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Illicit LSD Users: Their Social Backgrounds, Drug Use and Psychopathology

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This study compared 100 illicit LSD users and 46 matched non-users as to social background, drug use and personality. The LSD users were mainly single males, under 25, and from the two highest social classes. The LSD users were also underachievers. The majority frequently used psychoactive and hallucinogenic drugs as well as LSD and hence were multihabituated. Diagnoses of conduct disorder and psychosis were more frequent in the illicit user group, 96 percent of whom had abnormal MMPI records. There were also strong indications that much of the psychopathology pre-dated LSD use.

PRIOR to 1960 there were almost no reports of illicit LSD use (Smart and Bateman, 1967), but since 1965 numerous reports of usage have appeared. Studies have been made of the extent of usage in various college populations. For example, Pearlman (1968) found that only 2 out of 1,245 students at Brooklyn College had used LSD, but Imperi et al. (1968) found that 7 percent of students at Wesleyan University and 2 percent at Yale had used LSD. However, these studies contain little information about the social backgrounds of LSD users, their personality characteristics, their motivations for LSD use, or their use of other types of drugs. This paper reports a study of these variables in illicit LSD users and presents comparisons

with a sample of non-users of the same age, sex, and social class background.

Most of the available information about LSD users has been drawn from studies of persons with adverse reactions, or from small, biased samples of users. A recent review by Smart and Bateman (1967) of reported unfavorable reactions found that these reactions occurred mainly in males under 25, many of whom were college students or former students. Unfortunately, none of the studies of adverse reactions clarified the reasons for taking LSD nor the extent of drug use in those affected. Of course, it is not known whether those with adverse reactions are representative of the total population of LSD users. It is generally assumed that LSD users are mainly

middle class males who experiment with LSD for "kicks" or recreation but no adequate studies have made this clear.

Blum's study of LSD users (1965) did not depend upon persons with adverse reactions to LSD. However, it was conducted before the widespread illicit use of LSD and even before possession of LSD had become illegal. In addition, Blum's studies were made, primarily, with persons who took LSD in medically protected settings, i.e., in psychotherapy or in research projects. Only 12 persons were studied who obtained LSD on the black market. Blum found that this "informal black-market sample" constituted a single social group whose members often took LSD together in a "party" setting. Their LSD use was "infrequent" and all members of the group used other drugs as well. Unfortunately, neither extensive data on the nature of drug use other than LSD nor any indications of age and social characteristics were given. Of course, this small sample may differ substantially from the present population of illicit users in general drug use and in many factors of social background as well.

A study of 21 "acidheads" (Blacker et al., 1968) at the Langley Porter Neuropsychiatric Institute found that all were from middle class backgrounds. However, this study was concerned mainly with abnormal neurological findings, chiefly from EEG recordings.

A recent study by Ungerleider et al. (1968) compared 25 LSD users with adverse reactions with 25 users without adverse reactions. However, those without adverse effects were all members of the same club devoted to drug taking. All were former drug addicts and ex-criminals but were working at tilling the soil. It is clear, then, that this group of LSD users was a select group, if only by virtue of their former drug addiction and criminality.

There were several main concerns in this study. An important aim was to determine the social and personality characteristics of the LSD users and to compare them to a matched sample of non-LSD users. Another concern was to understand the nature and extent of their use of a variety of drugs such as alcohol, tranquillizers, barbiturates

and marihuana. It is uncertain, for example, whether there are persons who use only LSD or whether they use a wide variety of psychedelic and psychoactive drugs. Because the frequency of adverse reactions to LSD is unknown, questions were asked about these reactions and about the general subjective effects of the psychedelics. An attempt was made to determine the motivations for LSD use and the manner in which usage began. More general information about intelligence, personality and psychological disturbance was also collected.

METHOD

Selection of the LSD Users and Non-Users. In all, 100 hallucinogenic drug users were selected for study. These were persons who had taken LSD bought on the illicit market; those who had taken LSD only as a part of psychiatric therapy or as a participant in drug research were excluded. Although users who had LSD only on one occasion were included, most users had taken it more often (and the range was from 1 to 400 occasions). No attempts were made to select people who had tried only LSD, and the majority of users studied had sampled a variety of hallucinogens, including marihuana, STP, mescaline and many other drugs as well.

