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The Past and Future of Psychedelic Science: An Introduction to This Issue

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ABSTRACT

Psychedelic plants and fungi have been used in indigenous medicinal traditions for millennia. Modern psychedelic research began when Albert Hofmann first synthesized lysergic acid diethylamide (LSD-25) in 1938. Five years later, became the first person to ingest LSD. Hofmann was unaware of the significance of his actions, and the effects they would set in motion. After a burgeoning period of scientific and cultural exploration in the1950s and '60s, psychedelic research was slowed to a near halt. Throughout the 1970s and '80s governmental interventions severely hampered global psychedelic research, despite evidence of the limited medical risks and therapeutic potential of psychedelics. After decades of persistent education and advocacy, rigorous research employing psychedelics as tools of discovery and healing are abundant today. Studies are taking place in research institutions and in private practice sites supported by nonprofit and for-profit organizations, as well as individual investigators. This research includes clinical trials with MDMA-assisted therapy for the treatment of PTSD, alcoholism, and social anxiety, and psilocybin clinical studies for depression and addiction, as well as the ability of psychedelics to catalyze spiritual or mystical experiences and inspire creativity, and into the neuroscientific understanding the effects of psychedelic substances on our nervous system.

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Introduction

There are more clinical trials in psychedelics happening today, both for basic effects and therapeutic purposes, than at any time in history. In the United States (US) specifically, the past two years have brought about swift and directed progress in the development and advancement of clinical psychedelic research. The US Food and Drug Administration (FDA) designated both MDMA-assisted psychotherapy for PTSD and psilocybin for treatment-resistant depression as Breakthrough Therapies, meaning that these are some of the most promising drugs currently in development. As recently as March 2019, the FDA approved esketamine, a dissociative anesthetic which is psychedelic in lower doses, as a treatment for depression.

The worldwide explosion of psychedelic studies is comprehensive, promising, and multidisciplinary. Findings from these studies may, in turn, lead to a world in which therapeutic use of psychedelics is accepted and supported. The findings may also open the door to a world of previously under-explored uses. As stated by Dr. Stanislav Grof, pioneer of transpersonal psychology and psychedelic research, "the potential significance of LSD and other psychedelics for psychiatry and psychology [is] comparable to the value the microscope has for biology or the telescope has for astronomy" (Stolaroff 2004). Modern neuroimaging studies of the effects of psychedelic compounds can potentially enable us to better understand brain function. The discovery of LSD contributed to the discovery of serotonin. There is much to be understood about the mind and body that psychedelic research has the direct capacity to inform and affect (Nichols 2016). The potential is great, and the work that is being done today is just the tip of the iceberg.

How did we get here?

Albert Hofmann's legendary bicycle ride catalyzed the "second wave" of psychedelics (Smith 2019). To catalog and record this wave, the *Journal of Psychedelic Drugs* – now called the *Journal of Psychoactive Drugs* – was founded in 1967 (Smith 2019).

> [T]he *Journal's* founding purpose was to act as a pioneering tool of information dissemination for the psychedelic revolution, presenting never before published observations and studies on the whole range of psychedelics, not just LSD, thus creating a viable platform from which these complex drugs could be comprehended.

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The *Journal* acted as a reliable resource for key actors in psychedelic research to contribute and for enthusiasts to reference during the second wave. It also contributed to the legitimization of the role and potential of psychedelics in psychological and psychiatric research.

In response to the virtual elimination of psychedelic research and the stigma associated with psychedelics, the *Journal* changed its name to the *Journal of Psychoactive Drugs*. In this 50th anniversary issue, JPD returns to its roots. This issue reflects the breadth of psychedelic research today, including assessments of group psychotherapy with psychedelics and the use of very small doses (microdoses) of psychedelics, examining the effects of drugs in specific populations, re-examining older compounds with newer tools, and accounts of individuals undergoing psychedelic psychotherapy.

Current research

There is more psychedelic research happening today, both for neuroscience and therapeutic purposes, than at any time in history. Major universities, research hospitals, and medical practices all over the world are participating in studies designed to learn more about the brain and how it works and assess the therapeutic safety and efficacy of psychedelics in a modern, clinical context. Preliminary Phase 2 research suggests that psychedelic-assisted psychotherapy produces lasting benefits, and can change facets of personality in the domain of openness.

Authors in this special issue found that "MDMA-assisted therapy may be an effective catalyst in autistic adults for intra and interpersonal change" (Danforth 2019), and that the "respectful and controlled use of hallucinogenic/psychedelic drugs taken in communitarian settings can be incorporated into modern society with potential benefits for public health" (Ona et al. 2019).

