

# Marijuana and behavior; the unfilled gaps

**Mythology abounds in the heated battle over the effects of marijuana smoking on human behavior and society**

by Lawrence Massett

Although the drug bill now working its way through Congress reduces the penalties for marijuana possession (SN: 1/24, p. 102), neither Congress nor the Administration regards the bill as a final settlement of the proper legal status for marijuana.

Scientific research into the effects of marijuana on human behavior has so far provided few definitive answers to the questions figuring in public controversy over the drug. True, there is now agreement among the scientific community that marijuana is not a physically addictive drug like the narcotics; this agreement is reflected in the proposed drug bill, which will remove marijuana from its former legal classification alongside heroin. Yet there remain many questions that must be answered before a completely adequate scheme of Federal regulation for marijuana, or sound public attitudes toward it, can be developed.

It is often held, for example, that marijuana leads to the use of more dangerous drugs like heroin and propels smokers into crime, insanity and social apathy. Harry J. Anslinger, for years head of the U.S. Bureau of Narcotics and presently the United States representative to the United Nations Commission on Narcotic Drugs, recently characterized marijuana as a "scourge that undermines its victims and degrades them mentally, morally and physically."

The public defenders of marijuana, equally outspoken, deny the existence of any such link between marijuana and personal or social debilitation, and claim, as does the popular philosopher Alan Watts, that smoking marijuana

can be "a profound religious experience."

Because the controversy remains vehement and unresolved in spite of its long history, the Government is relying heavily on future research to settle the disputed questions. Perhaps the most important feature of the new drug bill is an Administration-sponsored provision that will enable the Attorney General to revise Federal marijuana regulations at a later date, as scientific evidence accumulates.

To furnish the necessary evidence, the National Institute of Mental Health has begun funding more than 20 research projects into the behavioral effects of marijuana. Many of the questions at which the research is aimed have been investigated before, but in a way that has failed to produce unambiguous conclusions.

The question of whether marijuana smoking is a first step on the road to narcotic addiction, for example, has been the subject of numerous research projects. The most notable recent study, published in 1968 by Drs. John G. Ball and Carl D. Chambers of the Addiction Research Center of the National Institute of Mental Health in Lexington and Dr. Martin J. Ball of the University of Kentucky Medical School, consists of a survey of some 2,000 opiate addicts.

Most of the addicts who came from states bordering Mexico or the Gulf of Mexico or from the metropolitan belts of the East and Midwest had been marijuana smokers, the survey found. On the other hand, most of the opiate addicts from 12 states in the South did not use marijuana.

These equivocal results demonstrate no causal link between opiates and marijuana, although they do not rule out the possibility that such a link might exist. Social environment, for instance, might enter the picture.

Drs. Ball, Chambers and Ball speculate that in metropolitan centers the easy availability of marijuana involves novice smokers in a drug underworld where peer-group influences draw them toward heroin. Although the speculation is not contradicted by the results of their study, no survey to date has been able to pinpoint the exact connection, if there is any, between marijuana and heroin use.

Consequently, one of the research projects currently funded by NIMH is a long-term study, under the direction of Dr. Stanley E. Grupp at Illinois State University, into marijuana use among various social groups, with an emphasis on isolating the factors that might cause a marijuana smoker to turn to addicting drugs. "Many of the marijuana smokers we're studying have had opportunities to use heroin but haven't done so," says Dr. Grupp. "So far, we don't know why."

Other controversial allegations about marijuana stand in similar need of further research. Claims that marijuana can induce mental deterioration, criminal behavior and passivity have not so far been supported by any research in the United States. Yet the scientific literature from foreign countries, such as India, Egypt and Indonesia, contains reports of investigations supporting such claims.

In these countries, research indicates, criminals and mental patients are

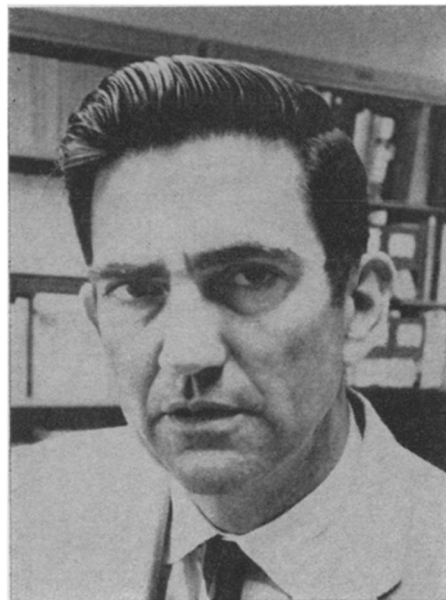


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*Dr. Grupp (top left) reports few links between pot and heroin users. Dr. McGlothlin (right) suspects chronic users may become dropouts.*



Newsweek

often found to have been habitual users of cannabis. Whether there is any causal connection is a moot question. Most American investigators feel that scientists abroad have failed to distinguish adequately the effects of cannabis from the possible effects of poverty, malnutrition and other deteriorating factors. Dr. William H. McGlothlin, a psychologist at the University of California at Los Angeles, is using part of his NIMH grant to prepare a systematic evaluation of the world-wide literature on cannabis. So far he finds that all the foreign studies "can be criticized on methodological grounds."

Nevertheless, he adds, the observations of foreign investigators should not be entirely rejected. The possibility that chronic cannabis users tend to become

social dropouts Dr. McGlothlin finds quite plausible. "Chronic users of any drug, including alcohol, are liable to drop out," he says. In fact, it has been suggested (by the Council on Mental Health of the American Medical Association, among others), that the increasing popularity of marijuana in the United States may result in a serious social problem, principally because large numbers of people may wind up centering their lives around the smoking of marijuana, just as alcoholics focus their existence upon drinking.

