

**Creativity and Positive Affect:
Is High Creativity Dependent on an Elevated Mood?**

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Abstract

The goal of this paper is to determine if high creativity is dependent on elevated moods. Multiple research articles were explored to determine the influences of affect, latent inhibition, and mental illness on creativity levels. While some articles demonstrated high creativity levels in elevated moods, others illustrated high creativity among those with mental illness, negative moods, and low levels of latent inhibition. Other factors that influenced creativity levels included high intelligence quotients (IQ), the personality traits of openness and extraversion, high levels of divergent thinking, hypomanic traits, and psychoticism. According to these results, high levels of creativity are not solely dependent on elevated moods and can even occur in very high levels among those suffering from certain mental illnesses (i.e. bipolar disorder).

William Lyon Phelps said that “[the] happiest people are those who think the most interesting thoughts” (Lyubomirsky, King, & Diener, 2005, p. 830). Research has shown that people who are chronically happy may show more creativity than those who are not (Lyubomirsky et al., 2005). This seems to suggest that happy people are either the most capable or the only ones able to enjoy high levels of creative cognition. The aim of this research paper is to examine the quote by Phelps and the link between creativity and positive affect. Creativity will be explored in order to find out how it is related to mental illness, positive affect, and negative affect. The author anticipates higher levels of creativity among those with specific mental illnesses such as bipolar disorder and attention deficit hyperactivity disorder (ADHD). Negative affect is also expected to exhibit an effect on creativity, but it will not be as clear as those with positive affect or mental illness.

Positive Affect and Creativity

Positive affect refers to emotions that are positive. In a study that used a comedic film or a gift of candy to stimulate positive affect in participants, Isen, Daubman, & Nowicki (1987) found that positive affect was able to predict high achievement in creative problem solving tasks. After inducing the participants into a positive mood, Isen et al. (1987) measured participant responses to creative tasks. They found that the comedic film or gift of candy led to a kind of elation that facilitated participants to solve problems that required an inventive solution. Isen et al. (1987) suggested that positive emotions allow for a defocused awareness that invites new ways of interpreting various surrounding stimuli that previously were not considered by the individual. The defocused awareness is known by many researchers as something called latent inhibition.

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Latent inhibition (LI) is an individual's ability to block out non-salient information or stimuli (Carson, Peterson, & Higgins, 2003). The lower the LI, the more likely the individual will fail to ignore irrelevant stimuli. If LI is high, then the individual's ability to ignore irrelevant stimuli will increase. In a sample of undergraduate students, Carson et al. (2003) discovered that decreased LI was a factor in creative thinking. They also discovered an increase in creative accomplishment when a high intelligent quotient (IQ) was combined with low LI. IQ was positively correlated with creative accomplishment while LI was negatively correlated with creative accomplishment (Carson et al., 2003). A positive correlation implies that two correlated variables will rise or fall together. A negative correlation implies an inverse relationship between two variables; as one correlated variable rises, the other will fall. Thus, creative accomplishment increased as IQ increased and LI decreased.

If low LI leads to heightened creative abilities, then it may be possible that the personality traits of openness and extraversion could also be involved in lowering LI. Peterson, Smith, and Carson (2002) found that both openness and extraversion were correlated with a low LI. In contrast to this study, Burch et al. (2006) found that openness and LI were not related; they also found that openness was not related to chronic happiness. While the findings by Burch et al. (2006) may imply that openness has no function in the realm of creativity, Simonton found results similar to Peterson, Smith, and Carson (2002). According to Simonton (2009), openness and low LI demonstrated a link with creativity. Simonton's findings seem like common sense. If one were open to his or her environment, then LI would be low in comparison to those who were more focused on relevant stimuli. For example, an individual with high LI would most likely notice cars and stop lights more often than noticing the scenery while driving to work. The scenery is irrelevant and the driver ignores it; this is high LI. But the issue of common sense is one reason why research must be done. It cannot be assumed that things will work akin to our presupposed logical understanding. Some things that seem quite logical turn out to be the exact opposite when tested, and vice versa. The world cannot survive on common sense alone, especially if research finds that common sense does not always make sense. If LI demonstrates a relationship with an increase in creativity, then of course openness will also be included. It would be a contradiction to conclude that one has low LI but does not have the personality trait of openness. An individual who is not open to his or her surroundings indicates high LI. Low LI and openness are negatively correlated; as LI decreases, openness increases.

