

The Beckley Foundation Brings Microdosing Under the Microscope

AMANDA FEILDING



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MY LONG-STANDING INTEREST IN LSD AND MICRODOSING

The ancient Chinese game of Go is challenging and complex. So complex, in fact, that artificial intelligence (AI) has only recently managed to beat the world champion—some twenty years after IBM’s Deep Blue claimed victory over chess grandmaster Gary Kasparov. And yet, one of the most intriguing effects of my personal experimentation with LSD and microdosing during the 1960s was that it made me a better Go player: I found that if I was on LSD and my opponent wasn’t, I won more games.

This positive effect is a clue as to why computers took so long to learn to play Go well. Go cannot be beaten by sheer computing force in the manner that Deep Blue played chess. Its complexity requires a very human ability to play it well: intuitive pattern recognition. Recognising patterns—what we might call insight—sits somewhere at the intersection between intelligence and creativity. Larger doses of LSD are well-known to produce a sense of insight: psychedelics can act as liquid open-mindedness, allowing users to look upon themselves, their behaviours, and their life histories with fresh eyes, seeing things that they hadn’t realised before. Perhaps it is not so surprising after all, that a microdose, or a moderate dose, of LSD could allow me to better see the patterns implicit on the Go board before me.

I am by no means alone in seeing benefits from microdosing. Increasing numbers of people are now taking LSD, not for hallucinations or ego-dissolving mystical experiences, but as a “psychovitamin” to improve their lives in all manner of ways. Advocates of microdosing swear by the practice, reporting more vitality and enthusiasm, an increased ability to get into the “flow,” as well as feeling more connected to others, themselves, and their values. Others attribute their success in overcoming addiction to it. Reading through accounts of the experiences of microdosers, a theme that appears again and again is that these small amounts of LSD allow them to work better, think more creatively, and feel more alive to the present moment—what we might today call “living mindfully.”

More palatable to the wider community than larger doses, this alternative way of using psychedelics has already attracted a large number of adepts, from Silicon Valley hotshots to individuals struggling with depression.

Engineers, programmers, writers, and artists are sharing their stories in numerous blogs and news outlets, and microdosing is now beginning to be discussed outside the psychedelic community, awakening the potential of lifting the 50-year-old veils of taboo and stigma, giving us a second chance to integrate these substances into society in a safe and beneficial way.



The ancient Chinese game of Go requires logical thinking and creativity, two points of interest in the LSD microdosing study.

In spite of its increasing number of adherents, all of the current evidence on LSD microdosing is anecdotal in nature. There are no published scientific studies exploring the mechanisms of action, benefits, or possible side-effects of the practice. And it is precisely because of this increasing number of adherents that scientific research is now all the more urgent.

THE WORLD'S FIRST MICRODOSING STUDIES

Since finally succeeding in carrying out the first brain imaging study with LSD in 2016, I have been wanting to extend our LSD research to include the microdosing phenomenon. As part of the Beckley/Imperial Research Programme, we are developing a protocol to investigate the physiological and psychological effects of repeated microdosing, with a particular focus on cognitive functions, creativity, and mood.

We will give four dozen participants eight treatments over a period of four weeks: twice-weekly microdoses of LSD or a placebo. As well as measuring microdose-induced changes in brain activity using EEG, we will assess the claims made by the microdosing community via the use of subjective reports, questionnaires, and tasks. Particular focus will be given to mood enhancement, cognitive flexibility, creativity, and both emotional and intellectual insight (such as the ability to resolve long-standing emotional or work-related problems).

