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PROLONGED ADVERSE REACTIONS FROM UNSUPERVISED USE OF HALLUCINOGENIC DRUGS

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Concern over illicit usage of hallucinogenic drugs, especially lysergic acid diethylamide (LSD-25), has reached massive proportions in segments of the popular press. The number of persons taking these drugs on their own has been estimated anywhere from the tens of thousands to over a million. How many people actually have used these drugs is unknown. One magazine (25) mentions 10,000 students at the University of California alone. There have been many reports in the popular media of bizarre acts, psychoses, suicide attempts and even murders occurring under the unsupervised influence of these agents. Only recently, however, has there been a number of such cases reported in the professional literature. The purpose of the present paper is to review the background of the current drug problem and report five additional cases, which came to the author's attention while he was gathering information on the problem of student drug use.

Although the effects of peyote were known in the United States at the turn of the century and LSD has been used here in experiments since the late 1940's, widespread use of these drugs apparently was not a major problem until the early 1960's. There appear to be several factors operative in this spread, although it has become fashionable to attribute it to the psychologists Leary and Alpert who began experimenting with Psilocybin, using Harvard students as subjects (13, 26). The publicity surrounding their work (and their later expulsion from Harvard arousing even more publicity) is considered the trigger for setting off the current drug fad (14, 18, 30). Somewhat prior to their work, in the 1950's, the late author Aldous Huxley had written in glowing terms of his mescaline experiences (15), and his descriptions are considered to have helped lay the groundwork for what was to explode at Harvard. In a similar position would be the philosopher Alan Watts whose writings were more exuberant and less critical (28, 29).

It would be unfair, however, to place the blame for the current drug problem solely on any of these men. After all, Havelock Ellis had written 70 years ago about his experiences with peyote (10) and was attacked then for painting too attractive a picture (9). The Indians of the Native American Church have been using peyote in their ceremonies for many years and have been the subject of a number of legal attacks (21), apparently at least partially motivated by a fear that use of peyote would spread. In spite of these fears, peyote had never achieved much widespread popularity.

What apparently happened in the 1960's was that Huxley, Leary (19) and others emphasized the personality-improving, "consciousness-expanding," and mystical aspects of these agents at a time when affluent, eager-to-experiment, college-age youth were looking for something beyond, or rebelling against, the material aspects of our culture. Narcotics, such as heroin, were too dangerous because of the possibility of addiction and the severe legal penalties. These "new" drugs, however, were neither physically addicting nor illegal; the dangers were considered moderate. In fact, this *moderate* element of danger might have added an intriguing dimension to the undertaking. The increased use of marihuana on college cam-

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puses appears to have a similar background with one added factor: the legal penalties are quite severe, even though, like LSD, the drug is not physically addicting. Students, therefore, rationalize that it is a "bad" law which they are not obligated to obey (an attitude somewhat similar to the reaction to Prohibition).

Equally important to understanding the current wave of hallucinogenic drug use[2] is to realize that the use of mental hygiene clinics at university health services has been growing apace. This suggests an increasing preoccupation with personal dissatisfactions as well as increased academic and competitive pressures. Given this concern over personality functioning, one can understand why a drug popularly touted to improve such functioning could lead to a widespread drug problem. The final sentences from Huxley's book on mescaline may well express what many current LSD users are searching for (though some find psychological disaster instead): "... But the man who comes back through the Door in the Wall will never be quite the same as the man who went out. He will be wiser but less cocksure, happier but less self-satisfied, humbler in acknowledging his ignorance yet better equipped to understand the relationship of words to things, of systematic reasoning to the unfathomable Mystery which it tries forever vainly to comprehend" (15, p. 79).

Other factors that appear to have contributed to increased drug usage are: 1) foreign travel, especially to Mexico and South America, with its consequent increased exposure; 2) the "beatnik" phenomenon, by an emphasis on feeling and by leading to a cross-fertilization of "traditional" drug users with new types; 3) increased interest in existentialism, Zen Buddhism, and Eastern philosophy generally.