Ideally, we wished to make a random selection from the total population of LSD users. However, neither the size of the population nor any of its demographic and psychological characteristics are known, beyond the oft repeated statement that they were predominantly young and middle class. Of course, under these circumstances it was impossible to know whether an unbiased sample had been obtained. To partially compensate for the possible biases involved in non-random sampling, we attempted to obtain as many different types of LSD users as possible. Special efforts were made to include users who were very young (under 15), very old (over 25), working full-time, in university full-time, or in high school full-time. The LSD users were obtained by contact with informants who knew LSD users prior to the initiation of the project. These users were paid \$5.00

for their participation in interviews and psychological tests.¹

To provide comparative data for the drug users, 46 non-user controls were also studied. To recruit non-users, the interviewer gave a brief introductory presentation about drug-related research at high schools and universities. Students were asked to volunteer, and were informed they would be paid \$5.00 for their participation. The non-users were also recruited through job placement agencies. Of those willing to participate, 46, similar in age, sex and social class background (i.e., occupation of father), were selected. A small number of them had tried hallucinogenic and psychoactive drugs, especially marihuana, but none had tried LSD.

Detailed information was collected on social and demographic characteristics, including age, sex, marital status, social class background, occupational status, education level, I.Q., and drug use for both groups.

The Structured Interview. Both groups participated in a structured interview concerned with their social and demographic characteristics and their drug use. The interview included questions concerning age, sex, marital characteristics, education, religion, ethnic origin, and social class. Questions were also asked about the use of a variety of drugs. These drugs included alcohol, tranquilizers, barbiturates, anti-depressants, stimulants, and the hallucinogens such as LSD and marihuana. Basically, three types of information about drugs were being sought: information on (1) frequency of usage, (2) the source from which the drugs were obtained and (3) the perceived effects of the drug, both adverse and beneficial.²

The last area covered by the questionnaire concerned contacts with mental health agencies. Questions were asked about the frequency of consultations with psychiatrists, psychologists, mental health clinics and mental hospitals, and the reasons for these consultations.

The interviews were all conducted by

the same person. Because of her relative youth, empathy with young people (including drug users), and certain natural habits of dress, life style and deportment, the interviewer was especially effective in gaining the co-operation of both users and non-users.

PSYCHOLOGICAL TESTS

Otis Quick-Scoring Mental Ability Test. The Otis Quick-Scoring Mental Ability Test (Otis, 1937) was used as a measure of general intelligence. The raw scores can be transformed into IQ scores, and norms are available for age levels 11 to 17 and for 18 or over.

The Thematic Apperception Test. The TAT has been found (see Murstein, 1965, for a review) to be a valid instrument for measuring the fantasies of individuals. The TAT requires that the person tell "dramatic" stories for each of a series of pictures. These stories are to contain a beginning and an ending and to emphasize what the people are thinking and feeling.

Detailed scoring systems are typically not used for the TAT and it is used more as a method of clinical inquiry than as a test. Usually, themes in the stories are scored and special note is taken of themes which recur in several stories. As has been stated "a subject must be so preoccupied with a theme that he feels impelled to repeat frequently in response to pictures that bear no necessary relationship to it." (Pope and Scott, 1967:179).

The purpose of giving the TAT in this study was to investigate some of the conflicts and personality dynamics of the LSD users, their needs, desires, and methods of coping with them.

The Minnesota Multiphasic Personality Inventory. The MMPI was administered as an objective test of personality. It is characteristically used as a diagnostic instrument, providing information on mental stability, neuroticism, and psychoticism. This test provides information on three validity scales, on 8 clinical scales—hypochondriasis, depression, hysteria, psychopathic deviate, paranoia, psychasthenia, schizophrenia, and hypomania, and two non-clinical scales—masculinity-femininity

¹ All of the interviews and psychological testing were conducted by Karen Bateman.

² The complete questionnaire will be sent on request to the authors.

and social interest. Scores on all of these are converted into T-scores and then placed in profiles for comparison with normative populations.

RESULTS

Social and Demographic Characteristics

Age and Sex. The age range for the 100 LSD users was from 15 to 37 years and for the non-users 15 to 30 years. However, 66 percent of the LSD users and 59 percent of the non-users were between the ages of 17 and 21. The mean age was 20.36 years for the LSD user group and 20.74 years for the non-user group. Eighty-one percent of the LSD users and 78 percent of the non-users were male. There was no significant difference between the groups in age and sex.