Recently Dr. McGlothlin, together with two sociologists, Dr. David O. Arnold of the University of California at Santa Barbara and Paul K. Rowan of California State College at Los Angeles, two more NIMH grantees, con-

ducted a survey bearing on the question. They studied a group of adults who typically had been introduced to marijuana in the 1940's. The adults surveyed were interested in psychotherapy, yoga, Zen meditation and other techniques of exploring consciousness and were willing to try almost any psychotropic drug. A few of the adults had tried heroin, but the drug they favored most, other than marijuana, turned out to be alcohol.

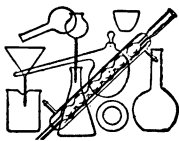
Dr. McGlothlin, Dr. Arnold and Rowan concluded that "marijuana abusers would be drawn from the population who do, or would, use alcohol in excess." If potential alcoholics and potential marijuana abusers are roughly the same people, they suggest, it follows that the legalizing of marijuana might not increase the level of drug abuse in America. Such a conclusion, however, is highly tentative, since the survey included only 29 persons, who may very well not be representative of the sorts of people who have begun smoking marijuana in recent years.

Another much-debated contention supported by some of the foreign evidence, that marijuana can trigger mental breakdowns in otherwise healthy individuals, is not thus far supported by American research. Dr. McGlothlin points out that cannabis preparations used in the Middle East and India, from where most of the foreign research comes, are considerably more potent than the marijuana available in the United States; hence foreign research and American research on this question are not directly comparable.

Researchers in this country, nevertheless, are gradually amassing evidence

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## . . . marijuana

that indicates the American variety of marijuana is a comparatively mild drug. More than 30 years ago, the Mayor's Committee on Marijuana in New York performed a prototypical series of clinical tests on subjects under the influence of marijuana and concluded that "the basic personality structure of the individual does not change" as a result of smoking marijuana.

Most of the subjects, the committee reported, were quiet and generally euphoric after taking the drug. On tests of intelligence and cognitive functioning, marijuana appeared to produce a transitory adverse effect on the subjects' performance. But the effect was slight for those subjects who were experienced users. A few subjects, judged to be prepsychotic or severely disturbed, showed anxiety reactions or psychotic-type reactions to the drug.

**Clinical research** since the 1930's has confirmed and amplified the findings of the Mayor's Committee. Recently Dr. Andrew Weil of the National Institute of Mental Health, Dr. Norman Zinberg of Harvard University and Judith M. Nelsen of the Boston University School of Medicine performed tests of muscular and mental coordination on a small group of marijuana smokers. The impairment in performance on the tests evidenced by their subjects was, they noticed, closely related to the strength of the marijuana dosage administered.

At normal dosage levels, the performance of experienced users in some cases "appears to improve slightly after smoking marijuana," the experiments showed. Dr. Weil believes further experiments he plans under the NIMH effort may demonstrate that marijuana interferes with short-term memory (memory of the immediately preceding seconds and minutes) for neophyte smokers. This hinders a subject's efforts to carry out a complex train of thought or to maintain the thread of a conversation. Experienced marijuana users, he speculates, somehow learn to overcome such hindrances, or even to improve their performance, unless they have received a high dose.

Dr. Reese T. Jones, a psychiatrist in charge of a NIMH-supported marijuana research program at the Langley Porter Neuropsychiatric Institute in San Francisco, reports similar findings about the importance of dosage level in marijuana experiments. When the dosage level is maintained at or below the level present in the marijuana normally available in this country, "adverse reactions are rare," he says. At high dosage levels, anxiety reactions often occur.

In the next few years, it is expected, scientists will have collected far more

precise information about the effects of marijuana on behavior. Whether such information will succeed in resolving the public controversy over marijuana remains to be seen, since much of the research will inevitably be open to methodological criticism.

Long-term sociological research into the effects of marijuana, for instance, may be criticized on the grounds that the persons surveyed might not be representative subjects. "Since the drug is illegal in the United States," says Dr. Helen Nowlis, a psychologist at Rochester University, "researchers who want to study the use of marijuana over a number of years have to work with subjects willing to admit that they regularly break the law. These subjects may not be typical marijuana smokers."

Studies performed by clinical psychologists are subject to other criticisms related to the selection of subjects, the method of administering marijuana and the choice of drug used as a placebo for control purposes. Dr. Nowlis points out, for example, that cognitive-functioning tests and simulated driving experiments in laboratories may tell very little about the performance of a marijuana user in a real car in the outside world. "I cannot," she says, "conceive of a research design that could provide definitive answers."

**Most scientists** engaged in studying the behavioral effects of marijuana, however, feel that that future research will show marijuana to be neither as harmful nor as beneficial as popularly claimed. "Drug studies are always fuzzy," Dr. Jones notes, "and people will be able to pick out the points they like and ignore the rest." On the basis of the evidence so far, he states, it would nonetheless be reasonable to conclude that marijuana is a rather mild drug.

At ordinary dosage levels, Dr. Jones says, marijuana "doesn't look so different from other psychotropic drugs." In fact, he adds, "I suspect marijuana will turn out to look more like alcohol than it does different."

In any case, many researchers feel that the public controversy over marijuana is not so much a debate over the scientific evidence as a quarrel over social values.

"The generation gap, the Vietnam War, and all kinds of political and social attitudes are involved," says Dr. Nowlis.

As social attitudes change and as scientific knowledge about marijuana accumulates, the present dispute may come to seem ridiculous, Dr. Grupp believes. "Maybe 30 years from now we might look back on this controversy," he says, "as one big put-on." □