The incidence of serious side effects from LSD and the other hallucinogens (*e.g.*, mescaline, Psilocybin) has been considered rather low when the drug was taken under *supervised* conditions by investigators *experienced* in its use. Cohen (4) in 1960 reported on the results of a survey of 44 investigators covering almost 5,000 patients who had taken LSD or mescaline. His findings, plus a search of the literature, yielded an incidence of 0.08 per cent of psychotic reactions lasting longer than 48 hours in normal experimental subjects, and of 0.18 per cent in patients undergoing LSD-25 type psychotherapy. There were no confirmed instances of attempted or completed suicides in the first group, and the completed suicide rate was 0.04 per cent in the second group. No instance of addiction to LSD-25 was found (6). Since the paper surveyed legitimate drug usage, there were no data on untoward reactions from illegitimate usage with one exception. This individual took peyote clandestinely before and shortly after supervised LSD treatment. A prolonged psychotic reaction ensued and took six months to clear.

In a later paper Cohen and Ditman (7) divided prolonged adverse effects from LSD into four categories: 1) prolonged psychotic decompensation; 2) depressive reactions; 3) release of pre-existing psychopathic or asocial trends; 4) paranoid reactions. Of the eight case illustrations, two had received LSD under supervision; two definitely had not; and in four the extent of supervision, if any, was unclear. These latter six cases included three prolonged psychoses, one depressive reaction, one asocial acting out, and one paranoid reaction. The authors state that in addition to the drug's use by relatively unstable individuals, complications could be caused by the ease of overdosage with such a highly potent drug and the poor handling of upsetting experiences occurring during the drug state. At the end of their paper they stress, "Complications ... are much more likely to occur after the unsuper-

[2] In this context, "Psychedelic" (mind-manifesting) is the more descriptive term, since this is how the current users consider the drugs' properties.

vised or inexpert use of this drug" (7, p. 480).

An additional category, "persistent hallucinosis," was formulated by Rosenthal (23) who reported on one case and presented arguments why the three cases of "prolonged psychosis" reported by Cohen and Ditman (7) might better fit the new label and why the psychotic label might, in fact, be misleading. Cohen and Ditman themselves called one "a borderline panic state with spontaneous visual hallucinatory phenomena," and the second "an anxiety and depressive reaction with dissociative features." The third had visual distortions and hallucinations with anxiety but otherwise appeared nonpsychotic. Rosenthal's case also does not appear psychotic other than for her hallucinations. Her initial use of LSD had come from seeking out an LSD therapist, and she had then gone on to use the drug on her own.

Blum *et al.* (1), as part of a study on both supervised and unsupervised LSD use, studied informal LSD-taking among various professionals (24 subjects) and "black market users" (12 subjects) in California. A provocative finding as far as adverse effects are concerned was that six subjects claimed beneficial changes from their LSD experiences while their wives and employers felt their personalities and work had changed for the worse. This appears to be a situation in which the positive changes claimed by the user are in the direction of "freedom from pressure and overcommitment to work and goals"; such changes could be viewed by an employer as resulting in less productivity and by a wife as constituting a threat to the financial and social security of the family. The evidence presented is essentially anecdotal, however. Both more objective measurement (*e.g.*, job loss or change, decreased income) and more complete descriptions would be useful.

Ludwig and Levine (20) obtained material about hallucinogenic drug abuse by interviewing hospitalized narcotic addicts who had also used hallucinogens. None of the patients reported any prolonged bad effects themselves, but some claimed knowledge of individuals who had become psychotic after extended use.

