

BECKLEY FOUNDATION

RESEARCH ON PSYCHEDELICS



“We have reached a tipping point. Society is finally opening up to a new understanding of psychedelics, and their transformational and healing potential.”

Amanda Feilding, Director, The Beckley Foundation

Psychedelics have been used throughout history for many social and spiritual purposes. Experts suggest that the relationship of humankind with these substances started with the beginning of human civilisation. Some of these ancient practices still survive into modern culture.

From the 1960s, the use of psychedelics leaped into the public sphere in the Americas, Europe, and elsewhere when it became associated to the 'hippie' counter-culture. However, a less visible phenomenon started two decades before this: From the mid-40s, a wave of scientific studies had started investigating these compounds and their effects on the mind. While the scientific rigour in some of these studies was sometimes questioned, it quickly became evident that psychedelic agents had the potential to inform our understanding of the psyche and contribute to the treatment of mental health conditions.

Scientific progress came to an abrupt halt in the 1970s: Psychedelics came to be perceived as a threat to governments and society, leading to an outright ban that was as strict as it was irrational.

In recent years, this paradigm of censorship has started to crumble, instigated by the work of organisations such as the Beckley Foundation. Since the mid 60s, a driving force of the Beckley's founder, Amanda Feilding, had been to discover what changes in cerebral circulation and brain function underlie different states of consciousness. To this end, she developed collaborations with leading scientists around the world, and began conducting groundbreaking academic research on psychedelics, their mechanisms of action, and their therapeutic and medicinal potential.

Pioneering scientific studies

Through the *Beckley/Imperial Psychedelic Research Programme*

In 2005, Amanda Feilding approached Professor David Nutt - at the time still at the University of Bristol - with the suggestion that they set up a collaborative partnership to investigate the effects of LSD and psilocybin on the brain. However, due to regulatory obstacles, their first project focused on cannabis. In 2009, when Prof. Nutt was appointed Head of Neuropsychopharmacology at Imperial College London, the research programme took its present form. Amanda and Prof. Nutt co-direct the research programme, and Dr. Robin Carhart-Harris, having completed his PhD under Prof. Nutt, became its Lead Investigator.

Psilocybin - A Series of Studies

[Brain activity & Psilocybin \(2011 - 2015\)](#) ^{1 2 3 4 5 6 7 8}

This groundbreaking series of studies explored how psilocybin works in the brain to produce its characteristic effects. After assessing tolerability and dosage in a pilot study, a brain-imaging study using fMRI and MEG investigated the neural underpinnings of the subjective experience, allowing for the observation of the transition from a *normal* state of consciousness to an *altered/psychedelic* state of consciousness.

This groundbreaking work has shed light on fundamental questions: How can the profound changes in consciousness produced by psychedelics be explained from a neurobiological perspective? Which brain networks are most affected under the influence of psilocybin? What is unique about the way the brain reacts to classic psychedelic drugs? How does this advance our understanding of consciousness and show the way to new treatments?

The results of the study became the most downloaded scientific report in Imperial College's history. The study achieved world-wide publicity when it was published in the prestigious journal *Proceedings of the National Academy of Sciences* in 2012.

Psilocybin & Depression (ongoing) ⁹

Because of insights arising from our research, in particular about the *Default Mode Network*, the Programme received a substantial grant from the Medical Research Council to study the effects of psilocybin in the treatment of depression. Specifically, our fMRI investigations demonstrated that psilocybin reduces blood flow to the default mode network (DMN) — a network that is over-active in patients suffering from chronic depression. Moreover, under the effects of psilocybin, participants were able to recall positive memories from their lives more vividly, partly due to activation of visual and sensory areas in the brain. Therefore, we hypothesised that psilocybin could be a useful aid to psychotherapy for depression. This study is currently in the pilot stage, with experiments initiated in May 2015.

Theoretical implications of psilocybin research (2014) ¹⁰

The knowledge gained from studying neural structure and function under psychedelic drugs is invaluable for building models of the brain in health and disease. By measuring brain function under the influence of psilocybin, we have demonstrated the utility of psilocybin as a model of early psychosis and introduced a fascinating new theory of conscious states.

