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THE HALLUCINOGENIC DRUGS

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'This is the tale of the Stone of Suleiman, but its meaning is in the mind of him who hears it'.—Charles Williams.

THE problem of addiction to the hallucinogenic drugs is one of misuse rather than of physical addiction. By misuse I mean the taking of hallucinogenic drugs (whether prescribed by a doctor or not) without medical supervision during the period of activity of the drug, which may be up to twenty-four hours. For the purpose of this article 'Hallucinogenic drug', according to the Poisons Regulations (Hallucinogenic Drugs) 1967, made under the Poisons Act 1962, means one of the following:—

Dimethyltryptamine
Lysergic acid diethylamide
Mescaline
Psilocybin and
Psilocin

Again for our present purpose I propose to discuss only lysergic acid diethylamide, or LSD, as it is probably the most potent of the group, is the most readily available and by far the commonest in use.

The properties of the hallucinogenic drugs and the use of LSD in psychotherapy were described in my article in *The Practitioner* in 1964, and need not be repeated in detail here. One need only say that LSD was first synthesized in 1938 and its hallucinogenic properties were discovered in 1943. Its use in psychotherapy dates from 1950 and several thousand patients have received the drug for a wide variety of psychiatric problems over the years with few complications, and treatment is still continuing in a number of centres.

ADVERSE REACTIONS TO LSD

In 1965 in a book entitled 'Drugs of Hallucination', Sidney Cohen drew attention to some possible dangers of LSD therapy. The numbers were not large, but the reports were serious: some patients had committed suicide, and psychosis, usually transient but rarely permanent, had been reported.

Somewhere about this time, or a year or two earlier, reports began to come in from the United States of America on the use of hallucinogens outside the field of psychotherapy: that is, outside medical control. A wave of enthusiasm spread over a country that was only too aware of a need for individuals to enlarge their mental experience and to break from the fetters of mass living and of the mass media. Subcultural groups, some led by psychologists, some formed among students, middle-class intellectuals or beat groups, formed in many areas, particularly along the West coast. The best known was the I.F.I.F. (The International Foundation for Internal

Freedom) which formed LSD-taking groups in many centres, combining some kind of religious observance with the group taking of LSD. The groups were anti-Establishment and in some ways anti-social but they had a rough culture of their own and even a telephone directory of those to whom one could talk during an LSD session. Such groups have been responsible for a new language which may be classified under the general heading of psychedelic experience.

It was only a question of time before LSD became the agent of a new subculture in this country. It is of considerable sociological interest that its use has been linked to the 'Hippie' movement, that group of non-aggressive young people whose language is that of the 'love-in', rather than to the aggressively competitive 'mods and rockers'.

According to *The Sunday Times* of January 1, 1967, four million Americans took LSD in 1966. Dr. Timothy Leary's followers are reported as saying that LSD is the mind's psychoscope, as important a discovery for psychiatrists as the microscope was for medicine. *Time*, on March 11, 1966, had reported:—

'Patients with post-LSD symptoms are providing the U.C.L.A. Neuropsychiatric Institute with 10 to 15 per cent. of its cases'.

On the other hand, Kräupl-Taylor (1966) reported as follows:—

'I must admit . . . that we (at the Maudsley Hospital) have seen little evidence of misuse of LSD which is so luridly written up in some of the press. I can recall no instance of patients admitted . . . for the after-effects of self-administered LSD and I think that the impression that it is readily procurable is exaggerated'.

Bewley (1967) warned that the illicit use of LSD is on the increase and he reported six cases of panic reactions and paranoid symptoms which included two suicides. He concludes that 'LSD can be dangerous if taken casually'.

A year earlier, 1966, the *British Medical Journal*, in a leader, had reported that several cases of suicide and psychosis and one case of murder had been recorded. In the lay press Warren Young declared 'numbers of young people in Britain are experimenting with LSD, known to drug addicts as "Instant Zen" '. At the same time, Senator Robert Kennedy's hearings on LSD were taking place in the United States. Those giving evidence pointed to the real difficulty, in law, of college students who take the drug once or twice only. Recently the Office of Health Economics (1967) has recorded the controversy which exists between British psychiatrists as to whether LSD is a separate problem from that of addiction and whether its use, like that of other soft drugs, can escalate to the use of hard drugs or narcotics.

The dangers of self-administration of LSD are accentuated by the following considerations:—

(1) Those who take them illicitly are often emotionally disturbed and come from backgrounds which predispose them to emotional and psychotic disorder.

(2) Such support as is forthcoming during the psychedelic experience of these self-experimenters is usually from others who are likewise emotionally unstable.

