

Drey

MINUTES

ASSEMBLY JUDICIARY COMMITTEE
March 7, 1977

Members Present: Chairman Barengo
Assemblyman Hayes
Assemblyman Banner
Assemblyman Coulter
Assemblyman Polish
Assemblyman Price
Assemblyman Ross
Assemblyman Sena
Assemblyman Wagner

The meeting was called to order at 8:00 a.m. by Chairman Barengo to hear testimony on AB 253 and AB 280. Both of these bills being concerned with the marijuana issue.

Assemblyman Dale Goodman was first to speak as the introducer of AB 280. His written statement is attached and marked Exhibit A. He also gave to the committee a copy of the December 1976 issue of Psychology Today which he asked the committee to read. This article is attached and marked Exhibit B.

James Slattery was next to speak. He told the committee that he was appearing before them on behalf of his wife, who has glaucoma and is losing her eyesight. He stated her eyes had been tested in the east and he and his wife were told that marijuana has been very effective in the control of pressure in the eye which causes glaucoma. He said the doctors in Reno said they would like to use marijuana in treatment. However, the doctors are afraid that they might get caught. He said his wife has asked for the last two years for him to buy some marijuana so that she could use it in cooking. But, they were afraid of prosecution for possession in Reno. He explained that he had heard of one fellow who went to the federal courts and got permission from the federal government to use marijuana for his glaucoma. Mr. Slattery stated he felt there are many, many people in the land who have glaucoma and, he thought, it would be a very good and wise thing if marijuana were decriminalized so that these people could get relief.

In answer to a question from the committee, Mr. Slattery said that he did not feel that most people who smoke marijuana have glaucoma. However, he further pointed out that his wife is probably the only person in Nevada who has had an operation for glaucoma. He said her doctor had recently told her that he might have to freeze her eye because it had developed a wrinkle in it. The doctor also told them that one option would be the use of marijuana, which would relieve the water pressure in the eye and probably her sight would be saved for a lot longer time.

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Mr. Harold Albright, attorney in Reno, who practices criminal law, was the next to testify and stated as follows:

There's a wind blowing across this country and it's a wind generated by people who demand that laws be responsible and applicable and meaningful, rather than arbitrary and capricious. It's a wind that has stripped bad laws from the statute books. It has stripped away discriminatory laws, unconstitutional laws and meaningless laws. I come here today, as an attorney who practices quite a bit of criminal law in the state of Nevada. I hear the wind from the grass roots, so to speak. I talk to my clients and I experience their frustration and their confusion. And, their disbelief when this law is applied to them. I must say that I really do not like what I hear. My clients ask me, "What did I do wrong? I was sitting in my home, I wasn't doing anything, I wasn't offending anybody, I wasn't performing any illegal act, other than, I simply possessed marijuana." Virtually every meaningful law that we have on our books today, protects people from the effects of asocial behavior, murder, rape, robbery, assault and battery, trespass, obscenity laws, things of this nature. All of them attempt to protect us from the conduct of other people, and, to punish other people for conduct which affects us. Not so much with the current marijuana laws. They punish people who merely possess a drug, whether they're using it at the time or not. And, they punish a person, regardless of the responsibility with which he uses the particular drug. Clearly, they cannot be punished for committing one asocial conduct or one asocial act and they can be sentenced to prison for six years. I do not think that a marijuana law, or possession law, such as we have now, is necessary. Pursuant to the guidelines of NRS 453.146, you are provided with the tools to determine whether a material should be a controlled substance. Utilizing these guidelines, I have come to the conclusion that we do not need a possession law as such. Marijuana is not physically addicting, like heroin. Productive people still remain productive even though they utilize marijuana. States, like California and Oregon, have actually experienced a decline in the use of marijuana once it's been legalized. And, I believe the articles provided to you would substantiate the proposition that there has been no demonstrable proof of danger to the public health through the use of marijuana.

In other words, NRS 453.146, provides you with the ability to change this law to conform to the winds that now blow and conform to the way that the wind is blowing, due to better knowledge and better information being provided to us. Information now seems to show that whether or not an individual uses or possesses marijuana is unimportant, as it has no effect on other people.

I am here as a proponent of AB 280. AB 280 recognizes the concepts of which I speak and totally decriminalizes possession and relies on other laws to protect the people from the asocial effects of those who are abusing the rights to smoke marijuana. There is now a means available to detect the presence of marijuana in the blood, breath or urine of an individual. This would protect us from a

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person driving under the influence of marijuana. Also, we can be protected by laws such as the assault and battery laws, obscenity laws, trespass laws and other laws which are directed at asocial conduct of the person who is under the influence of marijuana. These laws are currently utilized to protect citizens from asocial effect of a person under the influence of alcohol. They can admirably be applied to our particular situation with marijuana. I especially like AB 280 because it places stringent controls on smoking marijuana in a public place. We are all aware of the controversy concerning smoking and the fact that smoking can effect people in an entire room. I think that the controls in AB 280 are adequate and I think that they are important. The second reason I favor AB 280 is that it frees the police from any time expenditure applicable to a marijuana arrest. One of the larger arguments that is generally put forth concerning marijuana, is the fact that the police would not be forced to spend a great amount of time if the law was not enforced. I think that even a misdemeanor conviction takes a tremendous amount of time. A citation is written up, the people are arrested, booked, the criminal process is still put into effect, they're subjected to a trial then the right to appeal to the district court. We still have a tremendous expenditure of time and money. This law would allow for people, responsible people, to use marijuana and then would punish them for asocial effects. And, thirdly, I especially like AB 280 because it places an age limit on those who can legally possess marijuana. I think that this bill, coupled with the existing laws, will adequately protect people from what I would consider the important part of any meaningful criminal system, that is, the effect of asocial conduct.

