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PERSONALITY CHANGE IN LSD USERS*

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A. INTRODUCTION

McGlothlin, McGlothlin, and Cohen (10) found that LSD lowered defense mechanisms and thus caused a feeling of reduced anxiety. Linton, Langs, and Paul (9) also concluded that LSD caused a feeling of passivity. Hoch (5), however, contends that LSD is essentially an anxiety-producing drug when used in therapeutic situations. These conflicting reports concerning anxiety as an effect of LSD are investigated in this study, by means of psychological tests on eight Ss who took LSD. The results of the study by Leary, Litwin, and Metzner (8) caused the hypothesis to be formulated that there are (a) short-term and (b) long-term personality differences in Ss who have taken LSD once. On the same basis, the present study set out to determine whether taking LSD once resulted in any qualitative or quantitative personality changes. Lastly, the investigation was designed to discover whether psychological tests show up any differences in personality or motivation between people who want to take LSD and those who do not.

B. METHOD

1. Subjects

The subjects consisted of male undergraduates who responded to an advertisement in the campus newspaper requesting volunteers for an experiment in psychedelic experiences. A meeting was held during which the subjects were asked whether they would like to take LSD or not. Eleven indicated a willingness, and were designated as Group I (experimental); 11 declined, and were designated as Group II (control). Ss in both groups were 21 years of age or over; and the mean age of Group I and Group II was 23.8 years ($SD = 4.58$) and 22.3 years ($SD = 2.55$), respectively.

2. Procedure

In order that determination could be made of any personality differences between the experimental group and the control group, Group I was assem-

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bled and given the following battery of personality tests: the Stimulus Variation Seeking Scale for Adults (SVSS) which measures perceptual curiosity (11), the Minnesota Multiphasic Personality Inventory (MMPI), the Bell Adjustment Inventory (BELL), the Neuroticism Scale Questionnaire (NSQ), and the Sixteen Personality Factor Inventory (16 PF). The *Ss* were also required to indicate any psychosomatic illnesses they might have had, on a questionnaire compiled by the *Es*.

Two weeks after the Group I initial testing session the *Ss* were recalled, ostensibly so that they could learn the results of their tests. At this time the Hull Body-Sway Test (6) was administered individually to test for suggestibility. The same procedure was followed with Group II.

Eight members of Group I each took 400 micrograms of LSD after the initial test session. The experience took place in a comfortable apartment and was supervised by a psychologist and two experienced volunteer assistants ("acid-heads"). These eight *Ss* and eight control *Ss* were retested at intervals of one week and three months after their drug session in order that it might be determined whether any differences in personality were due to the drug experience or merely to test variance. Four of the drug-takers took a further 400 micrograms after the third testing, and were again retested one week later.

C. RESULTS

In order that determination could be made of any personality differences between Group I and Group II, a *t* test was performed on the SVSS results, and no significant difference was found. The remaining four tests were treated with a one-way analysis of variance. All between-group *F* ratios were significant: $F_{MMPI} = 20.25$, $p < .001$, $df = 1, 198$; $F_{BELL} = 74.80$, $p < .001$, $df = 1, 110$; $F_{NSQ} = 6.95$, $p < .001$, $df = 1, 88$; $F_{16PF} = 3.84$, $p < .05$, $df = 1, 130$. Thus personality differences were found between Group I and Group II on these four tests. Lastly, a one-way *t* test on the results of the Hull Body-Sway Test showed Group I to be significantly more suggestible ($t = 2.17$, $p < .05$, $df = 20$) than Group II. Further *t* test analysis to determine the origin of the significant *F* ratios showed that Group I was higher than Group II on hypochondriasis ($p < .05$) and paranoia ($p < .05$) on the MMPI. On the NSQ, Group I was high on the I scale ($p < .001$), but low on the *F* scale ($p < .05$), and low on the *E* scale ($p < .001$). The highly significant *F* ratio on the BELL derives from six significant *t* values, with Group I being high on home adjustment and masculinity-femininity ($p < .05$), low on health ($p < 0.001$), low on submissive-

ness and emotionality ($p < .01$), and low on hostility-friendship ($p < .05$). Group I was high on the H factor ($p < .001$) of the 16 PF test, high on the M, Q1, and Q2 factors ($p < .05$), and low on the L factor ($p < .05$).