(3) The danger of accidental ingestion or deliberately secret administration of LSD can occur. Unsupervised, the victim may be terrified by the unexpected mental changes into rash acts or even suicide.

RECOGNITION AND COMPLICATIONS

Where lies the truth about the use and abuse of LSD? How likely is the general practitioner to encounter a patient who has taken LSD and how can he recognize such an individual? What may he be called upon to do?

It is almost impossible to forecast what the chances are of seeing a case. Despite the Poisons Regulations of 1967 it is probable that the numbers of those taking LSD are on the increase. Cases are most likely to be found in areas where drug addiction to narcotics is common. LSD-taking is common among students, and cases are likely to be encountered at all the universities and possibly at some colleges of further education, particularly art colleges. The diagnosis of illicit self-administration of LSD is complicated by the fact that other drugs may have been taken, particularly amphetamines and barbiturates. Alcohol may also be involved.

EMOTIONALLY CHARGED FANTASIES

LSD is commonly taken as a liquid on sugar, or soaked into blotting paper, or as blue pills. Those who have taken LSD illicitly may be reluctant to admit having done so, now that the Poisons Regulations make it an offence to possess and use hallucinogenic drugs except by those possessing a warrant to do so. The action of LSD occurs within thirty minutes of ingestion, reaches a peak in one to two hours, decreases slowly for eight hours and then persists for a variable period in the form of after-effects.

The period of activity is characterized by visual and emotional changes and by the emergence of emotionally charged fantasies which may induce states of extreme panic. Hallucinatory experiences alone are sometimes alarming to the subject, doubly so if the effects are unexpected, as when LSD is administered secretly. Not infrequently, feelings of omnipotence and manic feelings of Olympian power may motivate the subject to acts of rashness or self-injury.

One youth of 20 who plunged from the roof of a Baptist chapel after taking LSD may have thought he could fly. A patient reported by Cohen (following ingestion of morning glory seeds) in a state of great agitation drove his car at 100 miles per hour (160 k.p.h.) into a house at the bottom of a hill.

Such ritual suicide may occur in the course of therapy.

Several of my own patients had strong urges to end their lives during treatment and it was only the presence of doctors or nurses and the use of drugs which prevented them from making the attempt.

In the therapeutic setting these urges could be used to advantage, in helping the patient to come to terms with his own aggression.

DISSOLUTION AND DEPERSONALIZATION

The administration of LSD often results in a feeling of dissolution, both bodily and mental. States of depersonalization may occur, the patient feeling that he is outside his body. These conditions may engender fear and panic and it is such panic reactions to illicit LSD-taking that practitioners may encounter. Somewhat opposite experiences, much sought after among LSD takers, are those of transcendental calm, of a sense of the unity of all

things, a detachment from the world and of oneness with the universe. Such states of detachment also have their dangers.

The West German magazine, *Stern* (May 29, 1966), reported that a 32-year-old taker of LSD had made 300 trips, being 'mild and composed like a Tibetan monk'.

Such an attitude may lead to indolence, dependency on the Welfare State, social deterioration, and present severe problems for rehabilitation.

The after-effects of LSD may persist for days or weeks and take the form of periods of sudden return of the symptoms, possibly when the subject is at work, or driving his car or in other situations demanding his full attention. Since the LSD experience often takes the subject into states resembling childhood the patient may, during one of these after-crises, feel incapable of performing the task in hand.

PSYCHOTIC REACTIONS

A final danger lies in psychotic or near-psychotic reactions, and there are some reports of permanent psychosis following the administration of LSD. Paranoid reactions are common: the patient may feel hemmed in, that others are talking about him or threatening him or that people around are changing their identity.

Stern reports that the group, having taken LSD, decide to go to the amusement park—'A small red delivery van drives past us and all of a sudden, things turn red, as if ablaze. Now it is over. We get out [of the taxi] and I have a feeling of lightness, I weigh 50 pounds at the most. Only my feet have grown to size 48, I am wearing huge black shoes. But nobody looks at my feet, no one seems to think they look unusual. Small wonder. For here there are no normal people at all, only disfigured ones . . . A man with a purple face goes past, he has a huge nose and a leer on his face. He is greedy, greed looks out of his eyes. But nobody turns to watch him. Distorted mouths, drawn up lips, prominent teeth, moist heads. All of a sudden, I know where I have seen people like this before: in the pictures of Hieronymus Bosch; that's it, Hieronymus Bosch at the fun fair'.

Seemingly, such changes provoked interest rather than aggression in this instance.