TABLE 1. AGE DISTRIBUTION

Age	LSD Users	Non-Users
15-16	6	2
17-18	26	13
19-20	27	10
21-22	22	8
23-24	7	6
25-26	9	5
27-28	1	0
29-30	1	2
..	..	..
37	1	0
Mean	20.36	20.74

Marital Status and Number of Children. As expected, because of their age, most LSD users were single (87%). Marriages among the remaining 13 percent of the users had proven to be relatively unstable, with about half ending in divorce or separation. There was no significant difference between the LSD user group and control group in marital status. The number of married control subjects was very small (4 of 46) but none were divorced or separated.

A significantly greater proportion of the LSD user, than the non-user, population had children. When data on marital status and number of children are combined, it is seen that of the 12 LSD users who had fathered one or more children 8 were single, 3 were divorced or separated, and only one was married. In the control group

only one person had a child and he was married.

Place of Birth and Ethnic Origin. The majority (80%) of the LSD users were born in Canada but fewer than 50 percent were born in Toronto. However, there was no significant differences in place of birth between the LSD users and controls. Few differences were found between the LSD users and controls in ethnic origin, and both were predominantly of Anglo-Saxon origin (parents born in the British Isles). (LSD users: 57% and controls: 63% Anglo-Saxon).

Religion. Slightly over half of both groups were Protestant, and the proportions of Catholics and Protestants were not different. However, there were twice as many Jewish LSD users as non-users (18 compared to 4).

There was a small but noticeable number of LSD user subjects ($n=7$) who had converted from their family religion to Zen Buddhism. Most of these subjects were originally of Protestant religious background. No similar incidence of conversion was reported by the control subjects.

Despite the similarities in religious background, there was a significant difference between the LSD users and controls in practicing their religion ($p<.01$), defined as attending a religious service once per month or more. Twelve percent of the LSD users were practicing a religion as compared to 34.8 percent of the controls. Most of the LSD users who were regularly attending church were followers of Zen Buddhism (7/12), while all of the controls were practicing their family religion.

Father's Education and Occupation. The LSD users and non-users were matched for social class via occupations of fathers. In both groups a large number of the fathers were well educated (27% of the fathers of LSD users and 30.4% of the fathers of control subjects had attended university). Over half of both groups had completed four years of high school.

The data concerning father's occupation was first classified according to 5 broad categories, (1) professional, (2) managerial, (3) proprietorial, (4) white collar, and (5) blue collar, but there were no significant differences between LSD user and

control subjects. As would be expected from the high education level of many fathers, over a third of fathers of both groups fell into the highest occupational categories, professional and managerial. Only about 20 percent were categorized as blue collar workers.

Since the five occupational categories did not systematically take account of the income, and education involved in certain occupations, the data was classified according to Blishen's (1958) Occupational Class Scale. This occupational scale included 343 occupations ranked on the basis of average years of schooling and average income for those in the occupation. Because the responses of the subjects were more general than the occupational titles listed by Blishen, his 7 occupational classes were collapsed to 5. This was achieved by combining classes 3 with 4, and 6 and 7.³ Again, no significant difference was found in occupational classes between fathers of LSD users and controls. Almost half of the fathers in both groups fell into classes 1 and 2, using this scale (47% of the LSD user group and 47.8% of the control group—Table 1).

Education and Occupation of LSD Users

³ Since no alteration was made in the relative ranking of occupations and Blishen's classes were arbitrarily defined, it was felt that this modification would not distort the data.

and Non-Users. The LSD users had significantly less education than did the non-users. Only 54 percent of the LSD users had completed at least 4 years of high school compared to 73.9 percent of the non-users.

The data on present occupation for both groups was divided into three categories—employed, unemployed, and student. Almost all of the controls but only 30 percent of the LSD users were students. Very few of the remaining LSD users held steady full-time jobs. Thirty-eight percent of the LSD user group were, at the time of testing, unemployed and about a third of those employed worked part-time.

For comparative purposes the percentage of subjects, by occupational category of father, who were students and age 15 to 24, was computed for each group and for the population of Ontario. The non-user control group had a higher percentage of students in every occupational category than was found in the population of Ontario. The LSD users had a lower percentage of students in each occupational category. They were extremely low compared to the population of Ontario in the managerial and blue collar categories.