Also included in this issue are the findings from a study into the effects of the psychedelic amphetamine MDA. This study highlights the value of applying modern research techniques to revisit older psychedelic compounds that have been neglected from clinical trials thus far, in order to provide a more comprehensive understanding of these substances (Baggott et al. 2019). The new crop of psychedelic research offers benefits outside of psychiatric research (Baggott et al. 2019)

Mdma

This year, 2019, marks the beginning of US Food and Drug Administration (FDA)-regulated Phase 3 clinical trials for MDMA-assisted psychotherapy in the treatment of severe posttraumatic stress disorder (PTSD). These large scales, multi-site, randomized, placebo-controlled clinical trials are required by the FDA to demonstrate safety and efficacy prior to any prescription use. MDMA-assisted psychotherapy for PTSD has progressed to Phase 3 FDA drug development research, with FDA approval anticipated by the end of 2021 or early 2022.

On November 29, 2016, the Multidisciplinary Association for Psychedelic Studies (MAPS) was granted FDA clearance to conduct Phase 3 trials of MDMA-assisted psychotherapy for posttraumatic stress disorder (PTSD). In 2017, based on the promising results of an international series of six Phase 2 studies in a combined analysis (N = 107), the FDA designated MDMA-assisted psychotherapy as a Breakthrough Therapy for PTSD, opening the way for an expedited review (Smith 2019). In 2018, MAPS successfully raised the necessary capital to conduct the studies, approximately $28 million, from individual donors and small foundations, and as of January 2019, screening and enrollment have officially begun.

The Phase 3 trials include 15 sites participating, in the US, Canada, and Israel. MAPS is also planning to start European Phase 3 trials in 2020. A full list of currently recruiting Phase 3 sites is available at the trial registry, clinicaltrials.gov. Over the course of 12 weeks, participants in MAPS' Phase 3 trials undergo 12 weekly, 90-min non-drug preparatory and integrative sessions along with three day-long sessions about a month apart from either MDMA or placebo in conjunction with psychotherapy.

This special issue includes a case report from a MAPS-sponsored Phase 2 trial of Cognitive-Behavioral Conjoint Therapy (CBCT) combined with MDMA for the treatment of PTSD in pairs of people, led by researchers at Ryerson University in Toronto (Wagner et al. 2019). The promise of MDMA-assisted psychotherapy lies in the creation of an environment where patients no longer feel as though they are living with PTSD (Wagner et al. 2019), in which they are free to imagine and conceive of a life that is unburdened by their trauma. This therapy views MDMA as a therapeutic catalyst for participants as they integrate the trauma they experienced. MDMA-assisted psychotherapy allows them to remember that living beyond their trauma-induced pain is within their capacity. "Following this [psychotherapy] session, [primary participant] Stuart reflected, 'there's no easy fix – I need to work through the darkness'" (Wagner et al. 2019). This acknowledgment is vastly different from the emotional numbing that the participant reported in the beginning of his treatment. Stuart demonstrated a path toward moving through. The addition of MDMA-assisted psychotherapy allowed the participants to use the tools provided by the cognitive behavioral therapy treatment.

Another report in this issue looks at research participant perspectives about their experience a year after completing the study of MDMA-assisted psychotherapy for PTSD. Participants reported improvements in self-awareness, relationships, social skills, and making healthier and rewarding choices one year after the trial ended (Barone et al. 2019). Participants noted that various components of the trial – preparatory and integrative sessions, strong rapport with the therapist team, and the MDMA-assisted psychotherapy sessions themselves – all played roles in the lasting benefits for those individuals (Barone et al. 2019). Not only is qualitative research such as this a valuable method for gathering a nuanced and comprehensive understanding of the results of psychedelic-assisted studies, it also suggests that there is more to recovery than reducing symptoms. When it comes to examining the full effects of a treatment, standardized, quantitative measurements of PTSD are powerful but limited, and understanding significant qualities such as increased self-awareness and function can require going beyond simple assessments of symptom frequency and intensity (Barone et al. 2019).

Psilocybin

According to new research, intensified feelings of existential and spiritual wellbeing often reported by psilocybin users may be at the core of what could make it an effective medicine in the fields of palliative care, psycho-oncology, and psychotherapy (Ross et al. 2016). There has also been a longstanding interest in psychedelic compounds as facilitators of creativity. Mason and colleagues pursued this hypothesis, and found that psilocybin improved divergent thinking, a critical process involved in creativity, and enhanced participants' wellbeing and emotional empathy (Mason et al. 2019).