In a case which came to my notice, a man allegedly under the influence of LSD committed rape on the 9-year-old daughter of his mistress, in the belief that the child was his mistress.

Such transformations under LSD are well known and his defence may have been a valid one. The subject who visited the fun fair seems to have had an understanding of the dangers of wandering abroad after taking LSD:—

'I wonder how many people wander about the streets of London daily under the effect of LSD, just as we do today? 200 or 2000? Helpless in the traffic stream, the prey to hallucinations, dumped into a sea of the wildest colours, a distorted world before them'.

ANTIDOTES

There is no specific antidote for LSD. Phenothiazines and barbiturates, however, effectively cut short the experience and produce a return to relative normality within half-an-hour. Chlorpromazine, 50 to 100 mg. intramuscularly, is most favoured. Milder cases respond to pentobarbitone, 60 to 120 mg. Any practitioner who encounters a patient showing bizarre or psychotic behaviour, expressing suicidal thoughts or showing a panic reaction with a probable history of having taken LSD, would be well advised

to admit the patient immediately to hospital. Blood and urine samples should be taken when possible. The laboratory identification of LSD is not specific, but tests can indicate whether a drug with the properties of LSD has been taken, and the presence of other drugs such as amphetamines can be looked for.

LONG-TERM DANGERS OF LSD

In the long-term, psychosis may rarely persist, but a few well-authenticated cases have been reported. Addiction, in the physical sense, does not appear to occur, but dependency does although it is psychological rather than pharmacological. The enormous fascination of the unconscious creates a desire to taste again the god-like qualities endowed by the drug. In a detached study of the use and users of LSD, 'Utopiates', Richard Blum and his associates (1965) comment on the subject of dependency on LSD.

Surveying 92 users of LSD, they compared the continuing users with discontinuers, and concluded that nearly three-fourths of all persons who have had LSD express an interest in taking it again. About half took it at least twice, but only a minority (14 to 25 per cent.) were classed as regular users. The regular users claimed more beneficial effects of the drug 'especially in self-satisfaction, self-direction, freedom from pressure and overcommitment to work and goals'. Several 'regulars', however, were rated as showing reduced capacity for work and, far more 'regulars' than discontinuers as demonstrating reduced ego control.

They conclude that 'more than half of the regulars do show signs of habituation, but quite clearly LSD does not necessarily lead to habituation'.

They also compared 47 persons, who had the opportunity to take LSD but failed to take the drug, with 71 persons in the same circumstances who had taken it. LSD acceptors were more often younger, religiously active, male and single. Distinct differences in attitudes between the acceptors and rejectors were found, but not all the evidence suggested that acceptors were less stable than the rejectors. In fact, many of the rejectors were those who feared loss of self-control, who feared the dangers of drug taking or who lacked interest in changing themselves through drugs.

Recently, a new factor has emerged to add to the long-term hazards of LSD. The findings of a number of workers, reported in *The Lancet* (1967), suggest that LSD is an agent capable of producing chromosomal damage *in vitro* and probably *in vivo*; damage that is long lasting and 'may indicate that LSD can be both neoplastic and teratogenic'. In two young men, the heaviest users of LSD, the Philadelphia chromosome seen in myeloid leukæmia has been reported. There is one case of a deformed child being born after the mother had taken a single dose of LSD during the first month of pregnancy, and early abortion and fœtal abnormalities are reported in rats after LSD. *The Lancet* concludes: 'In view of these findings, LSD must now be considered as a possible cause when a deformed child is born', thus suggesting yet another area of inquiry for the practitioner.

SOCIAL AND ETHICAL ISSUES

We have now surveyed the problems surrounding the use of hallucinogenic drugs in our society, using LSD as our model. What has been said is substantially true of other drugs in the group, although dimethyltryptamine (D.M.T.) may be more liable to produce psychotic reactions than LSD. In concluding this article, we turn to the wider social and ethical issues con-

cerning the use of hallucinogens outside the carefully designated area laid down by the poisons regulations.

Despite these regulations, it seems likely that more and more people will experiment with and use LSD for motives which may be complex and which they may not fully understand. Yet we cannot be sure what direction such movement will take. Just as the 'mods and rockers' vanished almost overnight to give way to the 'Flower' people, so this in its turn, with its overtones of the psychedelic experience, may give way to something else. Nevertheless, we are on the fringe of the so-called permissive society, and a look at some aspects of this society may help us to see the future prospects for LSD more clearly.