Frosch, Robbins and Stern (13) in a recent paper reported that 27 patients had been admitted to Bellevue Hospital, New York City, in a four-month period in 1965 subsequent to their unsupervised LSD usage. Twelve cases are discussed and divided into "three somewhat overlapping types: panic reaction; reappearance of 'drug' symptoms without reingestion of the drug; and overt psychosis" (13, p. 1236). The six who had panic reactions without later symptoms can be dismissed in terms of prolonged adverse reactions, since all had their symptoms disappear in one to three days. (However, as the authors point out, there are no long-range follow-up results.) The three who had reappearance of symptoms seem similar to Rosenthal's "persistent hallucinosis" group, except that diagnostically they were considered chronic schizophrenics. As previously noted, neither Cohen and Ditman's three patients nor Rosenthal's one case appear to have been psychotic. The final category, overt psychosis, included three patients, all of which were considered to have long-standing schizophrenia. The authors hypothesize that, under LSD, the patients thought they had solved their problems and achieved a new sense of self. When this hope conflicted with the realities of the post-drug world, they withdrew into catatonia.

Ungerleider *et al.* (27) have written of their experiences with 70 patients who came to a psychiatric service emergency room following unsupervised use of LSD. Twenty-five of these patients required hospitalization, 17 for one month or more. No data are given on the remaining 45 patients that would enable one to estimate the degree of functional impairment. Over one-third of the total patient sample had re-

ceived previous psychiatric treatment, and over one-half were using other drugs in addition to the LSD. About 70 per cent had taken LSD more than once, 23 per cent more than ten times. The group was predominantly single, white, male and had an average age of 21. Their classification of adverse effects does not follow the earlier model of Cohen and Ditman (7), but instead groups the patients by symptoms and psychiatric diagnosis. Unfortunately, no data are given relating such diagnoses to the duration of adverse effects, so one can only guess as to which patients required prolonged treatment. The paper does provide useful demographic data on LSD users and stresses again—by sheer numbers—the hazards of such unsupervised drug usage.

Six cases have been reported of adverse effects from the ingestion of morning glory seeds, some varieties of which have hallucinogenic properties. Cohen (5) reports a case of suicide by a university student about one month after he chewed 300 such seeds. The precipitating cause appears to have been the recurrence of the hallucinogenic state three weeks after the initial experience with the student's feeling he was going insane. Ingram (16) reports on a female student who became anxious and depressed following ingestion of morning glory seeds. Her symptoms were gone within four days, however.

Fink *et al.* (12) have reported on three cases of "morning glory seed psychosis." The first subject went into shock shortly after an injection of liquid derived from boiling 200 morning glory seeds in water and four months later was still having recurrent hallucinatory phenomena. The second case required admission to an inpatient psychiatric facility with clear-cut psychotic symptoms. He gradually improved and was discharged three months later. The third subject went into a stupor during the drug experience and was hospitalized; 24 hours later no psychosis was evident, but the patient appeared depressed. Follow-up data were not given. All three cases were described as being "marginally adjusted prior to ingestion of the drugs" and apparently were unable to reintegrate after the drug experiences.

Bowers *et al.* (2) have reported on three students, two of whom required hospitalization. The first presented in an acute delirious state after ingestion of an unknown quantity of morning glory seeds. The delirium cleared after 48 hours, and there were no apparent sequelae. (This individual had been leading a rather wandering existence and there is some question whether his chronic drug-taking had been a major factor in his social disorganization.) The second was admitted to the hospital because of increasing disorganization, depression and suicidal preoccupation one week after taking LSD. There was little initial improvement, and he was eventually transferred to another institution for long-term hospitalization. His projective tests indicated "little ability to contain or regulate the unconscious material stimulated by the drug experience." The third student was seen on an outpatient basis for continuing anxiety following a single LSD experience (approximately 100 mg). His anxiety level remained quite high for about three weeks and then cleared without apparent serious impairment. In all of these patients the authors felt there was a central problem of lack of access to meaningful affective experience which led to an interest in the drug-taking.

PROCEDURE

The cases reported below were gathered during a study in 1964 of unsupervised use of hallucinogenic drugs among the student body of a large northeastern university. Follow-up data were obtained on two students two years later. No formal attempt was made at the time of the study to gather detailed information on incidence or prevalence of drug use at this particular

campus. Rather, the study represented a clinical approach to finding out about student drug-users at a time when such information was lacking in the professional literature. Details of the study and the patterns of student use that emerged are reported elsewhere (17). The subjects were 21 male students: nine had been in therapy at the university health service; two came into therapy following their drug use, and ten had no formal contact with the mental hygiene division of the health service. These latter were referred by other sources when it became known that the author was interested in talking with students using hallucinogenic drugs and all that information would be kept confidential.

