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SCHIZOPHRENIA AND CREATIVITY

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SUMMARY

Creativity is defined as an idea or product that is both novel or original and useful or adaptive. Despite the value of creativity at the personal and societal level, the tendency for creative individuals to suffer from what we would now call mental illness has been noted for thousands of years. In the mid-twentieth century, empirical evidence for the connection between creativity and psychopathology began to emerge. In this paper author brings literature review of the studies done about connection between creativity and psychopathology, as well as connection on schizofrenia and creativity. Author also point out that creating can be therapeutic for those who are already suffering from mental illness, and that creative art therapies applied in clinical and psychiatric settings report positive health-related outcomes.

Key words: *creativity - schizophrenia*

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INTRODUCTION

Creativity is defined as an idea or product that is both novel or original and useful or adaptive in some way. Creative capacity has long been considered as an advantage for humans, both at the level of the species and at the level of the individual. At the level of the individual, creativity has been viewed as a facet of self-actualisation and the expression of a fulfilled life (Maslow 1970). It has been correlated with positive personality traits such as openness to experience and self-confidence (Feist 1999). Creativity itself is also highly valued personal trait. Along with the the traditional creative fields, such as art, writting, music and science, creativity is one of the most wanted traits in business with many of the worlds most prestigious business schools offering courses in creativity (Gangemi 2006, Mathew 2009). Creative thinking plays a vital role in almost all aspects of human life. But, little is known about the neural and genetic mechanisms underlying creative thinking.

CREATIVITY AND PSYCHOPATHOLOGY

Despite the value of creativity at the personal and societal level, the tendency for creative individuals to suffer from what we would now call mental illness has been noted for thousands of years. Plato, for example, remarked that poets, philosphers, and dramatists had a tendency to suffer from „divine madness“ one of the four types of madness. According to Aristotle „no great genius was without a mixture of insanity“. And there are the often repeated anectodes about the psychotic breaks of Vincent van Gogh and John Nash, and the manic and depressive episodes of Virginia Wolf and Ernest Hemingway. There is in fact some empirical evidence that the psychological factors underlying psychiatric disorders are linked to increased creativity. Unaffected relatives of those with bipolar disorder have greater creativity (Simenova et al. 2005) and are over-represented in creative professions, and similar findings have been reported for schizophrenia (Lauronen et al. 2004, Kyaga et al. 2011).

In the mid-twentieth century, empirical evidence for the connection between creativity and psychopathology began to emerge. In a study that examined the adopted-away offspring of mothers with and without schizophrenia, has been found that the children of mothers with schizophrenia were more likely to hold creative jobs and have colorful lives than were the offspring of mothers without schizophrenia (Heston 1966). Also, in a study that examined males from Iceland born between 1881 and 1910 author discovered that individuals with a psychotic relative were almost three times more likely to be excellent in a creative field (scholars, novelist, poets, painters, composers etc.) than those without a psychotic relative. He suggested that having a predisposition to schizophrenia might confer a creative advantage and concluded that „some type of mental stimulation is associated with a genetic relationship to psychotic person“ (Karloson 1970).

Many studies and researches beginning in the late 1980s examined incidence of psychopathology within the population of highly creative achieveers. The results of this research support a higher risk for these categories of disorders among creative individuals, mood disorders (especially bipolar disorder), schizospectrum disorders, substance abuse disorders, and lately with diagnosis ADHD.

Despite the desirability and adaptability of human creativity, research indicates that creative individuals are at greater risk for certain forms of psychopathology than are members of the general public. Several models have been presented to account for the creativity psychopathology relationship, but a model of shared neurocognitive vulnerability best accounts for the available research findings. Creative individuals may share neurocognitive vulnerabilities that are also characteristic of

certain forms of mental pathology. These mechanisms may grant access to disinhibited states of consciousness, increase attention to novelty and promote unusal associations through anomalous neural connectivity. This model suggests that psychopathology and creativity may share genetic components that are expressed as either pathology or creativity depending on the presence of other moderating factors (Becker 201, Carson 2011). Current evidence indicates that the disorders associated with creativity as well as creativity itself are both heritable and polygenetic (Berrettini 2000).

Future research are needed to extend the shared vulnerability model to include the interactions of neurocognitive and environmental factors.

Idea that mental illness and creativity are connected has rised to the level of cultural myth as we can see in many movies in which mentally ill persons are presented as unusally creative (movies: Beautiful Mind (2001), Rain Man (1988) and Shine (1996)).

CREATIVITY, SCHIZOPHRENIA AND SCHIZOSPECTRUM

Schizophrenia is a mental disorder characterized by a severe disconnect from reality, including a tendency to experience thoughts that are divergent, disorganised and delusional.

Important aspect of creativity is novelty or originality. Many patients with schizophrenia have thoughts that are unique or new. We can assume that schizophrenia disposes one toward satisfying one requirement for creative thought named originality. More unusual ideas in schizophrenic patients the more likely some of them will be new. But very important is selection and development of new ideas to result in something useful. As we know being creative is similar to mental illness in the way that it involves a heightened capacity and inclination to produce a large quantity of ideas and associations. But creative person is better able to manage the flood of ideas, selecting the useful ones and developing them effectively while discarding the others.