In a large area of civilization, including Western Europe, preoccupation with physical disease and the avoidance of early death precluded a serious study of mind-altering drugs until the last three decades. The conquest of infection by sulphonamides and antibiotics, advances in surgery, radiotherapy, preventive and social medicine has put aside the fear of infant and child mortality, lengthened the span of life and made death in the first half-century of a man's life the exception rather than the rule. The enormous effect of this on the mental attitudes of the young, middle-aged and elderly has yet to be studied. As Comfort says, we are born into a society with no emotional technology. Laing (1967) puts it slightly differently by saying:—

'He [the adolescent] is entering a territory which gives a child born today in this country ten times more chance of going to a mental hospital than to a university'.

Contributions to the literature of the permissive society suggest that sexual emancipation has become a reality because pregnancy is now a dispensable fear. Perhaps drugs such as 'pot' and LSD are much in the same category as sex before the pill: for 'pregnancy' read 'suicide' or 'psychosis'.

This brings us back to the mid-1930s. While mankind stood on the threshold of the conquest of many diseases, in 'Brave New World' Aldous Huxley was proposing a euphoriant which removed aggression without destroying initiative. This attractive theme seems to be lived out in a crude sort of reality by the users of LSD. Recently another philosopher in the modern idiom, Koestler (1967), has proposed a super-tranquillizer which will solve the age-old clash between reason and emotion, a kind of chemical insight. Such a proposal may not be just an extravagant dream. Today we are accustomed to such means for the enlargement of human experience through many channels which were formerly taboo to all except small and highly privileged groups. Thus the private worlds of a few are becoming the potential property of all, partly through the medium of mind-revealing drugs. This was rather accurately foretold by Charles Williams in his book 'Many Dimensions', written in 1931—before 'Brave New World'. There remains the real possibility of the development of a 'pill' to guard against the existing dangers of the hallucinogenic drugs. Will it then be only a question of time before drugs of the psychedelic group are treated with the same permissiveness in our society as sex, gambling, motor cars and tranquillizers are now? If so, is society ready, and, especially, are the doctors

who serve and form part of that society ready, for yet another social revolution?

TRANSCENDING NORMAL EXPERIENCE

The need to transcend normal experience may well grow rather than diminish as conditions of increasingly crowded life and loss of contact with the natural world continue to spread throughout the globe. What was formerly a substitute may become a vital necessity. The great philosophical question posed by the more universal use of hallucinogenic drugs is whether they really do add to the range of human experience and whether, properly used, they can result in development and enlargement of the human personality: an enlargement which we shall find essential if we are to develop an 'emotional technology' and solve the problems of the next hundred years. What we might call the 'Establishment' in this field—those who advocate years of effort, practice and study towards producing mental attitudes characterized by Yoga, and the other mystics—are unlikely to be in time to save us from the worst follies of cultures which overvalue consciousness and scientific achievement.

The very small contribution made by those psychotherapists who have used LSD as an aid to their art does seriously suggest that a drug can so aid and speed up the process of personality growth that it is an effective therapeutic tool. Furthermore, the kind of comments made by patients who have been followed up after having LSD therapy suggest that the gains are permanent and that the patient continues to be in touch with those parts of his mental life which go towards enriching both subjective and objective experience.

SUMMING UP

At this present time, society is on uneasy terms with LSD and will remain so until its dangers have been removed. Most of all, society itself will have to reach a point of truce with a movement which has come to stay. The primary urge to enlarge experience means that few children now being born will resist trying out some form of psychedelic drug, and some, whether in psychotherapy or not, will use them genuinely to enlarge and mature their personalities. The new generation of psychiatrists may have to abandon tranquillizers and psychic energizers; it seems likely that it will keep a close eye on chemical promoters of emotional insight.

References

Bewley, T. H. (1967): *Brit. med. J.*, **iii,** 28.
Blum, R., *et al.* (1965): 'Utopiates', Tavistock Publications, London.
British Medical Journal (1966): **ii,** 1495.
Cohen, S. (1965): 'Drugs of Hallucination', Secker & Warburg Ltd., London.
Comfort, A. (1967): *The Guardian*, October 30.
'Drug Addiction' (1967): Office of Health Economics publication No. 25.
Koestler, A. (1967): 'The Ghost in the Machine', Hutchinson, London.
Kraupl-Taylor, F. (1966): *Int. med. Trib.*, May 19.
Laing, R. D. (1967): quoted by G. Moorhouse, *The Guardian*, October 17.
Lancet (1967): **ii,** 504.
Sandison, R. A. (1964): *The Practitioner*, **192,** 30.
Williams, Charles (1931): 'Many Dimensions', Faber and Faber, London.