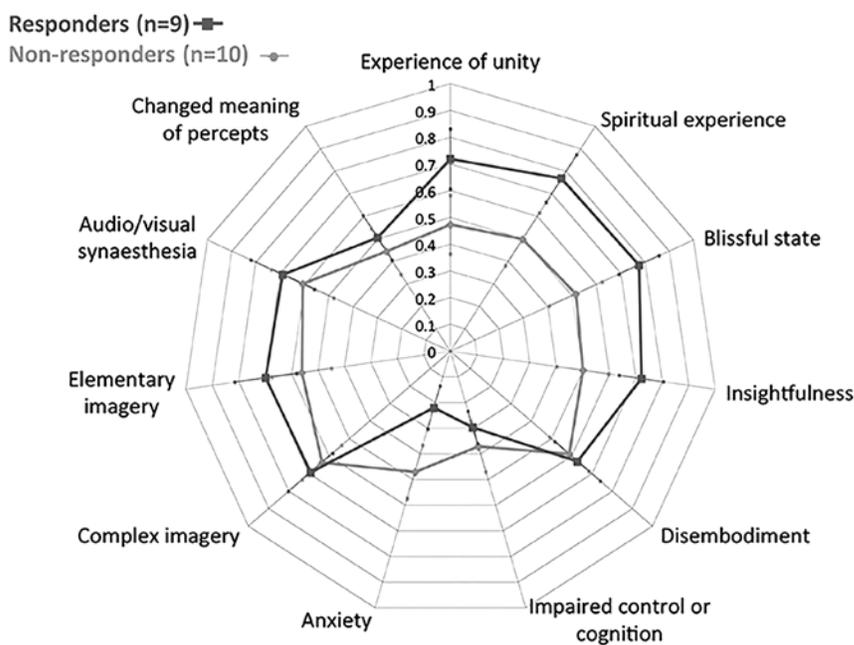
Many of the advocates of LSD microdosing—especially those working in artistic and technological fields—are most attracted by its positive impact on creativity and insight. But capturing a moment of insight, rather than relying on self-reported judgments, presents a considerable challenge. In facing this challenge, I was inspired by my personal experience as a Go player, which I was passionate about in the 1960s and 1970s. To win at Go, players must spot opportunities and weaknesses emerging in the constantly changing pattern of black and white stones on the board. Rather than relying on well-known sequences, or planning multiple moves ahead, top players intuit their way through the game, fusing logical thinking and creativity. For these reasons, Go allows us to measure intuition and the sense of insight—that Aha! moment of sudden clarity—in a new way.

On each microdosing day, alongside subjective reports, questionnaires, and formal tasks, participants will play a computerized Go game, to investigate creativity and intuitive thinking. As Go uses a well-established ranking system, a Go-playing AI is able to measure its human opponent's ability, and hopefully give us a simple outcome measure of how good their Go playing is.

THE BECKLEY FOUNDATION LSD RESEARCH PROGRAMME

I founded the Beckley Foundation 20 years ago, with the aim of researching the underlying mechanisms and potential beneficial applications of psychedelics for the improvement of the health, happiness, and well-being of humanity. This necessitated a focus on global drug policy reform to help overcome the deeply ingrained taboo on psychoactive compounds. It's been a long and hard struggle, but the gates are finally opening and we are now witnessing a renaissance in psychedelic science. Eminent academic institutions such as Imperial College London, Johns Hopkins, and NYU are beginning to demonstrate the incredible potential of psychedelic-assisted psychotherapy to treat mental illness.

The collaboration I set up with David Nutt and Imperial College in 2009 has provided invaluable insights into the mechanisms of action of LSD and other psychedelics such as psilocybin. Our results revealed how these compounds reduce neural activity within the brain's "Default Mode Network"—where overactivity has been linked to the rumination and repetitive negative thinking characteristic of depression and addiction—as well as a dramatic increase in connectivity between brain regions that do not normally communicate with each other. Might this point towards an explanation of why microdosing is



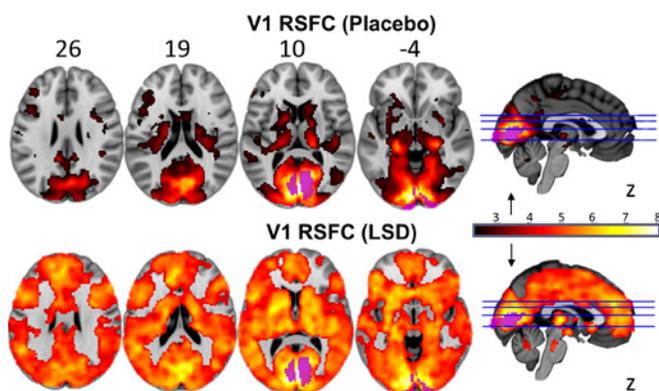
The Mystical Experience Web by Leor Roseman.

said to heighten creativity and improve mood? It is too early to say for certain, but it warrants further investigation.