LSD Series of Studies

LSD & Suggestibility (2014) ¹¹

This study tested the suggestibility-enhancing effects of LSD in a modern placebo-controlled study. It concluded that LSD does indeed enhance suggestibility, thus supporting its use as an adjunct to psychotherapy, where suggestibility plays a major role. The results also imply that individuals with high levels of conscientiousness are especially sensitive to this effect, perhaps because the drug allows them to relinquish their controlling tendencies.

LSD & Emotional response to music (2015) ¹²

This study demonstrated that the emotional effects of music are intensified by LSD, which can have implications for its use in psychotherapy, where emotional engagement is necessary. Neural correlates of this phenomenon are now being investigated using fMRI.

LSD & Brain activity - World's first neuroimaging study of the brain on LSD (ongoing)

This study investigates the effects of LSD on cerebral circulation and brain activity (ASL, fMRI, MEG), and also explores the substance's effects on cognition and imagination. This is a truly exciting project and the results could be tide-turning, paving the way for greater acceptance of the therapeutic applications of psychedelics as well as shedding new light on consciousness itself. We will start releasing the results by the end of this year. This study has been partly funded by the Medical Research Council and partly through a highly successful crowdfunding campaign carried out in collaboration with Walacea.

LSD & Creativity (ongoing)

Associations between many artists' most creative work and their use of psychedelic substances have been made informally throughout history. This study will investigate the subjective effects of LSD on an individual's creativity, and address the neurobiological

underpinnings of these effects. In doing so, we hope to achieve a deeper understanding of creativity, which remains one of the least-understood aspects of brain function and is an attribute that makes us uniquely human. The inclusion of creativity as a measure has been made possible by the runaway success of our crowdfunding campaign, which achieved more than double its initial goal.

With Johns Hopkins University (Baltimore, USA)

Psilocybin

Psilocybin-assisted psychotherapy & intractable nicotine dependence (ongoing)¹³

The pilot study preceding this research led to an unprecedented success rate of 80% abstinence after six months. This is unique, and has led to the forthcoming expanded study, which will include a brain-imaging module. Data collection started in March 2015.

With Sant Pau Hospital (Barcelona, Spain)

Ayahwasca / DMT

Determination of the molecular sites of action of ayahuasca

This study seeks to determine where in the brain ayahuasca acts, thus continuing our systematic investigation of psychedelics and the brain. Most psychedelics have been found to target the serotonin system, but some effects may arise from interactions with other neurotransmitter systems. This research is ongoing, and the first publications forthcoming.

Using brain imaging to investigate glutamate involvement in the effects of DMT

The hypothesis for this study is that glutamate release contributes to the psychedelic experience and that long-term users of psychedelic agents benefit from the effects of glutamate via structural changes in the brain.

Examining long-term structural changes with ayahuasca use: A longitudinal study

In an earlier study¹⁴, we observed increased grey matter thickness in certain brain regions. Now, some four years later, we are about to investigate whether there are further changes in participants who continued to use ayahuasca. We expect to find neuropsychological benefits and durable changes in brain structure, along with greater self-transcendence.

Collaborative Work in Development

LSD-assisted psychotherapy in the treatment of alcohol dependence (Michael Bogenschutz)

Exploring the healing properties of ayahuasca (ICEERS / Temple of the Way of Light)

Other publications

LSD My Problem Child & Insights and Outlooks (2013)

Written by Albert Hofmann. Translated by Jonathan Ott. Edited by Amanda Feilding.

The book gives a new and definitive translation of Albert Hofmann's autobiography, *LSD: My Problem Child* together with a collection of essays: *Insights/Outlooks*. In it, Hofmann discusses his earlier life and the path that led him to discovering LSD, a drug which had a profound effect on culture and on how science viewed the mind.

The Pharmacology of LSD, A Critical Review (2010)

Written by Annelie Hintzen and Torsten Passie

This book represents the first ever comprehensive review of the pharmacological effects of LSD. It draws on data from more than 3000 experimental and clinical studies. LSD has an extraordinary reputation due to the special effects on human consciousness, which makes it a valuable research tool, therapeutic agent, and catalyst for individual and social change.

Hofmann's Elixir: LSD and the New Eleusis (2010)

Written by Albert Hoffmann et al. Edited by Amanda Fielding

This unique volume collects, for the first time, Hofmann's more recent essays and lectures, and works by contemporary authors. They present a comprehensive overview of Hofmann's relationship to his controversial creation and reveal his profound mystical outlook.

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