Information about the ten non-therapy students was gathered by a personal interview—a semi-structured affair lasting from one-and-one-half to four hours. Information about the 11 therapy students was gathered by consulting with their therapists and, for four of the six students who were still at the university, by a personal interview similar to the one mentioned above. In all 21 cases certain background and demographic data were gathered from university records.

ILLUSTRATIVE CASES

CASE 1

A., a 20-year-old sophomore, came to the university health service originally complaining of depression and doing poorly in his school work. He was in the lowest quarter of his class, much below what one would have predicted on the basis of his college board scores. He was noted to be emotionally labile and dropped out of therapy in a short time. About a year later he first began taking peyote. At the time of the study he had taken peyote eight times, marihuana five times, and LSD once. He gave as his reason for initial peyote use that he felt "screwed up, too introspective, unable to study, unable to love or give of myself." He felt "overloved" by his parents. "I could never please or displease them. They accepted everything I did. I couldn't get any meaning out my relationship with them," he said.

A. had a number of friends who had taken peyote and, since they all had good reactions to it, he had no fears about taking it. He said he had come close to suicide a few times but hadn't completed the act, so he wasn't worried he'd do it under peyote. The first time under the drug he was with one other boy who had taken it before. Classical guitar music was playing on the phonograph. Carried away by the effects of light and color, he characterized the experience as pleasant initially. He then became somewhat depressed, "irrational" and frightened by his inability to control the irrationality. He stated this was the only time he had become frightened under peyote and since then had felt that his thinking was more rational and profound under the drug than otherwise. (In fact he had written some course papers while under the influence.) He also felt that, because of the drug experience, he could control himself emotionally and behaviorally better than ever before and that he no longer cared what people thought of him. These beneficial effects he felt were abruptly interfered with by an LSD experience which occurred some weeks before I saw him for this study.

He took LSD while on a visit to New York. Unlike his peyote experience he was scared before taking it because a roommate of the boy who gave it to him had had a "psychotic break" after LSD and had had to be hospitalized. His own experience under LSD was unpleasant and left him with unpleasant after-effects. He found himself verbally abusive and had to struggle to control an impulse to physically attack people with whom he became angry.

Shaky, very depressed and at times suicidally preoccupied, a week before the interview for this study he re-entered ther-

apy on an emergency basis. His plans for the future were to leave college at the end of the year and go to the Far East to "think, meet people, and learn about Eastern religions." (These plans had been made after the peyote but prior to the LSD experience.) He intended to continue taking peyote but not LSD. Following this short-term emergency contact, he became sufficiently integrated to leave school for the summer vacation. He had decided also to return to college for the fall term.

Four months later A. again came to the clinic on an emergency basis. His problems were, he explained, related to shadows and control. These shadows "seemed to be between the conscious and unconscious, like a great big Labrador dog standing there waiting to bite.... either I control them or they control me ... and a few days ago they started to get out of control again and I became worried. I thought they were going to be in control forever...." He spoke of wanting to overcome sleep. He deliberately kept his physical exertions to a minimum so there wouldn't be any reason for his body to be tired. He wanted his mind to be free to "journey through the universe and not have to worry about sleep." He wondered sometimes whether his mind would come back from the journey because there was often "nothing for it to come back to."

During this period A. was taking peyote regularly about once every two weeks. He felt this was essential to his creative state, "conducive to establishing new philosophical systems." At times he also took heavy doses of Benzedrine. He came to two appointments with the psychiatrist and then did not return. A few weeks later he was found to have dropped out of school. Final diagnostic impression was borderline state.

Comment: This subject illustrates the danger of chronic multi-drug use, especially in individuals already struggling with impulse control. He appears to have gradually disintegrated under the impact of the frequent exposures to unconcious material with which he could not cope.