Our research has also demonstrated that the quality of the acute psychedelic experience plays a key role in the healing process. We found a strong link between the experience of "ego dissolution," or "mystical" quality of an LSD trip, and its efficacy

as a treatment for mental disorders. With a typical therapeutic dose, participants recount a “mystical” or “ineffable” experience, although some researchers prefer the deliberately secular term “peak experience” to describe the phenomenon within a scientific context.

While some people recognise these out-of-the-ordinary experiences—the dissolution of the sense of self, a sense of oneness with the universe—as crucial to their development and healing, it is precisely because of them that many are uneasy about engaging with LSD as a treatment. However, microdosing does not involve any ego-dissolving mystical-type experience, and yet anecdotal reports of its benefits on depression abound.



The Beckley Foundation's brain imaging study showed that LSD increases the connectivity between the human visual cortex and the rest of the brain.

The ability of LSD to provide an antidepressant effect, without the mystical, classically psychedelic component, suggests that there is much more to be understood about its mechanisms of action. Moreover, it may be the ideal way to rehabilitate the compound in the eyes of society at large: A pill that enhances energy, vitality, creativity, and mood, while allowing the user to retain full control of their focus and behaviour, could be a welcome addition to our current pharmacopeia in the midst of a rising tide of mental health disorders.

With this in mind, I set myself the task of developing a multi-armed international research programme that will thoroughly investigate the therapeutic potential of LSD, both at the microdosing level and with the higher doses typically used in therapeutic settings.

The Beckley LSD Research Programme will comprise several arms of complementary research carried out at different centres around the world. Within this programme we will investigate:

- 1) How LSD-assisted psychotherapy might help overcome treatment-resistant conditions, based on an excessively rigid and overactive default mode network, such as addiction, depression, OCD, and PTSD.

- 2) The effects of different doses of LSD (from 10mcg to 250mcg) on cerebral circulation, brain activity and connectivity; as well as on mood, cognitive functions, and creativity.

- 3) How repeated microdoses of LSD may differ from a single, higher dose, in producing prolonged effects on mood, cognitive functions, creativity, wellbeing, and associated changes in brain function.

- 4) The physiological effects of LSD in vitro on neural cells and cerebral organoids (“small brains” grown in the lab), with a particular focus on inflammation, neuroplasticity, and neurogenesis.

The programme will assess LSD's dose-response curve—a gold standard for measuring the effect of any drug treatment—using well-validated psychometric and pharmacological tools. Both full doses and microdoses seem promising prospects for treating a wide range of conditions. But we don't know, for example, if the subjective and cognitive effects of a full dose are just higher-intensity versions of a microdose, or if they are fundamentally different. By undertaking dose-response studies, we will help determine which doses are likely to produce the best results for different conditions and therapies. We will also yield important answers about the efficacy, safety, and tolerability of LSD.

In collaboration with leading scientists and universities in the US, the Netherlands, Brazil, and the UK, I am developing studies which will build a more complete picture of the potential of LSD. This will hopefully, not only increase our ability to heal sickness, but also enhance our understanding of consciousness itself, an aim which motivated my passion for this research 50 years ago.

As our research develops, it is my hope that Albert Hofmann's “problem child” will be rightfully rescheduled, and in time, become a licensed medicine and authorised therapeutic tool, ensuring wide access to its health-giving properties. 🌐

Amanda Feilding is the Founder and Director of the Beckley Foundation. Amanda established the foundation in 1998 to further research into the therapeutic and transformative potential of psychoactive substances forbidden by prohibitionist policies, and has since been called the “hidden hand behind the renaissance of psychedelic science and drug policy reform.” Through the Scientific Programme, Amanda orchestrates collaborations with leading scientists worldwide, investigating cannabis, psilocybin, LSD, Ayahuasca, DMT and MDMA. These include clinical trials identifying the effects of psychoactive substances on cerebral circulation, brain function, subjective experience, and clinical symptoms. She co-directs the thriving Beckley/Imperial Research Programme with Prof David Nutt. She can be reached at amanda@beckleyfoundation.org.