

A brave new world for psychology?

David Nutt introduces a special issue considering the use of hallucinogens in research and therapy

The psychedelic state is unquestionably one of the most interesting psychological experiences humans can have. Hallucinogenic drugs that have been used by humans for as long as we can determine to provide novel insights into the mind and enhance social bonding. For moral reasons, hidden behind spurious concerns about health harms, modern society has attempted to deny the value and importance of the use of these drugs and the study of this altered state of consciousness. This article explains why this scientific censorship has occurred and outlines the lost opportunities for neuroscience research and medicinal treatments that have resulted.

Psychedelics, used responsibly and with proper caution, would be for psychiatry what the microscope is for biology or the telescope is for astronomy. These tools make it possible to study important processes that under normal circumstances are not available for direct observation.

Stanislav Grof (1975)

Last year I had the pleasure of visiting Chile and spending a few days in the Atacama Desert, in the high Andes. To deal with the altitude-induced headaches I used the local remedy of chewing coca-leaves and drinking mate (coca-leaf tea). Following the Spanish conquest these local remedies were banned by the Catholic Church as being heathen, though the ban was rapidly overturned by the Spanish overlords as it resulted in work productivity of the 'natives' declining! In 1961 the coca-leaf was again banned, despite there being no evidence of its being addictive or harmful, as part of the absurd 1961 UN Single Convention on Narcotic Drugs. For most Andean coca-leaf chewers the ban has had little impact, although in some places the coca-farmers have had their crops and livelihoods destroyed as part of the US-driven 'war on drugs'.

However, the original Andean inhabitants used drugs other than cocaine, as I discovered in a visit to the museum of the Atacama Desert. Of the many artefacts from the pre-Columbian period well over half were related to the use of hallucinogenic extracts of the peyote cactus. These comprised pestles

and mortars for grinding the flowers, pots for storing the flower buds, belt pouches for carrying the powder and ceramic straws for snorting it. Many were beautifully decorated, showing that they had symbolic as well as practical uses. Moreover, much of the art of the period seemed influenced by the visions produced under peyote.

There is extensive evidence that many, possibly all, earlier cultures used hallucinogens such as mescaline, ayahuasca and ibogaine – see Ben Sessa's book *The Psychedelic Renaissance*. They appeared to be used to gain personal insights and promote social bonding, and may also have had mood-promoting and resilience-inducing actions. The latter I suspect is why they were so widely used in the Andes, which is a particularly inhospitable and difficult environment in which to survive. Use of hallucinogens has survived to the present day in indigenous cultures and some churches, such as the Santo Daime church in Brazil (and now beyond) that uses ayahuasca in its church ceremonies, even in children. The use of ibogaine for self-enlightenment in West Africa has now developed worldwide and has become popular as an aid to overcoming addiction. Psilocybin as 'magic mushrooms' have been used in many cultures across much of the world, and are still taken by many young people in the UK despite attempts to ban them by making their possession illegal. The reasons for – and benefits of – this widespread social use of hallucinogens throughout human society is an important question for social psychology.

In contrast, 'Western' society has promoted other drugs, particularly alcohol, for social engagement, worship and pleasure. When hallucinogens, particularly the new longer-acting synthetic one LSD, began to enter popular culture in the early 1960s (the 'flower-power' movement) it was seen as a major threat to the current political order and so LSD plus all other hallucinogenic chemicals such as psilocybin and

questions

Are there any grounds on which a 50-year ban on research on a brain-active drug could be countenanced?

What insights might research into psychedelics and hallucinogens give to our understanding of the brain?

