

# Beautiful Minds: Is there a Link Between Genius and Madness?

By Dr Kenneth Lyen

**Editorial Note:**

*This article is only an abridged version. The complete article is available online at [http://www.sma.org.sg/sma\\_news/sma\\_newsmainpges/3403main.html](http://www.sma.org.sg/sma_news/sma_newsmainpges/3403main.html)*

**INTRODUCTION**

In her book *A BEAUTIFUL MIND*, Sylvia Nasar writes about Nobel Prize-winner John Nash and describes how schizophrenia affected his thought processes. The biography reconfirms an age-old observation that *“There is no great genius without a tincture of madness”* (Seneca 3BC-AD65).

The idea of a link between genius and madness has long fascinated people. The boundaries between normal, abnormal, and supernormal, are arbitrary and blurred. What may seem eccentric behaviour to one observer may be regarded as madness by others. The definition of madness is surrounded by treacherous quicksand. A genius is loosely defined as one who is highly creative and has made a significant contribution to mankind, often through challenging established orthodoxy and establishing a new paradigm.

Some earth-shaking ideas may have appeared insane when first proposed. For example, the concepts of Copernicus and Galileo’s solar-centric world, Einstein’s space-time universe, or Picasso’s geometric paintings, all seemed quite preposterous initially.

**IS THERE REALLY A LINK BETWEEN GENIUS AND MADNESS?**

Studies in the USA have shown that up to one-third of its population will suffer from some form of mental illness during their lifetimes. The chances of developing a mental disorder, regardless of whether one is a genius or a mere mortal, are extraordinarily high. Is the link between genius and madness a spurious one?

Proponents of a positive link will point to a number of research studies. Unfortunately, nearly every one of them

is flawed. Criticisms include ambiguous inclusionary criteria, the impossibility of validating historical data, the lack of or unsatisfactory control groups, small sample size, and the often unclear definitions of the highly creative (genius) and of mental illness. There are two main lines of research:

**a. Studying Creative Individuals**

Eminent historical individuals have been studied by researching their biographies to see what percentage of them have psychiatric illnesses. Colin Martindale in 1972 studied 42 English and French poets, and found significant psychiatric illness in 45% of them. Arnold Ludwig (1992) in an impressive study of 1004 twentieth century artists and writers, found that 74% of them exhibited psychiatric symptoms at some stage of their lives, which compares with 32% for the national average. It must be admitted that labeling dead artists retrospectively with psychiatric diagnosis has raised many sceptical eyebrows.

Fortunately, there are a few studies of contemporary artists, writers and musicians. In 1974, Nancy Andreasen from the University of Iowa studied 30 faculty members attending a writers’ workshop and found that 80% of the writers suffered from depression or bipolar disorder, compared to 30% of her matched controls.

Kay Redfield Jamison in 1989 studied 47 distinguished British writers and visual artists, and found that 38% of them had been previously treated for a mood disorder, including bipolar disorder, which compares to less than 15% of the British general population.

Arnold Ludwig studied a sample of 59 female writers attending a Women Writers Conference and found that psychiatric problems were four times higher in writers compared with non-writers.

Finally, data from the US Bureau of the Census showed that the overall

suicide rate among artists in the USA is three times the national average.

**b. Studying Individuals with Mental Illnesses**

From the opposite standpoint, individuals with psychiatric conditions have been studied to see if they are more creative compared to the normal population. Hagop Akiskal of the University of Tennessee studied 750 of his patients with depression, bipolar disorder and schizophrenia. He found that among the more mildly affected patients, some 10% were creative artists and writers. A study of 33 bipolar subjects was conducted by Ruth Richards and Dennis Kinney in Denmark, and they found that creativity was significantly higher in subjects with bipolar disorder, compared to their controls.

Thus there is a small body of epidemiological evidence to support a link between creativity and bipolar disorders, but this is not the same as saying between genius and madness.

**WHAT SPECIFIC PSYCHIATRIC DISORDERS HAVE BEEN LINKED TO GENIUS?**

Without much hard evidence, many authors have credited famous people to have suffered from one or more mental disorders. Attention deficit hyperactivity disorder is notably missing from the list below because it is a condition which is hard to diagnose, and the evidence linking it to creativity is least convincing.

