



## BECKLEY FOUNDATION

### OPENING THE DOORS TO PSYCHEDELIC MEDICINE by Amanda Feilding

A PSYCHEDELIC CONVERSATION:  
TACKLING THE TABOO BY CAMBRAIN  
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I think we have reached a very exciting tipping point in the study of psychedelics.

After decades, in which research was stifled by repressive drug laws and stigma, we are finally seeing the doors reopen, and a new interest in the possibilities of what psychedelics can offer both science and society, emerge.

Psychedelics are a key to unlock a deeper level of the psyche. They can transform the individual in ways that modern science is only just beginning to understand. Their latent potential lies in their ability to profoundly alter consciousness and to evoke a rich subjective experience. It is the special quality of this alteration that underlies their wide-ranging utility, including as a set of tools with which to better understand consciousness itself. Most significantly, as demonstrated by an increasing number of scientific studies, psychedelics are on track to create a *new psychiatry* – not only in how we treat, but also in how we understand, psychological disorders.

Importantly, it is not merely a small subset of illnesses that psychedelics have the potential to treat effectively. But rather, psychedelics may be conceived as *non-specific medicines* for a wide range of mental disorders.

In the 50s and 60s, LSD's value as a therapeutic tool was widely acknowledged. It was used in clinics around the world to support psychotherapy and, with over 3,000 clinical trials, it was possibly the most widely researched psychoactive substance of all time. But as LSD escaped from the clinics into recreational use, it became demonised and eventually outlawed. LSD's close association with the rebellious youth culture of the 1960s, and with opposition in the USA to the draft and the Vietnam War, gave the US government compelling motives to ban it. LSD came to be seen as purely harmful, a corrupting influence with no known medical benefits. It has taken until now to rediscover what many psychologists took for granted 50 years ago: that psychedelics have profound therapeutic value that we cannot afford to ignore any longer.

It is now 50 years since I first realized what amazing tools psychedelics can be. In 1965 I was introduced to LSD, and most importantly, in 1966 I met, and starting working with a Dutch scientist, Bart Huges, from whom I learnt two important hypotheses: **one** that changes in blood-

supply to the capillaries of the brain underlie altered states of consciousness; and **two**, that the ego is a conditioned-reflex mechanism that controls the distribution of blood in the brain.

I determined to explore these ideas scientifically. However, I had no choice but to watch as every avenue of psychedelic research was closed off by the War on Drugs, a policy which claimed to have the best interests of the population at heart, but which in fact robbed suffering patients and the psychiatric community of a powerful range of treatments.

My determination to reveal the nature of the psychedelic state led me to set up the Beckley Foundation in 1998, which had a dual purpose: to reform global drug policy so that it is based on scientific evidence; and to undertake scientific research into altered states of consciousness, particularly those brought about by psychoactive substances. I realized that only with the best science could one overcome the taboo on the real value of psychedelics.

For many years, I found myself caught in a Catch-22: policy reform was impossible without scientific evidence to support it, and scientific research was impossible without policy reform. But now, after nearly two decades of slow advance on both fronts, the tide has turned, and Catch-22 has been replaced with a positive feedback loop, where ground-breaking research will hopefully lead to policy reform, a widening of research, and the availability of psychedelic-assisted psychotherapy.

In my 18 years as director of the Beckley Foundation, I have established collaborative programmes with scientists & universities around the world, and have finally been able to answer some of my questions about the nature of consciousness, and how best to use these mysterious compounds to help heal some of modern man's most intractable ills.

It is highly probable that our ancestors made use of psychoactive plants since the beginning of human culture. Look at the cave paintings of Chauvet (roughly 40,000 years old); of Tassili (12,000 years ago); and all the other high points of our cultural history, from Chatal Hüyük (8,000 years ago) to Egypt and India, from Crete and Eleusis to the Amazon and Mesoamerica.

Last year, the Beckley/Imperial Research Programme, which I set up with Dave Nutt in 2005, conducted the world's first LSD brain-imaging study. The study has generated many fascinating findings, and fulfilled my promise to Albert Hofmann to reintegrate his *problem-child* into the scientific world. One of its discoveries is that LSD causes a *dis-integration* within the Default Mode Network while simultaneously generating *increased connectivity between* brain networks.

Higher-order cognitive processes result from the brain's ability to function as an assemblage of neural networks, which work together to *constrain* consciousness, so that we may navigate the world using predictions from our past experience. These networks integrate information from multiple, anatomically-distinct regions in the brain, to construct a cohesive, unified conscious experience.