Another personality trait that demonstrates a positive correlation with creativity is extraversion (Furnham et al., 2008; Lyubomirsky et al., 2005; Peterson, Smith, & Carson, 2002). Lyubomirsky et al. (2005) found a positive relationship between extraversion, positive affect, and happiness. They found that extraversion not only related to happiness and positive affect, but to higher energy levels as well. Furnham et al. (2008) found that extraversion, compared to the other personality traits measured in the study, was a superior forecaster of divergent thinking. According to Runco (2008), divergent thinking tests are effective at measuring creative potential in individuals.

Furnham et al. (2008) used three individual tests that required participants to observe three inert objects (i.e. paperclip, blanket, etc.) and list as many unusual uses as they could within three minutes. Interestingly, extraversion was not the only trait that related to divergent thinking creativity. Furnham et al. (2008) found that hypomania and poor academic performance also related to high levels of divergent thinking. Consistent with Furnham et al. (2008), Schuldberg (2001) found positive correlations between creativity and hypomania.

Hypomania is a phase of bipolar type II disorder that includes elevated mood, high energy, restlessness, and racing thoughts; these are just a few of the possible symptoms that may be present during a hypomanic episode (American Psychiatric Association, 2000). The hypomanic symptoms of elevated mood and high energy would agree with findings mentioned earlier from Lyubomirsky et al. (2005) and Isen et al. (1987) that found creativity among those who had high energy and elevated moods.

Thus far, positive affect has been a good indicator of heightened creative abilities. When extraversion and hypomanic symptoms were present along with low LI, creativity was heightened. Openness may be a factor in heightened creativity, but more research is needed to confirm or deny its relationship with creativity.

Mental Illness and Creativity

Mental illness is one variable that surprisingly exhibits a relationship with creativity (Jamison, 1993). One particular illness that demonstrates this link is bipolar disorder, which is characterized by mood fluctuations between manic and depressive episodes; hypomanic episodes are similar to manic episodes, but are not as severe. Patients in a manic or hypomanic episode usually experience feelings of euphoria and elation, while those in depression at the very least experience loss of interest in things that used to bring them happiness (American Psychiatric Association, 2000). If happy people are those who are creative, and creativity is found among those with bipolar disorder, then it may be during the manic or hypomanic phase when the patient finds heightened creative abilities.

Children of parents with bipolar parents were found to score higher on creativity scales than healthy children without mental illness (Simeonova et al., 2005). The children of bipolar parents either had bipolar disorder or attention-deficit hyperactive disorder (ADHD). The most intriguing finding of the study was the similar creativity levels found among the bipolar and ADHD children. These two groups scored vastly higher than those in the healthy group (Simeonova et al., 2005). It should be noted that manic and hypomanic episodes are not symptoms of ADHD and were never present among this group of children.

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The ADHD group scoring at about the same level as those with bipolar was very surprising to Simeonova et al. (2005). They initially predicted that the bipolar group would score higher than the healthy and ADHD groups. An important piece of information about the results of this study is the indication that creativity in bipolar disorder is not due to the exhilaration and exuberance that characterizes manic and hypomanic episodes (Simeonova et al., 2005). This study is a clear contrast of what was found in the creativity and positive affect section. If creativity is not dependent on positive affect or any type of affect, then it may be genetically inheritable.

Similar to the results of Simeonova et al. (2005), families who have mental illnesses, or are at risk for psychosis, exhibit enhanced forms of creative cognition (Karlsson, 2004). This implies that there may be a genetic component in mental illness due to the prevalence of mental illnesses in families that seem to continue throughout generations. If creativity is linked to mental illness, then it is possible that heightened creativity may be genetically inheritable through families or those at risk for psychosis.

The possibility for a genetic inheritance of creativity was researched by Dr. Szabolcs Kéri (2009). Kéri investigated the neuregulin 1 gene and how it influences creativity in a sample of participants without mental illness. The results illustrated that those with the highest creativity scores carried the T/T genotype, which is also related with risk for psychosis and altered prefrontal activation (Kéri, 2009). It seems that a creativity-psychosis genetic link has been established based on the results of this study, but more research is needed to see if these results can be replicated. Although this largely explains how creativity can exist among those with mental illness, it still leaves a question about the link of affect and creativity unanswered. If all creative individuals were at risk for psychosis, then a much larger proportion of the world's population would be diagnosed with a specific mental illness. It may be the most creative among us that carry the highest risk for developing psychosis.