A one-way analysis on variance on the test-retest for the drug-takers yielded only one significant F after a one-week interval, $F_{\text{MMPI}} = 3.46$, $p < .05$, $df = 2, 36$, which resulted from a lowering in the hypochondriasis score ($p < .05$), although a general lowering of all scores to approach the general population norms was evident. As a reliability measure eight Ss from Group II were retested on the MMPI, but their results were not significant. Therefore, the drug-takers' significant result on the MMPI must be attributed to a personality change arising from their LSD experience.

A t test analysis of retest results at the three-month interval, as compared with initial test results, was not significant. By similar analysis the four drug-takers who took LSD again displayed no significant differences on any of the final tests. Their MMPI results, which previously had been significantly different on the first retest, did not record any significant differences after a three-month interval, not even after a further drug experience and final retest.

D. DISCUSSION

A one-way analysis of variance showed significant F s between Group I and Group II on the MMPI, BELL, NSQ, and 16 PF. Thus, there is a personality difference between those Ss who want to take LSD and those who do not. The actual differences in each test have been outlined above, though conjecture as to the interpretation to be given to these differences would seem to be inapposite here. Analysis of the SVSS by t test showed the results to be not significant. Therefore, it is concluded that there is no difference in curiosity, as measured by the SVSS, between Ss who want to take LSD and those who do not, contrary perhaps to what one might have expected.

The eight drug-takers' significant results on the retest of the MMPI after a one-week interval supports the hypothesis that there are short-term personality changes which occur as the consequence of a single LSD experience. It is pertinent to note that the MMPI recorded the only significant short-term personality changes. Thus it may be that LSD, or more generally a transcendental experience, directly modifies any psychopathic tendencies measured by the MMPI, since drug-takers experienced a decrease in these tendencies after the one-week interval.

The general lowering of the MMPI scores at the one-week retest was not maintained, either by subjects who took LSD once ($\bar{X}_1 = 25.8$, $\bar{X}_2 = 15.0$, $\bar{X}_3 = 24.8$, where $\bar{X}$ = the mean) or by Ss who took it twice ($\bar{X}_1 = 20.3$,

$\bar{X}_2 = 16.7$, $\bar{X}_3 = 22.9$, $\bar{X}_4 = 21.1$), in analysis of possible long-term effects. Since the change was observed only in the MMPI, which primarily measures psychopathic tendencies, it may be theorized that the decreased $\bar{X}_2$ value indicates a drop in psychopathic tendencies from what Hathaway and Briggs (4) determine is the higher "student norm," to the lower T scores which he defines as the "social norm." The subsequent return to the former level can perhaps be interpreted as a homeostatic tendency to revert to the former more familiar cognitive organization, which was unaffected even by a second dose of LSD.

Cohen (2) and Huxley (7) have both concluded that the occurrence of anxiety in humans as a consequence of an LSD experience seems largely to depend on what the S is told beforehand. The eight drug-takers in this study were present for an informal lecture outlining the nature of an LSD experience previous to their drug session. The drug-takers experienced no significant change in anxiety as recorded by the anxiety factor on the NSQ. Thus our results support the hypothesis held by Cohen (2), DeShon (3), Abramson (1), and McGlothlin, McGlothlin, and Cohen (10): namely, that LSD is essentially not an anxiety-producing drug. Hoch (5), on the other hand, contends that LSD is an anxiety-producing drug. His data, however, come from the therapeutic situation; so that, while the present data would not support his claims, it may in fact be not the drug itself which is anxiety-producing or otherwise, but merely the situation in which it is taken.

Since the short-term effects of LSD can be clinically measured, as demonstrated by the MMPI, it might be beneficial if clinically orientated tests, such as the Rorschach, were used to measure short-term effects of LSD in future studies. Also of note is the fact that sample sizes were small, and they greatly limited the possibilities for generalization of the data. It is desirable, but difficult, to avoid this.

E. SUMMARY

An experiment was conducted on male university undergraduates to determine by means of authenticated psychological tests whether (a) there are personality differences between Ss who would take LSD and Ss who definitely would not, (b) there are (1) short-term and, (2) long-term personality differences as a consequence of taking LSD for the first time, and (c) there are long-term personality differences due to taking the drug more than once. The results displayed a personality difference between Ss in (a), above, and also showed short-term personality differences, although (b), (2), and (c) above were not demonstrated.

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