A growing number of studies involving patients dealing with life-threatening illnesses are demonstrating the therapeutic efficacy of high dose psilocybin-assisted therapy. Coupled with a supportive therapeutic environment, psilocybin has been shown to decrease symptoms of anxiety and depression that often accompany a life-threatening diagnosis, with promising results (Griffiths et al. 2016). A historical examination of psychedelic compounds and palliative care notes that particularly in the conventional, Western model of care, there are no pharmacological treatments for end of life distress or for managing the anxiety and fear that a life-threatening medical diagnosis may bring. Conversations between medical professionals and patients tend to be clinically focused in these situations, and little to no attention is paid to the emotional and psychological toll on the patient. In fact, as Dyck writes in this issue, "medical historians suggest that despite the inevitability of death, the practice of medicine is preoccupied with life, recognizing death as a defeat, and something beyond the grasp of modern medicine" (Dyck 2019). Given this, questions of existentialism prevail as some of the most daunting and mysterious of the human experience, and when faced with this acute reality, many are left alone to suffer under the darkened shadow of fear of the ultimate unknown.

The finding that among patients with life-threatening cancer, "psilocybin was associated with enduring anxiolytic and anti-depressant effects […], sustained benefits in existential distress, and quality of life, as well as improved attitudes toward death" (Ross et al. 2016), strongly suggests that in conjunction with psychotherapy, psilocybin has the potential to alleviate profound suffering. Additionally, new neuroimaging research with psilocybin has offered hints as to the changes in brain activity and connectivity associated with its antidepressant effects (Carhart-Harris et al. 2017; Ross et al. 2016).

Neuroimaging provides a means of locating neural correlates of the experiences people report under the influence of psilocybin. These newly made discoveries concerning brain connectivity and activity can offer a better understanding of the formation and overall arc of the psychedelic experience (Fox et al. 2018). For the first time in any substantive way, scientists and researchers are starting to be able to see how psychedelics affect the brain.

Ketamine

Ketamine is a powerful anesthetic, the clinical effects of which have been understood by medical practitioners across disciplines for decades. It is one of only two injected general anesthetics included in the World Health Organization's Model List of Essential Medicines (World Health Organization 2017). Additionally, ketamine has demonstrated incredible potential as a rapid, highly effective antidepressant (Hayley and Litteljohn 2013), and its antidepressant function is believed to be the result of its antagonism of NMDA receptors, and the resulting impact on neuroplasticity (Dore et al. 2019).

Unlike MDMA and psilocybin, ketamine is a legal psychedelic medicine used for anesthesia (Dore et al. 2019). It is currently the only psychedelic drug legally available to mental health providers in the US. In March 2019, the FDA approved intranasal esketamine (the s-enantiomer of the drug) spray for prescription use as a treatment for hard-to-treat depression. Dore and colleagues reviewed responses to ketamine-assisted psychotherapy (KAP), and found that participants reported reduced anxiety and depression, and that people with greater symptom burden experienced greater

benefits from the treatment. Dore and colleagues believe that the dissociative effects of ketamine are integral to its success rather than a side effect.

Ketamine-assisted psychotherapy (KAP) is growing rapidly among practitioners. This recognition comes just in time as KAP is proving largely to be an effective, ground-breaking treatment (Dore et al. 2019).

The data also encourage further research into the efficacy of ketamine-assisted psychotherapy for a variety of psychiatric diagnoses including depression, anxiety, and PTSD (Dore et al. 2019). It is important to stress, particularly given the availability of ketamine within the clinical, therapeutic space, that while ketamine administration may be sufficient to relieve some kinds of symptoms, the combination of the drug with psychotherapy might produce lasting changes.

Conclusion

As the renaissance of psychedelic exploration and research gains public awareness and traction, the potential for measured, substantive progress when it comes to therapeutic application continues to deepen. The contents of this special edition of *The Journal of Psychoactive Drugs* illustrate the degree to which neuroscience and clinical research on psychedelics are now flourishing, as well as the breadth of considerations, historical and cultural, related to psychedelic use within, and outside of medicine.

The more research that is conducted, the closer we get to integrating psychedelics into modern medicine and culture, and revolutionizing mental health care. Over the last 50 years, the JPD helped establish the credibility of the scientific field of psychedelic medicine, seen its suppression, and the renaissance. Over the next 50 years, the JPD will likely document the full flowering of the psychedelic research renaissance.

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References

Baggott, M. J., K. J. Garrison, J. R. Coyle, G. P. Galloway, A. J. Barnes, M. A. Huestis, and J. E. Mendelson. 2019. Effects of the psychedelic amphetamine MDA (3,4-methylenedioxyamphetamine) in healthy volunteers. *J Psychoactive Drugs* 51(02):108–117.

Barone, W., J. Beck, M. Mitsunaga-Whitten, and P. Perl. 2019. Perceived benefits of MDMA-assisted psychotherapy beyond symptom reduction: qualitative follow-up study of a clinical trial for individuals with treatment-resistant PTSD. *J Psychoactive Drugs* 51 (02):199–208. doi:10.1080/02791072.2019.1580805.

