



THE BECKLEY FOUNDATION PSYCHEDELIC SCIENCE SEMINAR 2015
PRESENTING
THE BECKLEY/IMPERIAL RESEARCH PROGRAMME'S
FIRST LSD BRAIN IMAGING STUDY
(SUPPORTED BY WALACEA CROWDFUNDING)

16TH SEPTEMBER 2015 - JEFFERY HALL, INSTITUTE OF EDUCATION, UCL

Thank you all for coming, and most importantly thank you for helping to fund the first-ever brain-imaging study using LSD. I'm Amanda Feilding, co-director with Prof Dave Nutt of the *Beckley / Imperial Psychedelic Research Programme*, which we started in 2009. Also here is Robin Carhart-Harris, the lead investigator, and Mendel Kaelen. Thanks also to Walacea for organising the crowdfunding project, which successfully achieved its target goal within 48 hours. In total, there were over 1,600 pledges from 46 countries. The response shows the enormous interest that LSD ignites in the general public.

Crowdfunding is a great and exciting new democratic way of raising money – a positive outcome of our globally interconnected world – it enables important projects to take place - projects which the authorities and their funding bodies are unwilling to support because the *topic is too taboo*.

It is an amazing indictment of modern society that these incredibly important substances, that have played such a vital role in the cultural evolution of *Homo Sapiens* – aiding our development of language, spirituality, music, art and medicine – *became* Taboo. They have always been at the core of society – shrouded in mystery – but it is interesting how they became toxic in the mind of society – moving from being known as the food of the gods and the vine of the soul – to substances of damnation and criminalisation.

After the discovery of LSD by Albert Hofmann in 1943, there was a burst of excitement in the medical and therapeutic worlds – over 3000 experimental and clinical studies were undertaken. Then in the early 60s LSD escaped from the labs and the clinics and began to spread into the world at large. Fuelled by its energy and transformational insights, a cultural evolution took place whose effects are still felt today. It sparked a wave of interest in Eastern Mysticism, healthy living, nurturing the environment, individual freedoms, and new music and art, among many other changes.

The establishment panicked, and turned to prohibition, partly motivated by American youth becoming disenchanted with fighting a war in far off Vietnam. The UN, which has always been controlled by the United States, created the Drug Conventions of 1961, 71, and 88. First the Conventions banned the plant based psychoactives, which had been used for millennia, namely cannabis, opium and coca, and then prohibition was extended to the banning of chemical compounds, other, of course, than those accepted by governments. The restrictions resulted in compounds, such as non-toxic LSD, being more strictly controlled than nuclear weapons. All research ended. Although in theory, scientific and medical research was allowed by the conventions, in fact, the obstructions were so great, it became impossible: there was no funding, and no institution or scientist wanted to be contaminated by finding positive results, which would damage their reputations and careers.

Almost every country in the world signed the UN Conventions controlling drugs and, amazingly, although our knowledge has advanced enormously, the Conventions have remained like sacred text, unchanged for the last 50 years – even though they were originally founded on prejudice and vested interest, *not* on scientific evidence. They ignored the fact that people *like* to alter their consciousness, and have done so from the beginning of human history. No amount of prohibition can ever block a market where there is a demand. There will always be a way around, and this has fuelled an illegal market, which has blossomed into a great cancer, causing devastating violence, corruption, and suffering worldwide.

Psychoactive substances have, and can, be used for spiritual purposes and healing, for better understanding of the 'self', and greater perception of beauty, music, compassion, and openness. They can, when properly used, bring out the nobler qualities of man, and help heal our sicknesses of body and mind, and increase creativity and compassion. In my view, gaining a greater understanding of consciousness is one of the most interesting endeavours in the world.

I would now like to say a few words about myself and why I – and indeed we all – are here today. I was fortunate enough to be introduced to LSD in 1965, while it was still legal. I was amazed at its potential to expand and deepen perception and a sense of union. I had grown up with a passionate interest in the mystics and comparative religion, and the *experience* brought about by LSD gave substance to the words. In 1966 I met, and started working with a Dutch scientist, Bart Huges, who had a new hypothesis about the mechanisms underlying changing states of consciousness, and the mechanism of 'the ego'. It was based on a new understanding of changes in blood supply, and neural functioning... for me it was an amazing revelation, which enabled me to *use* LSD as a tool to enhance my life, both in enjoyment and creativity. I decided to devote my life to understanding more about the brain, and how one can enhance its functioning – and to research and communicate this knowledge.

In the 1990s, the art of brain imaging began to develop, creating a tool with which one could see *into* the brain, and test hypotheses about its function. Thus in 1998 I set up the Beckley Foundation, with two main aims: First, to investigate consciousness and the physiology underlying its changing states, and secondly, to reform global drug policies, so that they are based on scientific evidence. The two programmes are intimately interrelated, as reform of

policy enables scientific research to take place, and the results from the research inform future policy. It has been a long and difficult struggle, but now finally, after 17 years, the tide has turned. Buds of interest are sprouting in both the science of psychedelics, and new policy options.