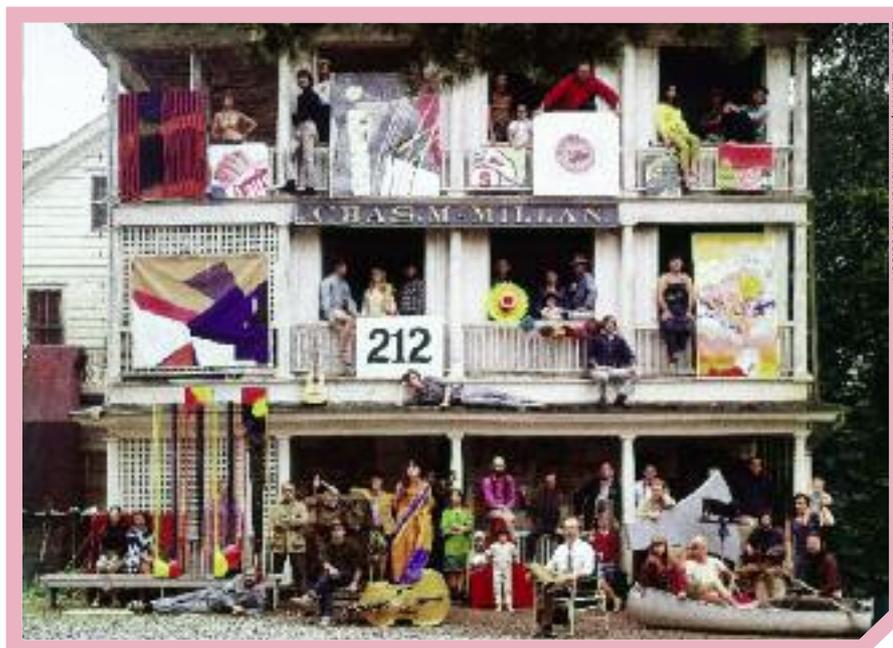
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Sessa, B. (2012). *The psychedelic renaissance: Re-assessing the role of psychedelic drugs in 21st century psychiatry and society*. London: Muswell Hill Press.

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When hallucinogens began to enter popular culture in the early 1960s it was seen as a major threat to the current political order

dimethyltryptamine (DMT) were rapidly banned in the USA and then under the UN drug conventions.

To me – and I speak here as a former Chair of the UK government's Advisory Council on the Misuse of Drugs – the justification for the banning was a concoction of lies about their health impacts coupled with a denial of their potential as research tools and treatments. Indeed their banning demonstrates the chilling power of drug regulators and enforcers to control the drug agenda, for the ban was enacted in the face of opposition from leading and open-minded politicians such as Bobby Kennedy (whose wife Ethel had undergone or was undergoing LSD therapy at the time at Hollywood Hospital). The discussion between him and them shows the challenge of getting to the truth.

Why if [clinical LSD projects] were worthwhile six months ago, why

aren't they worthwhile now? ... We keep going around and around... If I could get a flat answer about that I would be happy. Is there a misunderstanding about my question? I think perhaps we have lost sight of the fact that LSD can be very, very helpful in our society if used properly. (Kennedy, quoted in Lee & Shlain, 1985, p.93)

As is the case with almost all international drug-related legislation, the UK government slavishly followed the US lead and psychedelics were banned here in 1964. The reason for this strict control is to prevent the recreational use of these drugs, particularly by young people. The controls are supposedly designed to reduce their harms, although in the case of hallucinogens these harms are clearly less than those from most other drugs, including legal ones such as alcohol (Nutt et al., 2010). This decision has efficiently stopped research into these drugs to the detriment of researchers; worse still, many thousands of patients have been denied potential new medicines.

Almost all nations in the world are signatories to the UN conventions, so the ban on use is almost totally worldwide, with the only exceptions being made for *plants growing wild which contain psychotropic substances from among those in Schedule I and which are traditionally used by certain small, clearly determined groups in magical or religious rites* (1971 Convention Commentary Article 32:4).

