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Are Psychedelics Able to Play a Role in Influencing Creativity?

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Introduction

In this particular WRS class, students were asked to come up with a research question and explore that question in an argumentative paper. Janvi Bali explores whether or not there is a connection between psychedelics and creativity.

Keywords: brain, creativity, microdosing, psychedelics

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Research Question: Can psychedelic substances influence the development of creativity in individuals who actively use them, and if so, through what neurobiological and psychological mechanisms?

Creativity is the ability to generate ideas that are both novel and useful. This concept remains one of the most sought-after yet least understood cognitive processes in human psychology (Girn et al., 2020). In recent years, psychedelics such as LSD, psilocybin, and ayahuasca have re-entered scientific and public discourse for their potential influence on perception, cognition, and mood. This renewed attention raises a critical question: To what extent might psychedelics correlate with enhanced creativity, and under what conditions could such effects occur? Understanding this relationship matters because creativity fuels progress across science, art, and innovation, yet many of the neural mechanisms that underlie creative thinking remain obscure. Psychedelics have been shown to alter brain connectivity, mood, and cognitive flexibility. These features overlap with the processes associated with creative ideation.

It is important to approach this topic with scientific caution: existing research suggests correlations between psychedelic use and creativity, rather than direct causation. While dopaminergic and glutamatergic neurotransmission pathways have been implicated in both psychedelic experiences and creative cognition, these associations are complex and likely mediated by multiple neural and psychological variables. This paper investigates the question: Can psychedelic substances influence the development of creativity in individuals who actively use them, and if so, through what neurobiological and psychological mechanisms? By synthesizing current findings from cognitive neuroscience and psychopharmacology, this work aims to explore how psychedelics may modulate the brain's creative networks, while acknowledging the methodological and ethical limitations of drawing definitive causal conclusions.

Psychedelic Links to the Brain's Creativity Networks

Research led by Girn et al. (2020), based on data collected, found that psychedelics were able to induce an overall happier mood in healthy participants. The facilitatory theory, based on a humanist approach, suggests positive mood states result in activation of complex, deep thoughts and memories, which are geared to be positive. In turn, this is able to support further innovation, flexibility, and creativity. Psychedelics increase frontal and divergent prefrontal-subcortical activation of the brain; this can be ascribed to the interference of thalamic gating of sensory and cognitive information. Thalamic gating is under the control of glutamatergic. This is related to psychedelics as they have secondary effects on glutamatergic and dopaminergic transmission. Glutamatergic and dopaminergic transmission are both key in stimulating creativity in a psychedelic user. Without these neural pathways, an individual's creative mind would not be able to function effectively. The positive mood individuals feel after

engaging with psychedelics has been associated with increased activity in the dorsolateral prefrontal cortex (dlPFC).

This region of the brain is correlated with goal-directed planning for problem-solving and enhanced thinking. Both together influence creativity development, specifically enhanced thinking, which is the foundation of our creative minds. Various studies conducted report a direct relationship between creativity and enhanced thinking, both relating to the neurobiological basis of creativity. When considered together, both are associated with increased functional connectivity as a result of psychedelic use. Therefore, creativity can be attributed to this functional connectivity, which is enhanced by psychedelics.

As mentioned in the introduction, creativity is not a singular state. Creativity arises from stimulation in multiple locations of our brain (Girn et al., 2020). Psychedelic users are often found to have increased stimulation in different regions of the brain once the drug is administered. This is different from other phenomena, such as goal-directed thought or dreaming, which have more defined positions. Creative thoughts can arise in a variety of different mental states. Creatively improvising within a circumscribed task domain, such as to produce music filled with emotions, can be placed in a mental state more similar to goal-directed thought, while divergent thinking, which looks at all possible solutions, may take place in a mental state more similar to dreaming. Therefore, the generation of creativity is best conceptualized as a product of mental states that may vary along constraints of thought, rather than being encompassed by one mental state. Psychedelics can directly impact regions of our brain, which then leads to varying mental states, provoking creativity to arise.

