The Effect of a Synthetic Marihuana-like Compound on Musical Talent as Measured by the Seashore Test

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THE EFFECT OF A SYNTHETIC MARIHUANA-LIKE COMPOUND ON MUSICAL TALENT AS MEASURED BY THE SEASHORE TEST

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Musicians, particularly members of dance orchestras, are reputed to use marihuana for the purpose of enhancing their musical ability. Piel (*1*), in Life Magazine, reports that in the state of marihuana intoxication "the swing musician ascends to new peaks of virtuosity." Medical writers, however, are inclined to question this belief, and Walton (*2*) states that "there is very little probability that an individual's performance is in any degree improved over that of his best capabilities. As judged by objectively critical means, the standards of performance are no doubt lowered." In an endeavor to discover the cause of the common misapprehension, he says: "There is an increased sensitivity to sound and a keener appreciation of rhythm and timing," but he feels that "these phenomena, as judged by objective criteria, probably do not exist except during the early phases of the drug's effects." He suggests that the release of inhibitions by marihuana may result in bringing latent talents to the surface or in evoking a more intense emotional performance. He also recognizes, with Bromberg (*3*) and others, that a subject's evaluation of his own performance is enhanced.

PROCEDURE

The synthesis of the pyra-hexyl compound (1-hydroxy-3-n-hexyl-6,6,9-trimethyl-7,8,9,10-tetrahydro-6-dibenzopyran) by Professor Adams (*4*) has facilitated the study of marihuana by furnishing a stable drug of uniform potency and consistent effect. Experienced marihuana users report that the psychological effects of this compound are qualitatively identical with those of marihuana. The present experiment was set up to study the effect of this compound on performance as measured by the Seashore tests of musical talents (*5*), in order to determine objectively whether or not marihuana affects musical ability.

The Seashore tests were used because they seemed to offer the most carefully standardized tests available of musical capability. Although they have been criticized for their low reliability and their value in individual diagnosis has been questioned, for group work they are, as Mursell (*6*) says, "outstandingly the most important battery of tests in the field of music."

The six tests are played on phonograph records. The first consists of 50 pairs of notes of progressively diminishing degree of difference in pitch; the subject indicates whether he considers the second note of the pair to be higher or lower than the first. Three other tests are similarly constructed, with differences in loudness, time, and timbre.

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Two consist of 30 double series of notes, in one of which the subject decides whether two rhythm patterns are the same or different, and in the last he identifies by number one note which is changed in the second of two otherwise similar tone patterns.

Twelve healthy white male patients volunteered for the experiment. All were serving prison sentences for violation of the Marihuana Tax Act. One was 47 years of age; the ages of the others varied between 23 and 36 years. They had used marihuana from 3 to 18 years with an average of 9½ years. Of the 12 subjects, 2 were professional musicians and 2 had musical ambitions. Each patient was given the test three times, at intervals of 1 week; twice without any drug, and the third trial 4½ hours after ingestion of 60 mg. of pyra-hexyl compound. This quantity and time were found to produce a "kick" comparable to a satisfying amount of marihuana in most cases, although individual variations were noted.

The average of the results, summarized in table 1, shows improvement in all tests on the second trial and a return to approximately the original level under the influence of pyra-hexyl compound. One exception is seen in the case of rhythm in which the change between the second and third trials is negligible. In general the pyra-hexyl compound seems simply to have obliterated the gain due to practice.

TABLE 1

	Pitch (50)	Loudness (50)	Rhythm (30)	Time (50)	Timbre (50)	Tonal memory (30)
First trial	35.9	39.2	23.4	34.7	41.8	21.2
Second trial	37.2	40.5	24.1	36.7	43.1	23.3
After pyra-hexyl	35.3	39.8	24.2	33.9	41.9	21.8

Average number correct: 12 patients.

The Seashore test measures only sensory musical capacity and leaves out of account factors such as motor speed and coordination, release of inhibitions and fatigability, which could conceivably influence the playing of present-day music. The subjective reports, however, emphasize the extent of the self-deception brought out by marihuana. Eight of the patients, when asked if they noticed any differences in their own performances, felt sure that they had improved with marihuana; 3 felt that they remained the same, and 1 "couldn't say." Actually, 9 out of 12 subjects achieved lower scores on the third than on the second trials.

Subject D, a professional saxophone player, said after the third trial, "I am convinced I was better * * * I'm sure the medicine helped; I know it does on my horn as I hear the notes more distinctly." He stated that the medicine made him " 'high' but not quite to the

peak—about three-fourths I'd say." His scores, indicating in general a poorer performance with the drug, are shown in table 2.

TABLE 2

	Pitch (50)	Loudness (50)	Rhythm (30)	Time (50)	Timbre (50)	Tonal memory (30)
First trial	33	43	26	39	44	27
Second trial	40	47	24	39	47	29
After pyra-hexyl	33	46	26	35	44	27

Patient "D" number correct.

SUMMARY OF RESULTS

No improvement was observed in the musical capability, as tested by the Seashore measures of musical talents, of 12 former users of marihuana after ingestion of satisfying amounts of pyra-hexyl compound, a synthetic, marihuana-like substance.

Although 9 out of 12 subjects achieved poorer scores after using the drug than on the previous trial, 8 out of 12 expressed the opinion that their scores had improved, and none recognized a loss in efficiency.

CONCLUSION

Pyra-hexyl compound, a marihuana-like synthetic, appears to improve an individual's subjective impression of his own musical ability rather than the ability per se as measured by the Seashore test.

REFERENCES

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DEATHS DURING WEEK ENDED MARCH 18, 1944

[From the Weekly Mortality Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Mar. 18, 1944	Corresponding week, 1943
Data for 93 large cities of the United States:		
Total deaths	9,537	9,949
Average for 3 prior years	9,389	
Total deaths, first 11 weeks of year	113,209	112,524
Deaths under 1 year of age	678	711
Average for 3 prior years	614	
Deaths under 1 year of age, first 11 weeks of year	6,984	8,016
Data from industrial insurance companies:		
Policies in force	66,373,891	65,444,262
Number of death claims	13,891	13,266
Death claims per 1,000 policies in force, annual rate	10.9	10.6
Death claims per 1,000 policies, first 11 weeks of year, annual rate	11.5	10.7