Before these UN regulations were brought in, LSD had been widely studied with about 1000 studies involving 40,000 subjects (Masters & Houston, 1971). The pharmaceutical company that invented LSD, Sandoz, saw its huge potential for understanding the brain and as a possible avenue to new treatments, so they made it widely available to the worldwide scientific community. In the 50 years since its ban, there has been almost no new research despite remarkable advances in neuroscience technologies such as PET and fMRI that could allow a much greater understanding of its actions than were possible in the 1950s. The limited research now developing in this field has already revealed remarkable and unexpected insights into how these drugs produce hallucinations (see Carhart-Harris et al., in this issue). They also offer a possible new human model of psychosis against which to test new antipsychotic agents.

The clinical potential of hallucinogens was always seen as one of the most important advances. The founder of Alcoholics Anonymous reportedly became abstinent after an LSD experience in which he saw he could escape from the control alcohol had over him, and many others tried the same approach. A recent meta-analysis of the old clinical trials in which LSD was used to treat alcoholism (Krebs & Johansen, 2012) found that the effect size of LSD was as great as that of any other treatment for alcoholism developed since. This apparent clinical utility of LSD has been denied to millions of patients, and alcoholism is now the leading cause of disability for men in Europe (Wittchen et al., 2011).

Another of the original benefits of LSD, as a way to come to terms with dying, could offer a more humane and positive alternative to sedatives and opioids. The value of this approach has just resurfaced with the first LSD study in 50 years (Gasser et al., 2014) where it again was shown to reduce anxiety in those with terminal illness. This complements the approach of Charles Grob in this issue, using psilocybin for cancer anxiety.

Other Schedule 1 psychedelic drugs have similar potential for treatment uses. Ibogaine is licensed for the treatment of addiction in New Zealand. Psilocybin, obtained from 'magic mushrooms', is a shorter-acting version of LSD that has been shown to be a possible treatment for obsessive-compulsive disorder (Moreno et al., 2006) and cluster headaches (Sewell et al., 2006). Roland Griffiths' group in Johns Hopkins has shown that psilocybin given in a psychotherapy setting can

Sessa, B. (2012). *The psychedelic renaissance: Re-Assessing the role of psychedelic drugs in 21st century psychiatry and society*. London: Muswell Hill Press.

Wittchen, H.U., Jacobi, F., Rehm, J. et al. (2011). The size and burden of mental disorders and other disorders of the brain in Europe 2010. *European Neuropsychopharmacology*, 21(9), 655–679.

hallucinogens

produce very long-lived and profound improvements in mood and well-being (Griffiths et al., 2008).

That this small handful of studies represents all the clinical work in the last 50 years proves how destructive the banning of hallucinogens has been on treatment research. Regulators say that the UN conventions do not ban research – they just ensure that the drugs are subject to a level of control commensurate with their harmfulness and lack of clinical utility. Yet this Schedule 1 control is the highest level of security, meaning that hallucinogens are controlled to a level more extreme than that for heroin or cocaine, so belying the harm argument. The lack of clinical utility is self-fulfilling, since with virtually no research in this field clinical findings are not going to develop. Complying with the current regulations is very time-consuming and expensive. A Schedule 1 licence in the UK costs about £6000 in fees and other costs and takes a year to obtain. Obtaining the drugs is also difficult and expensive. We have been quoted more than £3000 per 2mg dose of psilocybin for an MRC-funded clinical trial on depression. Comparable compounds that are not controlled can be obtained for 1/100th of that price. Much of the expense is because there are almost no production facilities in the world that have the necessary licences for holding and dispensing Schedule 1 drugs.

I suspect that this ongoing dearth of research is tacitly encouraged by governments as it might challenge the status quo. Lack of new evidence also perpetuates the justification for severe controls on the grounds of the precautionary principle. Politicians have tried to stop our work on psilocybin on the grounds that it uses 'illegal drugs'. They have also attempted to disrupt our psilocybin depression trial by using Freedom of Information requests to our universities and the MRC.