Carhart-Harris, R. L., L. Roseman, M. Bolstridge, L. Demetriou, J. N. Pannekoek, M. B. Wall, M. Tanner, M. Kaelen, J. McGonigle, K. Murphy, et al. 2017. Psilocybin for treatment-resistant depression: FMRI-measured brain mechanisms. *Sci Rep* 7 (1):13187. doi:10.1038/s41598-017-13282-7.

Danforth, A. L. 2019. Embracing neurodiversity in psychedelic science: A mixed-methods inquiry into the MDMA experiences of autistic adults. *J Psychoactive Drugs* 51 (02):146–154. doi:10.1080/02791072.2019.1587116.

Dore, J., B. Turnipseed, S. Dwyer, A. Turnipseed, J. Andries, G. Ascani, C. Monnette, A. Huidekoper, N. Strauss, and P. Wolfson. 2019. Ketamine assisted psychotherapy (KAP): Patient demographics, clinical data and outcomes in three large practices administering ketamine with psychotherapy. *J Psychoactive Drugs* 51 (02):189–198. doi:10.1080/02791072.2019.1587556.

Dyck, E. 2019. Psychedelics and dying care: A historical look at the relationship between psychedelics and palliative care. *J Psychoactive Drugs* 51 (02):102–107. doi:10.1080/02791072.2019.1581308.

Fox, K., M. Girn, C. Parro, and K. Christoff. 2018. Functional neuroimaging of psychedelic experience: An overview of psychological and neural effects and their relevance to research on creativity, daydreaming, and dreaming. In *The cambridge handbook of the neuroscience of creativity*, ed. R. Jung and O. Vartanian, 92–113. Cambridge, UK: Cambridge University Press.

Griffiths, R. R., M. W. Johnson, M. A. Carducci, A. Umbricht, W. A. Richards, B. D. Richards, M. P. Cosimano, and M. A. Klinedinst. 2016. Psilocybin produces substantial and sustained decreases in depression and anxiety in patients with life-threatening cancer: A randomized double-blind trial. *J Psychopharmacol* 30 (12):1181–97. doi:10.1177/0269881116675513.

Hayley, S., and D. Litteljohn. 2013. Neuroplasticity and the next wave of antidepressant strategies. *Front Cell Neurosci* 7:218. doi:10.3389/fncel.2013.00218.

Mason, N. L., E. Mischler, M. V. Uthaug, and K. P. C. Kuypers. 2019. Sub-acute effects of psilocybin on empathy, creative thinking, and subjective well-being. *J Psychoactive Drugs* 51 (02):123–134. doi:10.1080/02791072.2019.1580804.

Nichols, D. E. 2016. Psychedelics. *Pharmacol Rev* 68 (2):264–355. doi:10.1124/pr.115.011478.

Ona, G., M. Kohek, T. Massaguer, A. Gomariz, D. F. Jimenez, R. G. Dos Santos, J. E. C. Hallak, M. A. Alcazar-Corcoles, and J. C. Bouso. 2019. Ayahuasca and public health: health status, psychosocial well-being, lifestyle, and coping strategies in a large sample of ritual ayahuasca users. *J Psychoactive Drugs* 51 (02):135–145. doi:10.1080/02791072.2019.1567961.

Ross, S., A. Bossis, J. Guss, G. Agin-Liebes, T. Malone, B. Cohen, S. E. Mennenga, A. Belser, K. Kalliontzi, J. Babb, et al. 2016. Rapid and sustained symptom reduction following psilocybin treatment for anxiety and depression in patients with life-threatening cancer: A randomized controlled trial. *J Psychopharmacol* 30 (12):1165–80.

Smith, D. E. 2019. The role of the journal of psychedelic drugs in the evolution of psychedelic medicine. *J Psychoactive Drugs* 51 (02):98–101. doi:10.1080/02791072.2019.1589607.

Stolaroff, M. 2004. *The Secret Chief Revealed: Conversations with a pioneer of the underground therapy movement*. Sarasota FL: Multidisciplinary Association for Psychedelic Studies.

Wagner, A. C., M. C. Mithoefer, A. T. Mithoefer, and C. M. Monson. 2019. Combining cognitive-behavioral conjoint therapy for PTSD with 3,4-methy lenedioxymethamphetamine (MDMA): A case example. *J Psychoactive Drugs* 51 (02):166–173. doi:10.1080/02791072.2019.1589028.

World Health Organization. 2017. WHO model list of essential medicines. https://apps.who.int/iris/bitstream/handle/10665/273826/EML-20-eng.pdf?ua=.