DRUG USE

Alcohol. The majority of both groups drank alcoholic beverages but few drank

TABLE 2. OCCUPATION OF FATHER AND PERCENTAGE OF THEIR CHILDREN, AGE 15-24,^a WHO ARE STUDENTS

Occupation of Father	LSD Users		Non-Users		Ontario ^b	
	% of Fathers in Occupation	% of Students	% of Fathers in Occupation	% of Students	% of Fathers in Occupation	% of Students ^c
Professional or Technical	17.65	66.66	20.51	87.50	18.52	80.10
Managerial	29.41	16.00	23.08	100.00	7.88	71.86
White Collar	25.88	45.45	25.64	100.00	19.44	61.45
Blue Collar	21.18	5.55	28.20	90.90	54.16 ^d	55.53
Dead or Do Not Know	5.88	60.00	2.57	100.00		

^a Subjects above 25 were not included (LSD users, n=85; Non-users, n=39; Ontario, n=369, 357).

^b Census of Canada 1961, Vol. II, Part: 1, Table 81.

^c Only children living at home included.

^d Farmers and farm workers not included.

frequently. More than 50 percent of both groups fell into the lowest two categories—rarely (twice per month or less), and never. However, almost twice as many non-users of LSD as users drank as frequently as three times per week.

Psychoactive Drugs. Most LSD users had frequently taken tranquilizers, barbiturates, anti-depressants and stimulants. About 85 percent of the LSD users but only 39 percent of the non-users had used these psychoactive drugs.

Seventy percent of the LSD users had taken stimulants, the majority more than six times; only 20 percent of the non-users had used them and most fewer than three times. Tranquilizers had been taken frequently by almost half of the LSD users but by few of the controls. Many more of the LSD users than non-users had taken barbiturates (33% and 15.22%) and anti-depressants (28% and 0%). However, these latter two types of drugs were less popular among LSD users than stimulants or tranquilizers.

As would be expected, LSD users and non-users obtained their drugs from different sources. Sixty percent of the psychoactive drugs taken by non-users were obtained from a physician compared to only 25.4 percent taken by the LSD users. Friends were the most common source of drugs for the LSD users but few non-users obtained drugs in this manner.

The reported motivations for use varied for the psychoactive drugs. Replies to the question "Why were these pills taken?" were categorized separately for each drug. Large differences in reported motivation between LSD users and controls were found in the use of stimulants. The majority of LSD users took stimulants to get "a high," or for "kicks," or curiosity, while the non-users reported taking them primarily to stay awake, ease fatigue, or for extra energy. While more LSD users than non-users had taken the other drugs for "kicks," or curiosity, the most frequent reasons for both groups were closely related to their medicinal use; (i.e., tranquilizers were taken primarily to keep calm, and because of nervousness or anxiety; barbiturates were taken most frequently to relieve pain or for sleep).

Marihuana. All of the LSD users had also used marihuana and the majority many times (61% had used marihuana over 100 times). While 28.26 percent of the controls had tried marihuana, most of them had used it only a few times.

In reply to the question "What were the effects (of marihuana) for you?" the LSD users most frequently reported a feeling of relaxation, sometimes compared to the effect of a tranquilizer. Mild euphoria was the most common effect. Other notable effects in order of frequency were increased sensitivity, primarily to colors and sound, self or other insight, and distortions of time and space. However, the most frequently reported effects given by the non-users were increased sensitivity, primarily to colors and sounds, mild euphoria, and distortions in space and time perception. The most noticeable difference between the LSD users and non-users was that only one of the 13 non-users who tried marihuana reported a relaxing effect, while this was the most frequent effect for the LSD users.

Both groups were also asked for what they felt to be the benefits of marihuana. For the LSD users, the replies given, in order of frequency, were comparable to the reported effects, and only 7 percent reported no benefit. However, 5 of the 13 non-users who had taken marihuana said that there were no benefits in smoking marihuana.

LSD USE (LSD USERS ONLY)

Frequency of Use. The range in the number of occasions subjects in the LSD user group had taken LSD was very large, 1 to 400 times. However, most users had taken it fewer than 10 times (median=7.27 occasions), while 11 percent had tried it only once. Compared to the use of marihuana the majority of these subjects had used LSD much less frequently (61% of them had used marihuana more than 100 times).