The Default Mode Network is particularly important in regulating our conscious experience – it censors what enters consciousness, and what does not - like the conductor in an orchestra. It is a network of brain regions, each of which are involved in presenting various aspects of selfhood: autobiographical memories, awareness of social status and long term planning for example. Through fMRI it has been established that these regions communicate with each other most commonly when the mind is awake but at rest, and not focused on more specific tasks. It is the integrity of this network that enables us to think about ourselves – to self-reflect, to remember the past and to plan the future. The similarities between the DMN and the Freudian ego are compelling, and just like in the 50s, we are gaining new insights into how it operates by using psychedelics. However, *today* we have the added advantage of also having brain imaging technology – the combination of which is a game changer.

Normal functioning of the *Default Mode Network* affords a relative stability to this sense of self. However, an *over-active* DMN can result in maladaptive thought patterns, ruminations and compulsive behaviours, that become over-dominant and entrenched, and seemingly inescapable. These can manifest as a sense of hopelessness for personal change, contributing to the development of psychological ailments, such as depression and addiction.

A common underlying mechanism of many mental illnesses, is *abnormal hyperactivity* and *rigidity* in the *Default Mode Network*.

In the past decade, through our research with the Beckley/Imperial Research Programme, we have found that psilocybin both decreased the blood supply to the posterior cingulate cortex – a key integrative hub of the DMN - and also significantly *decreased* the *functional connectivity* between the *medial pre-frontal cortex* and the *posterior cingulate cortex*, thereby diminishing the integrity of the network, and the feed-back of *negative* chatter between these two hubs, that forms the basis of the neurotic problem, whether it be “I’m so depressed”, or “I want another drink.”

Importantly, our studies have also shown that *decreased* connectivity between the key regions of the DMN correlate with the phenomenon known as “ego-dissolution”, or the loss of ego identity. Since the default-mode network can be regarded as the neural correlate of the ego or self, *decreasing the integrity of this network* allows us to view ourselves from outside the normal confines of our everyday waking consciousness, and enables us to *reset* the rigid thought patterns that form the basis of many mental health problems.

In addition to the disruption of connectivity in the DMN, our research shows that the acute psychedelic state is characterized, **by a great increase in communication between the different networks of the brain**. Connections appear, or are strengthened, between regions that don’t normally communicate with each other. This leads to a looser style of cognition, more prone to making new associations, which can facilitate spontaneous self-insight, fresh perspectives and creativity.

This cognitive flexibility has also been demonstrated to persist *following* the psychedelic experience, and personality traits such as an increase in openness, or an ability and willingness to change one’s mind are witnessed. The effects therefore are not limited to the acute psychedelic experience, but can lead to lasting changes that can transform patterns of thought and behaviour in the long term.

These findings present a breakthrough in our understanding of mental illness and how we might be able to improve the treatment of a variety of disorders, such as addiction, depression, obsessive compulsive disorder, and post-traumatic stress disorder, that blight the lives of millions of people worldwide.

In addition to the *Beckley/Imperial study with LSD* and human subjects, a **second** study also published last year and led by Robin Carhart-Harris, investigated the use of psilocybin in overcoming **treatment-resistant depression**. This study had the remarkable success rate of 67% of subjects attaining *remission* after the **first** week of treatment with psilocybin, and 43% remaining depression-free after 3 months. These are exceptionally positive results. Leor Roseman will tell you more about it in a moment.

The success of this study reinforced the success of the Beckley-sponsored *Johns Hopkins* study starting in 2008, which investigated the efficacy of overcoming treatment-resistant nicotine-

addiction with psilocybin-aided psychotherapy. This pilot study had an amazing 80% success-rate at 6 months, and has now led to an expanded study.

These and other studies show the great promise of psychedelics in both healing illness, increasing well-being, and evoking transformational experiences for the individual. The mechanisms behind their therapeutic and transformational potential are beginning to be uncovered by our research.

There are many aspects of the effects of psychedelics that we are researching within the *Beckley Scientific Programme*, such as the interaction with music, the enhancements of mindfulness abilities, the importance of mystical experiences, or understanding the mechanisms behind visual hallucination. We are also looking at the potential of psychedelics to generate new brain cells. However, the effects of psychedelics on the *Default Mode Network* are of special interest to me, as this network is the neural correlate of what I worked on with Bart Huges in the 1960's when we called it the 'mechanism of the ego'.

As this new era of psychedelic research progresses, it will be essential to understand the minutiae of the physiological and neuronal changes underlying the psychedelic state. It is also imperative that we create the political environment where clinics are available which provide psychedelic-assisted psychotherapy to those in need. I have long wished to gain greater understanding of the flexibility of consciousness gifted by psychedelics, and how less integrated, more interconnected networks subserve this fluid, more chaotic conscious state that has the potential to alleviate psychological distress, enhance human creativity and innovation, and ultimately improve the self-awareness and survival-potential of our species.