**Dyslexia**

Dyslexia is a learning disorder characterized by severe difficulties in recognizing and understanding written language in reading, writing, and spelling problems. It occurs in persons with normal intellectual capacities who have had adequate instruction to read. Eminent people thought to have



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suffered from dyslexia include Albert Einstein, Thomas Alva Edison, and Walt Disney.

### **Bipolar Disorder**

Also known as manic-depressive psychosis, bipolar disorder is characterized by mood swings between euphoria and depression. Many may also show such psychotic symptoms as delusions, hallucinations, paranoia, or grossly bizarre behaviour. Famous people thought to have bipolar disorder include Edgar Allen Poe, Sylvia Plath, and Vincent Van Gogh.

### **Schizophrenia**

Schizophrenia is a severe psychiatric disorder characterized by hallucinations, delusions, blunted emotions, disordered thinking, detachment from reality and withdrawal into the self. The most prominent example of a genius affected by schizophrenia is John Nash.

### **Obsessive-Compulsive Disorder**

Obsessive-Compulsive Disorder is a psychiatric condition characterized by obsessive thoughts and compulsive behaviour, for example continual washing of the hands prompted by a feeling of uncleanliness. Obsessions can also be a manifestation of bipolar disorder and schizophrenia. Famous persons who have displayed obsessive-compulsive tendencies in the absence of bipolar disorder or schizophrenia include inventor Nicola Tesla, and the airline magnate Howard Hughes.

### **Autistic Savant**

About 10% of autistic people may have the savant syndrome in which they display outstanding talents in a certain area, such as lightning fast arithmetic calculations and drawing skills. This was well illustrated by the character played by Dustin Hoffman in the film *Rain Man*. To date, none of the autistic savants have reached the rank of genius. However it is conjectured that some reclusive university professors may be undiagnosed autistic savants.

### **DRUGS AND ALCOHOL**

A few artists have admitted to experimenting with drugs to enhance their creativity. These include Sigmund Freud and Thomas Edison who experimented with cocaine. Alcohol addiction has afflicted a number of creative individuals, including Jackson Pollock and Eugene O'Neill. Are drugs or alcohol a manifestation or the cause of the psychiatric disorder? Or do artists take them because they find them helpful in enhancing their creativity?

### **SHOULD MILD MENTAL ILLNESS BE TREATED?**

Many artists and scientists suffering from mild mental illnesses, including John Nash, have refused treatment because they claim it blunted their creativity. The medical profession is therefore faced with a dilemma of deciding whether or not to insist on treatment for mild mental afflictions knowing that their treatment could stifle creativity, while untreated, a percentage of patients, especially those with bipolar disorder, might worsen and commit suicide.

### **HOW DOES MADNESS PROMOTE GENIUS?**

#### **Compensatory Adaptation**

Just as the blind have a heightened sense of hearing and touch, and the deaf have increased sharpness of vision, certain types of mental disability may cause compensatory adaptation. The best candidate for this is dyslexia. If a dyslexic has difficulty with language, then he compensates by increasing his powers of visual perception and creativity.

#### **Direct Effects of Mood Swings**

Mild mania has some benefits. It is associated with quicker thinking, greater verbal fluency, play on words, increased self-confidence, and greater optimism. Severe mania, on the other hand, can be counter-productive and may result in loss of concentration and wild behaviours. Mild depression can act as a sort of editor to prune the excesses of mania. But severe depression can dampen all activities and thinking.

### **Knight's Move Thinking**

Certain mental disorders like schizophrenia and bipolar disorder are characterized by sudden jumps in one's thinking. These leaps from one idea to another can be quite unexpected and illogical, and are referred to as Knight's Move thinking. This way of thinking is important in the creative process because it enables a person to make innovative leaps without being anchored to preconceived ideas or imprisoned by one's sense of logic.

### **CAN GENIUS BE DEVELOPED?**

This is the question that all educators would like answered. Biographies of many geniuses have shown that they were once child prodigies. Unfortunately most child prodigies that we hear about in the newspapers usually fade into oblivion and never achieve their early promise. The question is why some prodigies flower into geniuses, while others wither. Clues are given in biographies and autobiographies.