Research done by Kyaga et al. (2013) suggested a link between milder forms of schizophrenia and creativity. In their study based on 40-year study of roughly 1,2 million Swedish people, found that those in scientific and artistic occupations were not more likely to suffer from psychiatric disorders, with the exception of bipolar disorders. Expressed mental illness did not increase the probability of entering a creative profession, but what was striking was that the siblings of patients with autism and first-degree relatives of patients with schizophrenia were significantly overrepresented in creative professions. Another research shows that psychologically healthy biological relatives of people with schizophrenia have unusally creative jobs and hobbies and tend to show higher levels of schizotypal personality traits compared to the general population (Kinney et al. 2000-2001).

Also, there is literature describing psychotic and odd or eccentric behavior in creative individuals. Studies of creative achievers at Berkeleys Institute for Personality Assessment and Research (IPAR) done on creativity and personality in the 1950 s and 1960s found that creative writers and creative architects had elevated scores on the Minnesota Multiphasic Personality Inventory (MMPI) scales for schizophenia and paranoia. Both gropus also reported frequent unusual perceptual occurrences and odd mystical experiences (Barron 1969).

Series of studies also found that scientist, creative writers and artists all scored higher on the personality measure „schizothymia“ than did the presumably less creative control groups (Drevdal & Cattell 1958). These researchers also noted that while schizothymia was negatively correlated with self-sufficiency (a measuse of good mental health) in the normal population, both schizothymia and self-sufficiency characterized their creative groups. These findings are an early indicator of the shared vulbnerabilities model of creativity and psychopathology.

Robert Prentky (1979) suggested a theory that both persons with schizophrenia and highly creative persons might share a common cognitive style, namely, a style of accepting a broad bandwidth of information and processing it at a relatively shallow level of analysis rather than focusing on a more limited volume of information and conducting detailed analysis.

Keefe & Magaro (1980) in their work concluded that creative and schizophrenic individuals may share a style of thinking that has been called loose or overinclusive.

Studies which examined research on the connection between creativity and schizotypy/psychosis- proneness concluded that creative persons tend to occupy a space somewhere in the midrange on the continuum between normalcy and schizophrenia (Brod 1987, Prentky 1989). Also, studies have examined the schizotypy-creativity connection, making the distinction between positive and negative schizotypy. Positive schizotypy or psychosis-proneness is characterised by unusal perceptual experiences (distorsions of perception) and magical thinking (paranormal beliefs etc.). These characteristics can be viewed as subclinical associates of hallucinations and delusions or the positive signs of schizophrenia. Negative schizotypy is characterised by social anhedonia and cognitive desorganization. These characteristics can be viewed as subclinical associates of the negative signs of schizophrenia (Mason & Claridge 2006). Studies indicates that positive and negative schizotypal traits may differentiate type of creative individuals. Study done by Nettle (2006) reported that poets and artists along with psychiatric patients had elevated levels of positive schizotypal traits, while mathematicians had higher level of negative schizotypal traits.

The „inverted U“ pattern of creativity and psychopathology noted with bipolar patients in which milder subclinical forms of the illness were associated with higher levels of creativity was replicated using subjects

with schizospectrum symptoms. In their study Kinney et al. (2000-2001) found that schizospectrum traits tend to run in the families. The same study also found that peak creativity levels were higher in subjects with schizotypal personality disorder or two schizotypy signs (magical ideation or illusion experiences) than in subjects with no schizotypal signs or with significant clinical picture of schizophrenia.

Study done by Acar et al. (2017) investigated the relationship between creativity and schizophrenia with a 3-level multilevel meta-analyic approach. Analyses indicated that the relationship between schizophrenia and creativity is moderated by type of creativity measure, the content of creativity measure, the severity of schizophrenia and patient status. Results showed that a mild expression of schizophrenia symptoms may support creativity but a full demonstration of the symptoms undermines it.

CREATIVE THERAPIES

Creating can also be therapeutic for those who are already suffering from mental illness. For example, research showes that expressive writing increase immune system functioning and emerging field of posttraumatic growth is showing how people can turn adversity into creative growth (Kaufman & Kaufman 2009, Foregard 2013).

Recently, besides being an important part in clinical health care practice, creative art interventions have become an important area of integrative medicine research. Despite the novelty of creative art interventions a notable, evidence-base on the efficacy of creative arts interventions in various contexts and with many different populations is emerging (Martin et al. 2018)

CONCLUSION

We can conclude that research on schizospectrum pathology and creativity supports two conclusions first that there is an elevated level of schizotypy and psychosis-proneness in divergent thinkers and creative individuals, and second that milder symptom sets are more conductive to creativity than more severe forms of the shizospectrum disorders. Thinkers of the human condition have long associated creativity with psychiatric illness – the „mad genius“ archetype, but to develop ideas that are creative person needs protective intellectual factors and autistic-like traits to steer the chaotic storm (Degmecic 2017). Also, creating can be therapeutic for those who are already suffering from mental illness, so creative art therapies are applied in clinical and psychiatric settings and increasingly report positive health-related outcomes. Despite the effective practice, scientific research is needed in order to understand exactly how creative art therapies work. This understanding is relevant not only within therapeutic work, but also for the positioning of creative art therapies in the health sector (Lange et al. 2018).