Over the years I have started many programmes of collaboration around the world. My partnership with Dave Nutt has been particularly rewarding. It began in 2005 when I approached Dave and encouraged him that we set up a collaborative partnership to research psychedelics. I knew a lot about psychedelics, and he was a leading neuropsychopharmacologist with access to brain imaging – we both had passion, and it made a productive partnership. About the same time, Robin visited me asking for suggestions about potential PhD advisors. As he mentioned his interest in both Freud and LSD, two of my favourite subjects, I sent him to Dave, and after completing his PhD he proved an excellent lead researcher. Dave and I had started with cannabis, and when he moved to Imperial, we launched our psychedelic research. My main interest had always been to research LSD, but it is much easier to gain approvals for psilocybin, as no one recognises the word!

Our first study proved amazingly interesting, as it threw new light on the mechanisms underlying consciousness. One of the main findings was, surprisingly, that the degree of the *reduction* in the blood supply to the important brain network called the Default Mode Network correlated with the degree of ‘ego dissolution’ reported during the psilocybin experience. The Default Mode Network is a system of highly interconnected brain regions, which plays an extremely important function as a top-down control mechanism, censoring and coordinating the activity of other brain areas, rather like the conductor in an orchestra. It thus plays a vital role in what enters consciousness and what doesn’t, and in the maintenance of a stable sense of self. By reducing its function all the other networks can communicate with each other more freely. The Default Mode Network is the neuroscientific term for what Freud called the ‘ego’. The research also validated the early hypothesis that had so excited me... about the ‘ego’ being the mechanism in control of the blood supply within the brain.

In 2013, the Beckley / Imperial Programme conducted a similar study investigating MDMA, and in 2014, we finally embarked on the first-ever brain imaging study with LSD – the research that we are celebrating here today. Building on the knowledge gained through the psilocybin studies, our research with LSD has extended our understanding of the mechanisms behind consciousness and its altered states. The most important findings have shown that LSD decreases *integrity within* brain networks, including the default mode network, and *increases* connectivity – or coupling – *between* normally segregated brain networks – this correlates with a more anarchical and fluid sense of consciousness, and ego-dissolution. In addition, we have discovered some of the brain mechanisms underlying visual hallucinations, which are brought about by changes in activity and connectivity between visual, and other centres of the brain. Also, we have shown that LSD increases suggestibility and emotional responses to music by increasing connectivity between brain regions, such as vision and memory hubs. This, in turn, has important implications for facilitating psychedelic-assisted psychotherapy.

What we have done so far, is *open* the door. However, there is an immense wealth of knowledge to continue mining. Two future studies I hope we can do soon include: 1) investigating the propensity of LSD to increase creativity. And 2) To compare the effects, and underlying mechanisms, of DMT (the main psychoactive ingredient of ayahuasca) with psilocybin and LSD – thereby getting a better idea of their similarities and differences, and throwing light on the experience of ‘entities.’

Apart from just the pleasure of increasing our understanding of consciousness, and upholding the Delphic maxim to ‘know thyself’- gaining greater understanding paves the way to new treatments for many of man’s most intractable illnesses. By loosening the controlling, repressive grip of the ego, or Default Mode Network as it is now called, through a psychedelic substance, one can more easily: 1) reach and wash out buried trauma, as is essential in treating post-traumatic stress disorder. 2) re-set rigid, fixed patterns of behaviour, such as in depression or obsessive-compulsive disorder; 3) release chronic constriction, and hyperactivity such as in cluster headaches; or 4) ignite a creative approach to problem solving, by enabling the different brain networks to communicate with each other more freely, thereby facilitating new associations... those ‘Ah-ha’ moments we so value.

So far, our findings have resulted in more than 15 publications in high-impact scientific journals. This includes our pioneering work with MDMA, where we showed that after taking MDMA, the recollection of *happy* memories was rated more vivid, emotional, and positive than with placebo, whereas recalling *bad* memories, was a less negative experience. Our work has shown why psychedelics can be an aid in therapy by lowering defence mechanisms, so that a person can more easily reach the trauma at the centre of the problem and clear it out.

At the moment we are just completing a pilot study of treating depression with psilocybin, a study funded by the Medical Research Council which grew out of our original psilocybin study. The initial findings are very positive. The Beckley / Imperial brain imaging studies are an invaluable complement to clinical trials, providing a neurobiological explanation of how and why psychedelics work in a therapeutic setting.

The psychedelics have amazing applications both in the healing of illness and in the betterment of well-being. I have met many people who have expressed that the *greatest* things they have done in their lives would have never happened without their psychedelic experiences. We need to explore and discover how these substances work in the human brain, so we can use them as the useful tools that they are. Thank you.