CASE 2

B., a 19-year-old white sophomore, came to the university health service because of persistent severe anxiety attacks that had begun three weeks after his second peyote experience. These attacks could be precipitated by recalling some of the events of this drug experience or might occur spontaneously. Their frequency and severity were leaving him increasingly incapacitated. B. was a bright, compulsive youth who ranked high in his class academically but who had never felt comfortable in interpersonal relations with either sex. About three months prior to his first drug experience he had abruptly discontinued his nightly walks, having had the impression that the people who passed him might be thinking of him as a homosexual. (He had never had any homosexual experiences and disclaimed any desire in this direction.)

He gave as his reason for initial drug use that, since he was interested in psychology, this was an experience he should have. Although frightened over what the results might be, he felt that if he were ever going to do anything in this field, he would have to subject himself to such an experience.

The first time he tried peyote he chewed only three buttons and had little effect from it. The second time he took six buttons. On both occasions he was alone, an untypical circumstance of the group as a whole. The drug experience started off very pleasantly—he labeled it a "manic" or "euphoric" state. He felt pleased with himself, enjoyed the visual effects, and felt he had tremendous insight into his life and his difficulties. In general he felt better than he had for most of his life. He took notes on the experience to use in making a movie at a later date. This phase was succeeded in about five hours by a "para-

noid state." Outside at the time, he suddenly became very frightened. He thought he heard footsteps coming closer and closer toward him. He crouched beside a building for an hour or so in a panic state before finally being able to get up and leave.

In therapy it turned out that the footsteps represented someone coming to make a homosexual assault on him. As this area was explored as well as the patient's difficulties in handling aggression, the anxiety attacks lessened and finally ceased altogether. By the third month of therapy they were no longer a problem.

In thinking over his drug experience at a later point in therapy, he described himself both attracted and repelled in relation to the events under peyote. He felt the first part was most enjoyable and valuable but he was terrified of the "paranoid" phase. He was initially undecided about whether to continue the drug use or not but on the advice of his psychiatrist decided against it.

Comment: This case combines elements of the paranoid reaction described by Cohen (7) along with severe anxiety features. It illustrates the dangers of drug use in rigid, compulsive individuals, especially when there are warning signs of weakening of the ego defenses (in this case, paranoid fears occuring three months before the drug use).

CASE 3

C., a 21-year-old white single junior, was referred to the author by another student who had been interviewed for the hallucinogenic drug study. He had been seen at the mental hygiene clinic one year earlier for a short period and had taken his first dose of peyote prior to entering therapy.

C. came from a distinguished family whose members had attended the university for over 100 years. When first seen at the health service, however, he was in rebellion against the family pattern. His hair was long; he spent most of his time playing the guitar, and he was in the lower third of his class. He phrased it succinctly, "There's one black sheep in every generation, and I guess I'm slated to be it for this generation." He was ambivalent, though, about his beatnik experiences and at times felt he should break away from them and settle down. He had first taken peyote as a new experience and "to put more oomph into my guitar-playing." He had enjoyed the experiences and felt tremendous elation, but he was hesitant about continuing. He feared it might lead to other drugs and also felt it was symptomatic of a way of life he wanted to avoid. Diagnostic impression was adjustment reaction of adolescence.

When seen about one-and-one-half years later, most of the ambivalence had either dropped out or was well concealed. He had now taken peyote many times and was considered the "granddaddy" of student users. He was much in demand as an advisor to students who were taking the drug for the first time. His appearance was disheveled, his stories at times hard to follow. He felt the peyote gave him valuable insights into life as well as elated experiences. He still spent much of his time playing the guitar and was doing poorly in his studies. When he came to college he had planned to go on to professional school, but now his plans were vague and seemed of little importance to him. Perhaps he would become a professional guitar player wandering around the country. Although he denied being dependent on the peyote, much of his life appeared to center around the drug's use.