Effects and Benefits of LSD. The effects of LSD most frequently reported by the LSD user subjects concerned distortions or changes in their perception of the environment. Many subjects had experienced visual hallucinations and enhanced perception of colors and sounds. Colors in particular seemed to be brighter. Some reported the

distortion of objects, space, and time or a sense of unreality, as if they were living in a dream world. Less frequently observed effects concerned the abilities of the individual to concentrate and to understand certain facets of themselves and their environment. LSD reportedly gave some deeper self-insights, increased abilities to meditate and to focus their attention, and increased understanding of situations and other people. Finally, a few reported that LSD produced a mild euphoria.

The LSD users were also asked what they felt were the benefits of LSD for them. The most frequent reply attributed a therapeutic quality to the drug. For example, many claimed that LSD helped them to work out their problems, better adjust to society, or improve interpersonal relationships. Other reported benefits of LSD were very similar to the effects mentioned above, such as self-insight, increased awareness and understanding of situations. Surprisingly, 11 percent of the subjects stated that there were no benefits from using LSD.

Adverse Reactions. In answer to the question, "Did you have any unpleasant effects from LSD?" 63 percent of the users replied, "Yes." The most common complaint was an overwhelming state of fear or panic, sometimes involving terrifying hallucinations. Other reported adverse reactions, in order of frequency, were suicidal thoughts, paranoia, and physically ill effects. A few reported a recurrence of effects and/or prolonged reactions but none reported convulsions.

Motivations for LSD Use and First Contact. About half (56%) of the LSD users felt that they had initially used LSD out of curiosity. A much smaller number (17%) said they began to use LSD because their friends used it. Eleven percent of the subjects reported that they had heard it was "better than" marihuana, which they were smoking at the time, and so had tried it for this reason. About half received their first LSD from friends and the remainder from other illicit sources.

PSYCHOLOGICAL RESULTS

Intelligence. There was no significant difference between the LSD user group and the control group in mean I.Q. (Otis

Quick-Scoring Mental Ability Test, Gamma Form AM). The mean for the LSD user was 115.13 and 117.50 for the controls.

Both populations were well above average in intelligence. When the data was classified according to Wechsler's system (Muller, 1966), 42 percent of the LSD user group and 50 percent of the control group fell into the highest two categories, superior and very superior. Only 2 percent of the LSD users and none of the controls were classified as dull normal, slightly below average.

Cronbach (1960) presented the educational expectancies at various levels of mental ability. The mean I.Q. of freshmen in a typical four-year college was 115 and the mean for college graduates 120. In our groups, the LSD users' mean educational level was the end of grade 11, approximately, and the beginning of first year university, approximately, for the controls. Age must be taken into account here since a large number in both groups were younger than college age (i.e., below 19) and, therefore, would not be expected to have this educational level. However, there was less than one year difference in mean age between the groups. With this consideration in mind, it would appear that the control group closely approximated or slightly exceeded their expected education level while the LSD user group was below the expected level.

MMPI: Validity Scales. In determining the validity of the MMPI profiles three special scales are scored—these are the L, F, and cannot say (?) scales. As usual, a profile was considered to be invalid if the L (Lie) score was above 7 (raw score), and/or the F (False) score greater than 17 (raw score), and/or a (cannot say)? score above 50 (Dahlstrom and Welsh, 1960). According to these standards 22 of the 100 LSD users' and 3 of the 46 non-users' MMPI profiles were judged invalid.

MMPI: Clinical and Non-Clinical Scales. The LSD users had higher scores than the non-users (not including invalid profiles) on scales Sc—schizophrenia, Ma—hypomania, Pd—psychopathic deviate, Mf—masculinity-femininity (for males only) ($p < .001$) and Hy—hypochondriasis ($p < .01$). Of these, Ma, Pd, and Mf (for

males only) had mean T-scores over 70, above the "normal" range of variance. The mean T-score on the Sc scale for LSD users was very close to 70 (69.86).

MMPI Profile Analysis: Differential Diagnosis. To analyze the profiles of the LSD users and non-user controls a system of differential diagnosis suggested and clinically validated by Meehl (Welsh and Dahlstrom 1956) was adopted. His system involved a rapid inspectional diagnosis which first divides the profiles into normal and abnormal. A second inspection provides a differential diagnosis of abnormal patterns into three categories, (1) psychosis, (2) psychoneurosis and (3) "conduct disorder."