An exploration of the mind

One of the founding fathers of American psychology, William James, used hallucinogens as part of his exploration of the mind. From his experiences he concluded:

Our normal waking consciousness is but one special type of consciousness. Whilst all about it, parted from it by the filmiest of screens, there lie potential forms of consciousness entirely different. No account of the universe in its totality can be final that leaves these disregarded. How to regard them is the question – for they

are so discontinuous with ordinary consciousness.

Despite the massive influence of William James on the development of the discipline of psychology his interest in studying consciousness using drugs (in his case nitrous oxide) to produce alterations in it has been largely ignored, probably because of social pressure and the complexity of doing such work. I would argue that these drugs are central to key areas of psychology research such as consciousness and mood regulation. How can one explore consciousness without perturbing it? What mediates the positive mood effects of psychedelics and how can we use them to assist in treatments?

Psychedelics offer a remarkable and safe way of producing fast and profound changes in key psychological processes. I would support James's desire to explore other forms of consciousness and assert that hallucinogenic drugs provide one way of mediating this research. One could in fact argue that understanding the psychedelic state is one of the great challenges for human psychology research.

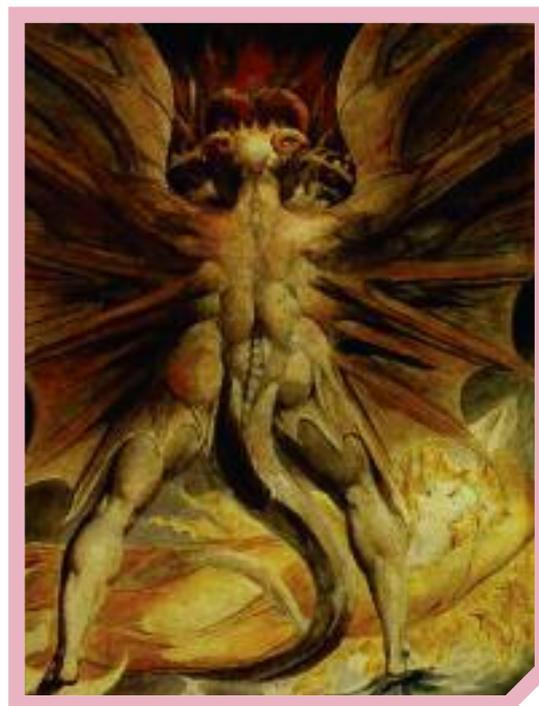
The other great insight into the value of these drugs comes from the author/scientist Aldous Huxley. His self-experimentation with various hallucinogens is well documented in his books, such as the *Doors of Perception*, its title reflecting the writings of the visionary artist William Blake:

If the doors of perception were cleansed everything would appear to man as it is, infinite. For man has closed himself up, till he sees all things thro' narrow chinks of his cavern. (William Blake, 1993)

The article by Carhart-Harris, Mendel Kaelen and myself in this issue outlines just how hallucinogens open up the chinks in the cavern of the brain. We provide direct support for the idea that the brain dictates what is perceived not what is there; the human brain can and does truly close itself up to many things, and psychedelics can open it again.

A way forward

The failure of the scientific community, particularly neuroscientists, to protest the denial of research on hallucinogens is one of the most disturbing failures of science leadership in the past century, and it must be rectified. Psychologists and other



WILLIAM BLAKE

'For man has closed himself up, till he sees all things thro' narrow chinks of his cavern'

neuroscientists must demand the right to study these drugs. Our professional organisations should demand the overturn of the UN Schedule 1 status for hallucinogens and in the meantime push for hospital and university research groups to be given exemption from the need to hold these licences. The need for this field to be opened up to psychologists is beautifully put by Aldous Huxley himself:

Great is truth, but still greater, from a practical point of view, is silence about truth. Facts do not cease to exist because they are ignored. By simply not mentioning certain subjects... totalitarian propagandists have influenced opinion much more effectively than they could have by the most eloquent denunciations.

We should value his insights not only because they derive from a broad knowledge of science and a deep understanding of his personal experience with hallucinogens, but also because he followed his beliefs to the end using LSD to ease his own death.



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