Seven months later C. returned to university health clinic on his own. His main concern was over his drug-taking, and he discussed in a rather intellectual fashion his tendencies toward drug addiction. In addition to using marihuana and peyote on

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a more sporadic basis, he felt he was habituated to Benzedrine and other pep pills. He was using 20–45 mg of Benzedrine a day. He was mainly interested in what could replace the need for the pills and, in a more general fashion, what caused habituation. He did not keep his next appointment and quietly dropped out of college about a month later. At last report he was living a beatnik existence in California.

Comment: This case would appear to fall in the category described by Cohen and Ditman (7) as release of asocial trends with abandonment of social responsibilities. The student's initial drug-taking was part of a constellation of behavior that defied the mores of his family and its emphasis on community service and responsibility. At first he was aware of the conflict and, like many before him, might well have eventually resolved it in favor of a way of life similar to his background. Under the impact of repeated drug-taking, however, with the emphasis on "feeling" rather than "doing," the conflict became resolved in the opposite direction.

CASE 4

D., a 21-year-old white single senior, came to the mental hygiene clinic because he was disturbed over things that were happening to him. He had used peyote over 12 times since starting the previous year in Mexico with a friend. He had since developed a persistence of the drug state weeks after his last dose. The symptoms tended to occur whenever he was awake for long periods of time, as, for example, in writing term papers, or when he was overtired and would lie down to go to sleep. On these occasions he had a sudden attack of anxiety, a sinking feeling, and paralysis. He was unable to move or call out. This was accompanied by a rushing sound in his ears, flushing of his face, and the experience of vivid colors and intensified perception—sensations that had characterized his drug experience. At times he saw spirals which would wrap tightly around his body like the coils of a snake. He could think clearly but not act. Any external sensations, such as a radio playing or a telephone ringing, would bring him out of it at once. The attacks lasted, he felt, about two or three minutes, but his time sense may have been thrown off and he wasn't sure of the exact duration. At times he had been up all night after one of these episodes, unnerved by what had happened. He wasn't scared, he claimed, but didn't like to be paralyzed. He thought that there had been about 25 of these episodes since stopping the peyote. He claimed he wasn't interested in the psychiatric aspects of what was happening but rather in finding out if there was anything wrong physically, such as a ruptured blood vessel. (However, he had come to the psychiatric division directly rather than to the medical division of the university health clinic.)

After this initial visit he returned once to the mental hygiene clinic, discussed his experiences some more, and then decided there was no need for further contact. He was seen again three months later for an administrative matter of a different nature. At that time he stated that the attacks had gradually diminished in frequency and eventually had stopped altogether. At his initial visits he had planned to continue using peyote but by the time of the last contact had decided against this. He was going to enlist in a volunteer government poverty program.

The oldest son of a wealthy western family, he had been active in extracurricular activities and academically was about midway in his class. He was an engineering major, having decided on this on the basis that it would "discipline" him more and he wouldn't "fall into a useless routine." He discovered later that it was "very restricted, a lot of drudgery,

really didn't offer much in the way of interesting work." He was at that time thinking of graduate school but changed his mind frequently and didn't want to do any studying for at least a year.

He gave as his initial reason for peyote use "curiosity in obtaining a new kind of sensory evaluation." He had read good reports about it and had friends who had had good experiences with it, although some had had "panic" episodes. He had taken it alone and with others of both sexes. He talked about envisioning colors, "seeing" music and different senses of self. Once, when he and a girl took the drug together, a change of identity occurred and each felt as if he were the other person as well as himself. He described a satisfactory heterosexual life, but had been the target for intense homosexual feelings on the part of one boy with whom he had taken peyote on several occasions. He denied reciprocating these feelings.

None of the interviewers thought D. was psychotic. He was described as a character disorder.

Comment: This case fits the category of "persistent hallucinosis." Like most of the other cases in this category, the patient had used hallucinogens on repeated occasions and had symptoms recurring weeks after stopping drug use.