Ninety-six percent of the LSD users' profiles were judged to be abnormal, that is, having a score of 70 or above on one or more of the eight clinical scales. The 22 invalid profiles, all of which were abnormal, were omitted from further classification. A large number of these abnormal (valid) profiles did not fit the suggested criteria for any of the three diagnostic categories. However, 24 percent of the LSD users clearly followed the criteria for "conduct disorder." Another 5 percent of the LSD users' profiles displayed a psychotic pattern with an elevated right-hand end of the profile curve and, in particular, a peak at Sc (schizophrenia). Psychoneurosis was almost non-existent in this group. Only one percent of the profiles clearly displayed this pattern.

The profiles of the non-users were very different. Only 46 percent of their profiles were judged abnormal. Three of the normal profiles were invalid. Again, a large number of the abnormal (valid) profiles were unclassifiable. However, 11 percent (5) in the non-user group were categorized as psychosis. Psychoneurosis was also very low in this group. In contrast to the LSD users, only 2 percent (1 person) of the non-users' profiles displayed the "conduct disorder" pattern.

The large number of abnormal (valid) but unclassifiable profiles occasioned another inspection. Among the LSD users, a fourth type of profile configuration, for which no label seems adequate, was common to 11 percent. This pattern included 3 peaks, one on the Ma (hypomania) scale, another on the Pd (psychopathic deviate) scale and the third on the Sc (schizophrenia) scale. Only one (2%) of the non-users displayed this pattern. Individuals with peaks on the Pd and Sc scales were described by Dahlstrom and Welsh (1960) as "unpredictable, compulsive, and non-conforming" and they had educational and occupational histories characterized by "underachievement, marginal adjustment, and uneven performance." Those with Pd and Ma peaks were described as "over-active, impulsive, irresponsible, and untrustworthy, shallow and superficial in their relationships," with "easy morals, readily circumvented consciences, and fluctuating ethical values."

TABLE 3. MEAN SCORES AND STANDARD DEVIATIONS ON MMPI CLINICAL AND NON-CLINICAL SCALES

Scale	LSD Users		Non-Users	
	Mean	Standard Deviation	Mean	Standard Deviation
Hs	53.87	9.89	52.30	6.62
D	58.40	11.09	56.67	11.97
Hy	61.12*	8.41	57.19	7.84
Pd	70.79**	8.87	57.00	8.94
Mf (males)	74.03**	9.01	65.15	10.94
Mf (females)	43.67	8.58	48.00	12.73
Pa	59.26	9.42	56.58	10.15
Pt	61.76	9.05	58.65	10.86
Sc	69.86**	9.14	61.65	12.65
Ma	72.17**	10.03	62.09	9.47
Si	50.56	8.77	51.40	9.24

* $p < .01$.

** $p < .001$.

MMPI Scales and Frequency of LSD Use (LSD Users Only). Since there was a wide range in the number of times the user group had taken LSD (1–400 times), and 11 percent had used the drug only once, scores on the MMPI clinical scales which had T-scores over 70, Ma, Sc, and Pd, were assessed in terms of the number of times LSD was taken. No significant differences were found among groups on these scales.

Personality (TAT), Fantasy. The 10 TAT stories given by each subject were scored according to a check list empirically derived by Eron (1950) with the addition of 12 new themes by the authors. There was a small but significant difference between the groups in productivity of themes ($p < .05$). The mean number per subject for the LSD user group was 22.78 and for the controls 20.57.

Themes of disequilibrium in parent-child or partner relationships were frequently given and common to both groups. In particular, the theme given most often was Parent Pressure—where the parent or parental figure was compelling, censoring, quarrelling with or punishing the child. The other popular themes with a total frequency above 100 were Aspiration—hoping for the future, dreaming of the future, and determination, and Vacillation—putting off a task, loitering, or wasting time. Again, these latter themes were common to both groups.

When the data for the LSD users and controls on the 35 most popular themes (total frequency above 25) were compared, significant differences were found for only three. These were (1) Drug Use, ($p < .001$), in which the subject depicted characters taking drugs, showing concern over their use, or the effects of drugs, (2) Illicit Sex, ($p < .01$), extra or pre-marital heterosexual relationships and (3) Behavior Disorder, ($p < .025$), personal maladjustments, neurosis, psychosis, withdrawal.

Since many of the LSD user subjects participated in a subculture in which drug use and sexual freedom were important and accepted practices, the higher frequency of such themes in comparison with control subjects would be expected. The higher frequency in Behavior Disorder, themes

for the LSD user group tended to coincide with the MMPI results, where they also showed elevations on a number of the diagnostic scales.