It was mentioned earlier, in the study by Furnham et al. (2008), that hypomania was related to poor academic performance. Karlsson (2004) found that the altered levels of brain activity supposedly connected with the risk of psychosis led to superior performance in academic settings. Individuals with bipolar type I disorder can experience psychotic symptoms, but individuals with bipolar type II disorder usually do not (Jamison, 1993). This finding is particularly interesting because psychotic symptoms are linked with superior academic performance while hypomania is linked with poor academic performance. Perhaps the academic institutions are using different teaching methods or the research participants are in differing levels of school (i.e. high school vs. college).

Negative Affect and Creativity

Charyton et al. (2009) found that both positive and negative affect influenced the development of a creative personality in college students. A study by Akinola and Mendes (2008) established that

artistic creativity increased following an augmented negative mood status. Akinola and Mendes (2008) suggest that rumination over negative criticism may lead to a diversion that would allow increased levels of creativity through the medium of unconscious thought. The negative feedback may have motivated the participants to put forth a greater effort which may have influenced higher levels of creativity. Verhaeghen, Joorman, and Khan (2005) found that self-reflection, or rumination, increases the risk for depression but can also prompt awareness and capability for creative performance. Depressive symptoms have been shown to decrease creativity, but when depression is coupled with heightened self-reflection, creativity tends to increase (Verhaeghen, Joorman, & Khan, 2005). The depressed individual's rumination helps produce several ideas that create possibilities for more creative ideas to surface (Verhaeghen, Joorman, & Khan, 2005).

The first two studies of this section have shown that rumination can lead to increased creativity during states of negative emotion (Akinola & Mendes, 2008; Verhaeghen, Joorman, & Khan, 2005). According to George and Zhou (2002), negative moods are superior to positive moods under certain circumstances. In their study, they researched the effect rewards had on the moods of employees, and also examined the level of creativity output from those with negative and positive affect. George and Zhou (2002) presumed that those with negative moods would exert more effort to create unique ideas that would be beneficial to their specific company. They also believed that those with positive moods would have lower levels of creativity due to high levels of confidence that supposedly would persuade them to not try as hard. The results of the study showed that negative moods were positively related to creative achievements when rewards, recognition, and lucidity of feelings were high (George & Zhou, 2002).

Negative affect did not have the same influence on creativity as mental illness and positive affect. Creativity is highest in those with negative affect when self-reflection is high and rewards are expected for creative performance. George and Zhou (2002) feel that more research is needed to truly understand the relationship between creativity and affect.

Conclusion

“The happiest people are those who think the most interesting thoughts” (Lyubomirsky et al., 2005, p. 830). In order to investigate the validity of this quote, creativity was explored in regards to positive affect, negative affect, and mental illness. If the happiest people think the most interesting thoughts, then the saddest people must think the least interesting thoughts.

Positive affect does greatly influence creativity in the general population, but creativity is also found in higher levels among those with mental illness (Simeonova et al., 2005). Traits of mental illness, such as hypomania in bipolar type II disorder, were positively correlated with high levels of creativity (Furnham et al., 2008; Schuldberg, 2001). One of the most intriguing discoveries was the finding of a genotype that was linked to high creativity and a risk for psychosis; implying that

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affect alone cannot be the lone indicator of creativity levels in the entire population (Kéri, 2009). Negative affect failed to produce a substantial influence on creative output unless high self-reflection or perceived rewards were present (Akinola & Mendes, 2008; George & Zhou, 2002). Along with those findings, Akinola and Mendes (2008) noted that artistic creativity was found to increase after periods of increased negative mood.

Is creativity dependent on an elevated mood? According to the research in this paper, it depends. Reduced LI, openness, and divergent thinking were linked to creativity, as was psychoticism (Simonton, 2009). Psychoticism refers to specific qualities that are found among psychosis, specifically schizophrenia and bipolar disorder (Porzio, 2009). The research illustrates that creativity may be a genetic inheritance that is not solely dependent on an elevated mood. In fact, higher levels of creativity were found in children of parents with bipolar disorder than children of parents without mental illness. These findings had nothing to do with affect (Simeonova et al., 2005). It is not always true that happiness leads to creative thoughts. More research is necessary in order to clarify if creativity is truly genetic, influenced by mood, or a combination of the two.

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