CASE 5

E., a 22-year-old white single senior, came to the mental hygiene clinic requesting help in dealing with his mother who had recently been hospitalized with a diagnosis of schizophrenia. He presented initially as agitated and desperate, unable to look the interviewer in the eye, gesturing frequently, smoking almost constantly; his voice was tremulous and his appearance somewhat unkempt. There was marked pressure of speech and flight of ideas. Once he began talking other problems emerged: fears of overt homosexuality, periodic suicidal rumination, and concern over excessive religious preoccupation.

E. came from a financially comfortable professional family and was in the upper half of his class. He was active on campus and, in spite of his serious psychological problems, was apparently making an adequate adjustment. Following his initial contact he was seen in the mental hygiene clinic for over 20 visits. During this time he reported on his prior and continued use of peyote which he obtained from "a friend on campus." He gave as his reasons for initial use that he was trying to achieve "a heightened religious experience" and also "to get closer to people." He felt he accomplished both of these objectives while under peyote but was bothered by the simultaneous feelings of depersonalization and false sensations of people in the room with him. He had taken peyote on at least five occasions.

Before using peyote he had felt himself to be sexually attracted to men but was repelled by the idea of homosexuality. He was afraid of becoming a homosexual and had resisted overt behavior in this direction. While under the peyote he felt more intensely his attraction to a male friend with whom he took it, an endeavor which developed a special bond between them. Eventually this culminated in overt homosexual relations and then panic episodes.

In therapy the patient was able to work these through to some extent and at the end of treatment (due to the patient's graduating) the therapist thought him to be more in control of himself and less subject to the panic attacks. Further treatment was recommended. The patient remained interested—despite his therapist's warnings—in using peyote but had trouble getting it and was smoking marihuana instead.

The therapist's impression was that the *joint* use of peyote contributed to the patient's eventual homosexual behavior

and sequellae, although it is not denied that in this particular patient such behavioral activity might have taken place regardless of his drug use. In addition, the drug experiences appeared to increase temporarily the patient's difficulty in reality testing and in maintaining control over his feelings and behavior in social situations. These later changes were subtle, however, and the patient was able to function effectively enough to graduate from college.

Comment: The case may illustrate dangers of the drug in persons who should never have been taking it in the first place. It thus suggests an additional category of adverse effect: exacerbation of pre-existing psychiatric illness.

DISCUSSION

It should not be deduced from the articles and cases cited that the taking of hallucinogenic drugs without supervision is unqualifiedly dangerous or their use under supervision unqualifiedly safe. Rather it should be noted that these drugs are quite potent and that, even in experienced hands, there can be untoward effects. Without adequate safeguards the possible occurrence of these always existent hazards will be maximized. Cohen (4) and Savage and Stolaroff (24) have discussed the problems of adequate supervision, stressing such points as selection of patients, preparation, setting, control of the patient during and afterwards, experience in handling LSD therapy, and availability of measures to counteract the drug effects (chlorpromazine or amobarbital). Experience with these drugs indicates that such measures will minimize the incidence of complications.

In this context it is probable that the five cases discussed above would not have encountered adverse after-effects if their drug use had been under supervision. Adequate supervision would have meant that some of the students would not have been given the drug in the first place, because of their psychiatric status; that others would not have been given the drug so often; and the remainder would have had their panic reactions under the drug explained and terminated at once.

From a psychodynamic point of view, it can be noted that all five cases present features suggestive of serious identity conflicts. In Case 1 the student had trouble as a child in discerning cues as to parental approval or disapproval. This led to difficulty in achieving meaningful self-esteem from his everyday interactions, to difficulty in interpreting what others thought of him, and finally to attempts to avoid the whole problem of "not caring" what others thought. The last escape was to have been to leave the culture and go to the Far East to "contemplate." In Case 2 the identity conflict took the form of homosexual fears and concern over his masculine identity. Case 3, in his ambivalent rebellion against family tradition, attempted to resolve his vocational and identity conflicts by relinquishing future plans and accepting the identity of "black sheep" and "granddaddy of student users." Case 4 suggested an active-passive conflict: he was active on campus and yet suffered from symptoms amounting to a paralysis of action; he chose an engineering major to provide "discipline" for himself out of concern that he might regress toward nonpurposeful behavior and a "useless routine"; unable to make a vocational choice he finally decided to postpone a career commitment by electing to accept the two-year government position. Case 5 was similar to Case 2 in having had homosexual fears. His excessive religious concerns may have been a defense against overwhelming feelings of insignificance (complete "identity-diffusion" as noted by Erikson [11]).