Treatment for Mental Health Problems. About half of the LSD users (51%) had undergone treatment or consultation for mental health problems, compared to only 17.4 percent of the control subjects. The most frequent type of aid sought was from a psychiatrist, and usually 5 visits were reported.

Twenty-two percent of the LSD users had required extensive periods of therapy, involving more than 10 visits to a psychiatrist, psychologist, or mental health clinic. Five of the LSD users had been in-patients in a mental hospital. Few of the controls (6.5% or 3 subjects) had made as many as 10 visits and only one had been a patient in a mental hospital.

The reasons for consultation varied widely; however, there were noticeable differences between LSD users and control groups. LSD users were frequently seen for behavior disorders and treated for excessive anxiety, depression, hallucinations, paranoia, suicidal tendencies, and homosexuality. Family problems were also frequently stated to be the reasons for consultations. In most cases the subject did not elaborate; however, it appeared that family relationships were not harmonious; and parents usually instigated consultations for the LSD user. In contrast, school problems were the most frequent reason given by the controls; they had difficulties in their school work, were excessively tense over exams, unable to concentrate or unable to complete assignments. Only 2 of the LSD users reported visiting a mental health facility because of their LSD experience.

DISCUSSION

The LSD users in this study shared certain social, personality and demographic characteristics, as well as drug use habits. Most were single males, under 25, and from families in the two highest social classes. Their parents have obtained better educations than the population as a whole and their fathers have predominantly professional and managerial occupations. Most LSD users were not employed full-time

(80%), although only 30 percent were students. Compared to the non-user group, the LSD users less frequently attended church and were less often in school or employed full-time. There were no differences between the two groups in age, sex, or social class (the matched variables) nor in place of birth. However, twice as many LSD users as non-users were Jewish.

Only tentative suggestions can be drawn from the data about social class and drug use because of possible bias in selecting subjects. In this study almost half of the subjects were from the two highest social classes compared to only about 11.6 percent (Porter, 1965) of the general population. Only 7 percent were from the lowest class compared to 28.9 percent (Porter, 1965) in the general population. LSD use, then, may have a social class pattern similar to that of marihuana and psychoactive drugs, but different from that of heroin (Chein, 1956) and solvents such as glue (Press and Done, 1967), which are used primarily by lower class persons. At present, reasons for LSD use among young adults in the upper social classes are unclear. Factors of availability, affluence, intellectual curiosity, can be suggested, but none seem especially compelling as explanations. Most believed that they began to use LSD because of curiosity or because their friends used it. Perhaps this sort of curiosity is essentially a middle class phenomenon. Reiff (1966) has noted that middle class persons in general are motivated to actualize their selves, and part of the ideology of LSD use is that it aids in self-exploration and self-enhancement. Once again, selection biases may have contributed to the social class differences.

The data for I.Q. and education, when taken together, indicates that LSD users are underachievers. Their I.Q.'s and ages were similar to the non-users but they had achieved several years less education. The LSD users also had a low mean education level for the mean I.Q. when compared with Cronbach's (1960) educational expectancies for various levels of mental ability. Although most had dropped out of school (70%), many said that they planned to return soon. It may be that eventually this underachievement will be

overcome. However, it seems that the heavy use of hallucinogenic drugs is incompatible with school attendance for most LSD users.

The LSD users had taken hallucinogenic drugs far more often than the non-users. Some of the latter (28%) had tried marihuana but none had tried LSD, and marihuana seems to have far greater general acceptance. The LSD users seemed to get relaxation and euphoria from marihuana, while the non-users experienced mainly sensory modifications. It would be interesting to know whether these effects are produced by different expectations and whether their nature is related to continuing usage. LSD users more often reported substantial benefits from marihuana (relaxation and euphoria) and 5 out of 13 non-LSD users found no benefit in marihuana.

LSD users reported the usual visual and emotional effects of LSD, and many also attributed therapeutic qualities to the drug. Most claimed that LSD facilitated some social or personality adjustments. However, about 11 percent reported no benefit from using LSD. As well, more than 60 percent reported adverse reactions from LSD, mostly involving panic or frightening hallucinations. Possibly their group identifications force LSD users to take LSD even when their prior experiences have been neutral or unpleasant.