### **Parents**

Parents play a pivotal role in the upbringing of their children by providing a stimulating, stable and loving milieu for their child's development. Nobel Prize-winner Norbert Weiner was a child prodigy, whose parents recognized their son's early talents. This is in contrast to a contemporaneous child prodigy, Billy Sidis. At the age of 6 years, he could read 8 languages, and was admitted to Harvard University at 11. However, from then onwards he petered out. The parents gave him the sort of accelerated learning, but they were overprotective, and it was only by adolescence that he could clean or dress himself. The family was an unhappy one, with constant parental strife. So despite having ample intellectual stimulation, he did not have an emotionally nurturing environment.

### **Teachers**

Teachers play an important role in a prodigy's development by being understanding, and by balancing the child's education. They can set challenging problems for their students

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to solve. Sylvia Nasar gives an interesting anecdote that when John Nash misheard his tutor and thought that his assignment was to solve some hitherto unsolved complex mathematical problems, he handed in the solutions to these problems the next day! Great minds seem to like to tackle classic problems and to work out their solutions by themselves.

**Mentors**

Isaac Newton and Albert Einstein both had uncles who acted as mentors and helped develop their nephew’s early mathematical abilities. Half the Nobel Prize-winners had other Nobel Prize-winners as mentors when they were young. It appears that highly creative people know how to foster creativity in others.

**Clusters of Excellence**

It has been noted that people of genius tend to be found in clusters. For example, ancient Greece produced Socrates, Plato and Aristotle. The Laboratory of Molecular Biology at Cambridge University produced 10 Nobel Prize-winners, and Bell Laboratories produced 11 Nobel Prize-winners. The fostering of centres of excellence is an important way of attracting and catalyzing talent, among whom may be found a few geniuses.

**Age of First Significant Creative Achievement**

It is well known that there is an optimal age at which certain disciplines can shine. Olympic swimmers and prize-winning pianists reach their

**TABLE A: List of scientists and inventors, and the age at which they made their first discovery or publication.**

| CREATOR             | CREATION   | AGE (yr) |
|---------------------|--|----------|
| Louis Braille       | Invented a system of printing and writing for the blind  | 15       |
| Blaise Pascal       | Formulated Pascal’s Theorem                              | 16       |
| Galileo Galilei     | Discovered the laws of pendulum motion at the age of     | 17       |
| Edwin Land          | Patented his first polarizing light filter               | 19       |
| George Westinghouse | First patent for a rotary steam engine                   | 19       |
| Guglielmo Marconi   | Invented a system of radio telegraphy                    | 21       |
| Joshua Lederberg    | Discovered bacterial conjugation                         | 21       |
| Thomas Edison       | Invented automated relaying communications device        | 22       |
| Carl Gauss          | Proved the theorem of complex coefficients               | 22       |
| John Nash           | Published his theory of non-cooperative games            | 22       |
| Brian Josephson     | Predicted the Josephson effect                           | 22       |
| James Hillier       | Developed the electron microscope                        | 22       |
| Isaac Newton        | Calculus, principles of optics, circular motion, gravity | 23       |
| James Watson        | Co-published his paper on DNA                            | 25       |

pinnacle in their teens. Table A shows a list of scientists and inventors, and the age at which they made their first discovery or publication.

A significant proportion of top scientists and inventors throughout history achieved success while young. The years preceding their discovery or publication, when these geniuses were in their late teens or early twenties, are crucial. Hence the importance of protecting and nurturing this creative period of their lives.

**CONCLUSIONS**

The link between genius and madness is a complex one. The fortuitous convergence of a number of factors in one person, including a minimum level of intelligence, the ability to join ideas from different domains, the ability to record these ideas, independence and flexibility of thinking, intense focus, self-discipline, perseverance, the right social and

cultural environment, all conspire to create a genius. Can one create the right physical, emotional and educational environment to produce a genius? By studying the mechanisms, both biochemical and educational, that link mental disorders and genius, one may gain insight into factors that can engender creativity and kindle future potential geniuses. But even if this were possible, would a genius thus produced be recognized?

To sum up, here is a modified quote: *“You don’t have to be mad to be a genius ... but it helps.”* ■

**Further Reading:**

- Nasar S. *A beautiful mind*. Touchstone Books 2001.
- Ludwig AM. *The price of greatness*. Guilford Press 1996.
- Jamison KR. *Touched with fire: manic-depressive illness and the artistic temperament*. Free Press 1993.
- Lyen KR et al. *The education of highly creative people*. Armour Publishing 1998.