Effectiveness of Microdosing Psychedelics on Creativity

Microdosing of psychedelics is proposed to have some of the benefits to users, with minimizing the risks that would come with full dose-use (Bornemann, 2020). Microdosing is described as involving a sub-threshold dose, meaning users engaging with it identify a dose at which they do not experience the feeling of a “high,” or simply microdosing to an extent which only gives minimal acute drug effects (Polito & Stevenson, 2019). It is said to improve problem-solving and promote cognitive flexibility, significant to creative thinking. Bornemann's published research reveals many benefits reported by microdosers, which include improvements in mood, focus, and creativity. The overall effect on users who take microdoses has been described as "a really good day."

In the qualitative study conducted by Prochazkova et al. (2018), participants performed three tasks once before drug consumption and once under the influence of a microdose of a psychedelic truffle. The data indicated clear enhancement in both convergent and divergent thinking with no significant changes in intelligence. Therefore, the conclusion that can be

drawn from this study is that psychedelic substances assist with creativity through improving task transitioning processes occurring in the brain.

In contrast, an observational study led by Polito and Stevenson (2019) did not find any changes in creativity among those who microdosed. Neither self-report measures on acute microdose effects nor a 6-week post-rating of a more objective creativity task provided significant results. The highest microdose administered to an individual led to a feeling of a "high;" however, it can be argued that this dose would not qualify as a microdose. This evidence concludes that the creativity changes associated with microdosing are ultimately mixed; it is nearly impossible to draw definitive conclusions on such a topic when a microdose differs from individual to individual and their threshold capacity.

When both studies put together present opposing views, it is crucial to consider the evidence presented. Polito and Stevenson's (2019) study did not provide ample evidence of psychedelic impact, whereas Prochazkova et al. found an increase in creativity because of the drug. Limitations should be considered when deeming the study more credible towards supporting the effectiveness of microdosing psychedelics on creativity, as the quantitative study was self-reported, and the observational study was directly monitored by researchers.

Role of Psychedelics Correlated with Creativity

Janiger and De Rios (1989) examined an experiment from the 1950s in which artists were gathered to draw a kachina doll with specific structure and details. The artists drew two copies, one before taking any psychedelics and one hour prior to ingesting the drug. Their art pieces were then assessed by a professor of art history to investigate the psychedelic impact on the creativity of the artist.

Representative changes were found in the artists' main art style—the most significant change being artists whose styles were intrinsically representational or abstract were seen to be more expressionistic or nonobjective. Changes also included, yet were not limited to: relative size expansion, greater intensity of color and light, oversimplification, symbolic depiction of objects, fragmentation, and distortion. Most of the artists who were involved with this experiment believed their pieces of art after taking psychedelics were more fascinating and aesthetically superior to their usual mode of expression. It is obvious from the artwork that psychedelics played a significant role in the drawing of the kachina doll, before and after administration. After the creative mind of the artist was greatly stimulated, they were able to produce art pieces that they normally would not. Psychedelics not only induced creativity, but also brought light to a new side of the artist's creative minds.

Conclusion

While debates persist regarding the extent to which psychedelics influence creative ability, current evidence suggests a meaningful correlation between psychedelic use and enhanced cognitive processes associated with creativity. Psychedelics appear to engage neurobiological systems, particularly dopaminergic and glutamatergic pathways, that are also implicated in divergent thinking, cognitive flexibility, and mood regulation. These overlapping mechanisms may help explain why users often report heightened imagination, openness, and problem-solving capacity following psychedelic experiences.

However, creativity is not a singular or static trait; it emerges from a dynamic interplay of multiple neural states, personal context, and environmental factors. Psychedelics may facilitate transitions between these cognitive states, temporarily loosening rigid patterns of thought that constrain originality. Yet, as with most psychoactive interventions, these effects are correlational rather than causal, and vary widely across individuals, dosage levels, and experimental conditions.

Evidence surrounding microdosing remains particularly mixed. Some studies report modest improvements in creativity and mood, while others find no significant change. These discrepancies highlight the need for more rigorous, controlled methodologies to disentangle placebo effects, expectancy bias, and true neurochemical influence.

Future research should integrate psychometric tools and longitudinal designs to better quantify changes in creativity over time, explore dose-response relationships, and investigate whether tolerance or diminishing returns occur with repeated use. By refining our understanding of how psychedelics modulate the brain's creative networks, we can gain deeper insight into both the nature of creativity itself and the ethical, cognitive, and therapeutic boundaries of psychedelic science.

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