Although this began as a study of LSD users, it is clear that multihabituation is far more common than devotion to one or a few drugs. All of the LSD users had tried marihuana—the majority of them on many occasions, and 11 percent said that they tried LSD because it was "better than marihuana." In addition, many had used amphetamines, tranquilizers and barbiturates for "kicks," curiosity or euphoria. In fact, alcohol seemed to be the only readily available drug not regularly used for mood or perceptual modification. The variety of drugs taken by the LSD users suggests that they are not seeking any particular perceptual or emotional change. Amphetamines, LSD, and marihuana differ so widely in their particular effects that the multihabituated user must be seeking a general change in perceptual or feeling states. Perhaps,

their own selves are aversive and they aim by drug use merely to change but not to change in any special way.

Some indirect support for this proposition is provided by the psychological results. There was an extremely large number (96%) of abnormal MMPI records. However, many of these profiles did not fit into the categories used for differential diagnosis. The most usual diagnosis given was conduct disorder (24% of the LSD users), followed by psychosis (5%). There were almost no psychoneurotic patterns in the records. Psychopathology was also reflected in the TAT results where many stories of behavioral disorders were found, and in the data on previous psychiatric treatment. Half of the LSD users had been treated, many extensively, for psychological disturbances. It might be thought that their disturbances were created mainly by drug use but this seems not to be the case. Most of the psychiatric consultations predated LSD use and only a very few were concerned with drug-induced problems. As well, no relationship was found between pathology on the MMPI and number of LSD ingestions. That is, the least frequent user of LSD showed no less psychological disturbance than the chronic user. The conclusion must be that the LSD users show far greater psychological disturbance than the controls and that much of this disturbance predated drug use. Perhaps, the use of hallucinogens is mainly a response of middle class young people to emotional disturbance.

Another proposition could also be put forward as an explanation for drug use among some of the subjects. A fairly large percentage of the LSD users' profiles were diagnosed as "conduct disorder" and on re-examination a number of the unclassified abnormal profiles showed a pattern of three peaks, Pd, Ma, and Sc. These configurations suggest a tendency toward social non-conformity and rejection of traditional values and restrictions. To some, then, drug taking may be the chosen pattern of expressing their rejection of and deviance from the present social system. If this is the case, the type of drug would be unimportant, as long as it is unacceptable to the larger society. For example, alcohol may

not be popular simply because it is socially acceptable for most adults.

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Occupational Mobility, Life Patterns, and Personality*

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Since behavior is patterned by role expectations, the enactment of new roles in occupational mobility is likely to result in psychological change. This potential source of work attitudes and personality change in adulthood was explored in a longitudinal sample of 69 men from middle- and working-class families. Differential mobility was found to be related to role patterns and attitudes in adulthood and to personality (measured by self-descriptions and ratings) in three time periods; junior high school, senior high school, and adulthood (ages 33-38). The upwardly mobile tended to enter family roles at a later age than the non-mobile and were more orderly in their worklife. Mobile men, especially those of working-class origin, were more involved in the work role than the non-mobile, as expressed in role preferences, job satisfactions, and communal ties to the work setting. The upwardly mobile differed significantly in adolescence from the non-mobile on some aspects of ego functioning—such as impulse control—but personality differences were larger and more pervasive by the time the men reached their mid-thirties. A sense of well-being, autonomy, and effectiveness were associated with upward mobility only in adulthood.

IN most theories and research, students of human socialization and personality have confined their attention to the young. This emphasis can be traced in part to psychoanalytic theory and its assumptions regarding the primacy of early childhood in human development, and to similar limitations in other developmental formulations. Although numerous hypotheses on personal change in adulthood can be derived from interactionist theory—on role and situational change in socialization—research in this tradition has likewise dealt primarily with children. Growing interest in processes

of aging has reduced this imbalance,¹ but recognition of adult experience as a major source of personality change is by no means a new discovery. The philosopher Adam Smith, for instance, once attributed the striking variations between persons in contrasting occupations—such as philosopher and street porter—to their differing occupational experiences.

"When they came into the world, and for the first six or eight years of their existence, they were perhaps very much alike, and neither their parents nor playfellows could perceive any remarkable difference. About that age, or soon after, they came to be employed in different occupations. The difference of talents comes then to be taken notice of, and widens by degrees, till at last the vanity of the philosopher is will-

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¹ For literature reviews, see Neugarten (1963) and Brim (1966, 1969).