Identity problems are quite common in the college-age group, so it is not surprising to find some students using potent

agents such as LSD and peyote in an attempt to resolve these conflicts. The relatively dramatic difficulties that can ensue are presented in Cases 1, 2, and 4. Case 3, however, presents a more subtle problem and, in fact, it is controversial whether such an outcome is an "adverse" effect. It is similar to the cases mentioned earlier by Blum (1) and brings to mind the comments of Cole and Katz, "...If a person were to become more relaxed and happy-go-lucky, more sensitive to poetry or music, but less concerned with success or competition, is this good?..." (8, p. 760). McGlothlin (21) has discussed this point at some length using the natural history of peyote-taking among the Indians as an illustration. He points out that the goals sought by the present groups of drug-users are more in line with contemplative Eastern philosophy than action-oriented Western thought, and he regrets that our society has, for the most part, turned the search for better chemical escapes (better than alcohol) over to juveniles and beatniks. The choice between the two poles—action and passive contemplation—or some point in-between, is a decision each individual must make for himself. It can be reasonably argued, however, that one who uses drugs to avoid the choice or to shortcut the process is more likely to find himself in a psychiatric hospital than in Nirvana.

Since there is no way of knowing how many persons have used the hallucinogenic drugs on their own or whether all the bad outcomes have come to professional attention, it is not possible to compute the actual incidence of prolonged adverse effects. There has been little in the way of statistical data on student drug use in the professional literature. Pearlman (22) in a recent report surveyed prior and ongoing attempts to get reliable figures and gave the results of a questionnaire sent out to 2,270 seniors at Brooklyn College. The survey, which had a 55 per cent return rate, yielded a figure of 6.3 per cent who had used drugs on their own, 60 per cent who were one-time or occasional users. Two-thirds of the drug-takers who listed what drugs they have tried reported only marihuana. However, since over one-third of the users failed to specify which drugs they had used, this figure must be interpreted with caution. One should also keep in mind that the situation at a college where 90 per cent of the students live at home may be very different from that at a mainly residential college. Data are needed from different kinds of colleges and through techniques other than anonymous questionnaires. Two promising on-going projects appear to be the five-college study in New York City by Phillip and Pearlman and a study on several West Coast campuses under the direction of Blum.

Two other factors in the discussion of adverse effects need to be mentioned. First, there is always the possibility that the hallucinogenic drug-taking was begun when the individual already felt some decompensation taking place. The drug use then becomes a more-or-less desperate attempt to stave off such impending psychological disaster, and any adverse effect which shows up might be due more to the course of the pre-existing pathological state than to any new stress from the drug. Second is the question whether hallucinogenic drugs were actually taken (3). Since we are discussing individuals who are using drugs from unknown sources, in unknown amounts, of unknown purity, it is quite possible that the drugs were of a different class than the taker has assumed. Since there is presently no test for detecting the presence of hallucinogenic drugs, hours after they have been taken, this possibility must remain a cautionary factor in discussing the etiology of the psychiatric problems that arise from unsupervised use of such drugs.

SUMMARY

The current wave of unsupervised hallucinogenic drug use has led to some pro-

longed adverse effects. The paper reviews some of the factors that have brought about this drug fad, comments on recent published reports of adverse reactions from such use, and presents five additional such cases. The five cases were gathered from a study of hallucinogenic drug use at a private northeastern university. The cases reported involved a depressive reaction, a severe paranoid and anxiety state, persistent hallucinosis, a case of asocial acting out, and an instance of worsening of pre-existing psychiatric illness. The latter two were seen as illustrating the subtle dangers that can follow indiscriminate drug use. The cases are also discussed in the context of the drug use as an attempt to solve identity problems.

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