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References

1. *Acar S, Chen X & Cayirdag N: Schozophrenia and creativity: A meta-analytic review. Schizophr Res 2017; pii:S0920-9964(17)30512-1*
2. *Barron F: Creative person and creative process. Holt, Reinhart&Winston, New York, 1969*
3. *Becker G: The association of creativity and psychopathology: Its cultural-historical origins. Creat Res J 2001; 13:45-53*
4. *Berrettini WH: Susceptibility loci for bipolar disorder: Overlap with inherited vulnerability to schizophrenia. Biol Psychiatry 2000; 47:245-51*
5. *Brod JH: Creativity and schizotypy. In Clardge GX (ed): Schizotypy: Implications for illness and health, 274-98. Oxford: Oxford University Press, 1987*
6. *Carson SH: Creativity and psychopathology: A genetic shared-vulnerability model. Can J Psychiatry 2011; 56:144-53*
7. *Drevdahl JE & Cattell RB: Personality and creativity in artists and writers. J Clin Personality 1958; 14:107-11*
8. *Degmečić D: Creative mind. Medicinska naklada, Zagreb, 2017*
9. *Feist GF: The influence of personality on artistic and scientific creativity. In Sternberg RJ (ed): Handbook of creativity, 273-96. Cambridge: Cambridge University Press, 1999*
10. *Foregard MJC: Perciving benefits after adversity: the relationship between self-reported posttraumatic growth and creativity. Psychol Aestetics Creativity Arts 2013; 7:245-64*
11. *Gangemi J: Creativity comes to B-School. Business Week, March 26, 2006. http://www.businessweek.com/print/bschools/content/mar2006/bs20060326_8436_bs001.htm?chan-bs.*
12. *Lange G, Leonhart R, Gruber H & Koch SC: The Effect of Active Creation on Psychological Health: A Feasibility Study on Therapeutic Mechanisms. Behav Sci 2018; 8:25*
13. *Heston LL: Psychiatric disorders in foster home reared children of schizophrenic mothers. Brit J Psychiatry 1966; 112:819-25*
14. *Karloson JL: Genetic association of giftedness and creativity with schizophrenia. Hereditas 1970; 66:177-82*
15. *Kaufman SB & Kaufman JC: The psychology of creative writing. Cambridge University Press, New York, 2009*
16. *Keefe JA & Magaro PA: Creativity and schizophrenia: An equivalence of cognitive processing. J Abnorm Psychol 1980; 89:390-8*
17. *Kinney DK, Richards R, Lowing PA, LeBlanc D, Zimbalist ME & Harlan P: Creativity in offspring of schizophrenic and control parents: An adoption study. Creat Res J 2000-2001; 13:17-25*
18. *Kyaga S, Lichtenstein P, Boman M, Hultman C, Langstrom N & Landen M: Creativity and mental disorder: family study of 300000 people with severe mental disorder. Br J Psychiatry 2011; 199:373-9*

19. Kyaga S, Landen M, Boman M, Hultman CM, Langstrom N & Licheinstein PL: Mental illness, suicide and creativity: 40-year prospective total population study. J Psychiatr Res 2013; 47:83-90
20. Lauronen E, Veijola J, Isohanni I, Jones PB, Nieminen P & Isohanni M: Links between creativity and mental disorder. Psychiatry 2004; 67:81-98
21. Martin L, Oepen R, Bauer K, Nottensteiner A, Merghiem K, Gruber H et al.: Creative Arts Interventions for Stress Management and Prevention – A Systematic Review. Behav Sci 2018; 8:28
22. Maslow AH: Motivation and personality (2nd Ed.). Harper & Row, New York, 1970
23. Mason O & Claridge G: The Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE): Further description and extended norms. Schizophr Res 2006; 82:203-11
24. Mathew CA: Leader creativity as a predictor of leading change in organisations. J Appl Soc Psychol 2009; 39:1-41
25. Nettle D: Schizotypy and mental health among poets, visual artists and mathematicians. J Res Person 2006; 40:876-90
26. Prentky R: Creativity and psychopathology: A neurocognitive perspective. In Maher B (ed): Progress in experimental personality research, 1-39. Academic Press, 1979
27. Prentky R: Creativity and psychopathology: Gamboling at the seat of madness. In Glover JA, Ronning RR & Reynolds CR (eds): Handbook of creativity, 243-27. Plenum Press, 1989
28. Simenova DI,Chang KD, Strong C & Ketter TA: Creativity in familial bipolar disorder. J Psychiatr Res 2005; 39:623-31

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