering from bipolar disorder.

The clinician who treats creative people with mood disorders must of course be a sensitive and supportive listener. Patients are likely to work best if the psychiatrist understands the challenges and difficulties that creative people confront in the pursuit of their art.²¹ Creative people tend to push the limits and live on the edge. As the saying goes, "when you work at the cutting edge, you are likely to bleed." An additional concern is the high rate of suicide and suicide attempts among creative people. This is a consistent theme in much of the creativity research conducted to date.²² Losing gifted individuals to suicide is a profound tragedy, and clinicians must also be aware of this risk in their treatment planning.

Summary

There appears to be a strong association between creativity and mood disorders. However, the overall literature supporting this association is relatively weak. A great deal of the work reported suffers from inadequate definitions of both creativity and mood disorders, reliance on anecdotal and autobiographical or biographic sources, and a lack of control groups. The range of types of creativity studied to date has also been relatively narrow. It has focused largely on writers. The study of the relationship between creativity and mental illnesses is still a relatively open territory, with much remaining to be done. □

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La relación entre creatividad y trastornos del ánimo

La investigación diseñada para examinar la relación entre creatividad y enfermedades mentales debe enfrentar múltiples desafíos. ¿Cuál es la muestra óptima para el estudio? ¿Cómo debe definirse creatividad? ¿Cuál es el grupo de comparación más adecuado? Sólo un número limitado de estudios han examinado individuos altamente creativos utilizando entrevistas personales y un grupo de comparación no creativo. La mayoría de los estudios han examinado escritores. El peso de la evidencia sugiere que en estos individuos creativos la frecuencia de trastornos del ánimo es alta, y que tanto el trastorno bipolar como la depresión unipolar son bastante comunes. Los clínicos que tratan individuos creativos con trastornos del ánimo deben enfrentar una serie de desafíos, incluyendo el riesgo que el tratamiento pueda disminuir la creatividad. Sin embargo, en el caso del trastorno bipolar, es posible que la reducción de los episodios maníacos graves pueda realmente aumentar la actividad creativa en muchos sujetos.

Relation entre créativité et troubles de l'humeur

La recherche destinée à étudier les relations entre créativité et troubles mentaux est confrontée à de nombreux défis. Quel est le meilleur échantillon à étudier ? Comment définir la créativité ? Quel est le groupe de comparaison le plus adapté ? Seul un nombre limité d'études a étudié des sujets très créatifs par le biais d'entretiens personnels en comparaison avec un groupe de sujets non créatifs. La majorité de ces études s'est intéressée aux écrivains. La plupart des résultats sont en faveur d'un taux élevé de troubles de l'humeur chez ces créatifs et de la présence fréquente de troubles bipolaires et de dépression unipolaire. Les médecins qui soignent les sujets créatifs ayant des troubles de l'humeur sont aussi confrontés à de nombreux défis dont la peur de voir la créativité diminuée à cause du traitement. Cependant, dans le cadre des troubles bipolaires, il est probable que la diminution des épisodes maniaques sévères augmente en fait la créativité chez beaucoup d'entre eux.

REFERENCES

1. Terman L, Cox C, Oden M, Burks B, Jensen D. *Genetic Studies of Genius*. Stanford, Calif: Stanford University Press; 1925-1959.
2. Lombroso C. *The Man of Genius*. London, UK: Walter Scott; 1891.
3. Ellis HA. *A Study of British Genius*. New York, NY: Houghton-Mifflin; 1926.
4. Galton F. *Hereditary Genius*. London, UK: Macmillan and Company; 1892.
5. Gardner H. *Intelligence Reframed: Multiple Intelligences for the Twenty-First Century*. New York, NY: Basic Books; 1999.
6. Csikszentmihalyi M. *Creativity: Flow and the Psychology of Discovery and Invention*. New York, NY: Harper Collins; 1996.
7. Andreasen NC. *The Creating Brain: The Neuroscience of Genius*. New York, NY: Dana Press; 2005.
8. Juda A. The relationship between high mental capacity and psychic abnormalities. *Am J Psychiatry*. 1949;106:296-307.
9. Post F. Creativity and psychopathology. A study of 291 world-famous men. *Br J Psychiatry*. 1994;165:22-34.
10. Ludwig AM. Creative achievement and psychopathology: comparison among professions. *Am J Psychotherapy*. 1992;46:330-356.
11. Schildkraut JJ, Hirshfeld AJ, Murphy JM. Mind and mood in modern art, II: Depressive disorders, spirituality, and early deaths in the abstract expressionist artists of the New York School. *Am J Psychiatry*. 1994;151:482-488.
12. Andreasen NC, Canter A. The creative writer: psychiatric symptoms and family history. *Comp Psychiatry*. 1974;15:123-131.
13. Andreasen NC. Creativity and mental illness: prevalence rates in writers and their first-degree relatives. *Am J Psychiatry*. 1987;144:1288-1292.
14. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 3rd ed. Washington, DC: American Psychiatric Association; 1980.
15. Jamison KR. Mood disorders and patterns of creativity in british writers and artists. *Psychiatry*. 1989; 52:125-134.
16. Ludwig AM. Mental illness and creative activity in female writers. *Am J Psychiatry*. 1994;151:1650-1656.
17. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 3rd ed, revised. Washington, DC: American Psychiatric Association; 1987.
18. Pickering G. *Creative Malady*. New York, NY: Oxford University Press; 1974
19. Hamilton I. *Robert Lowell: a Biography*. New York, NY: Random House, 1982
20. Schou M: Artistic productivity and lithium prophylaxis in manic-depressive illness. *Br J Psychiatry*. 1979;135:56-65.
21. Andreasen NC, Glick ID: Bipolar affective disorder and creativity: Implications and clinical management. *Comp Psychiatry*. 1988;29:207-217.
22. Jamison KR. *Touched With Fire. Manic-Depressive Illness and the Artistic Temperament*. New York, NY: The Free Press; 1993.