I sincerely and earnestly urge you to hear the wind as it now blows and allow it to blow this last vestige of meaningless law from our statutes. Thank you very much.

Next to speak was James Brown, Esq., private attorney in Reno practicing criminal law. He testified as follows:

I am appearing under the auspices of the American Civil Liberties Union. I am not going to spout a lot of statistics today. There's more statistics on marijuana, more studies on marijuana, than virtually any other subject in criminal law. What I would like to get across today are a couple of basic points. I'd also like to get across some of the practical inhuman aspects of the marijuana laws, as they stand in this state, which have come to my attention during my practice.

I'd like to make three main points today. The points are: First, marijuana doesn't seem to be physically or socially harmful, by the state of the knowledge as we have it now. Second, is the virtually indisputable fact that if marijuana laws are meant as a deterrent to marijuana use, then those laws simply don't work. The third point is, that in my view, the harmful effect of the laws, as they now stand, are much greater than any potential effect of the marijuana itself.

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I would like to address my first point which is, according to current of the knowledge, marijuana is not harmful. The history of marijuana use is at least as long in the human race as the history of alcohol use. Hemp remains have been found in Mesopotamian ruins which have been dated at approximately 5000 BC. Packets of marijuana seeds, pipes that were used for marijuana smoking have been found in Siberian archaeological diggings which have been dated at approximately 500 BC. So, if marijuana causes genetic damage, if marijuana causes further physical harm, I would think that the effects have been already incorporated into our physical status at the present time. Now, during the past 100 years, numerous reports have been done starting with the Royal British Report in India in the 1870's, a Laguardia report was done among the many Laguardia reports in New York City in the 1930's. But, I think that the most definitive report on the physical effects of marijuana was recently done by the Department of Health, Education and Welfare. The Department of Health, Education and Welfare in a report, which I don't have with me today, but which is available through the federal government printing office, performed a study on Jamaican field hands who had smoked marijuana on a daily basis over a fifteen year period. Substantial psychological testing was done on these field hands, using a test group of workers who did not smoke marijuana, and no detectable harmful effect was found, either psychologically or physically. As a matter of fact, the only result that marijuana use had on field hands doing stoop labor was that, the workers who used marijuana were somewhat more productive than those who did not. So, while there is a body of people, in addressing marijuana laws, who say the time is not now, we need more studies. I say, we have had a hundred years of studies, 5000 years, at least, of use. Physical effects have not surfaced yet, and I, in my own opinion, can't see waiting another three years for them to come forward.

The second point I would like to make is that the laws against marijuana simply don't work. I think it's common knowledge that use has increased substantially over the past ten years. However, according to a study performed by the Drug Enforcement Administration, this last year, approximately 45% of the graduating high school seniors in the United States had at least tried marijuana. Approximately 20% were continuous users. The statistics vary, but, I think that it is quite obvious that marijuana use among university students and young adults is probably greater than that among high school students. I think that the reason that marijuana laws don't work is very simple. Marijuana is so easily available, marijuana grows wild as a weed on all five continents and most of the islands in the world, requires little care (a seed in the ground, it pops up in four months, ready for harvest). And, because of that, it lends itself ideally to the small, individual entrepreneur who wants to get involved in illegal activities. No chemical processing is needed, no special training in chemistry is needed to make marijuana and, therefore, there is no organized crime connection that is necessary to go

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into marijuana smuggling. A patch of ground in Mexico or in the United States is all that is needed. As a matter of fact, marijuana was grown for hemp in the United States prior to World War I and World War II. It was disseminated so widely throughout the midwest that it grows wild along virtually every roadside in Indiana and Ohio. Making a substance illegal which grows by the roadside is a futile effort. And, I think that the futility of the effort is brought clearly forward by the increased use and by the fact that the laws just don't work.

Finally, and most importantly, from my point of view as a practicing attorney, it seems to me that the laws on marijuana are much worse than potential effects of marijuana. To date, the only scientifically proven harmful side effect of marijuana is jail. I think that the marijuana laws foster disrespect for law enforcement and the authority of the police. I see young, educated, middle class clients who have been arrested, mugged, finger printed, they have appeared in court several times, sometimes handcuffed, and not to mention sizeable attorney fees, and this is for an offense which results in the equivalent of a traffic ticket a little less than twenty miles to the west of here.

I think the most important effect of the marijuana laws is their disruptive effect of the laws of criminal procedure. Since marijuana smoking has become more common, marijuana arrests have increased substantially. Lawyers have gone into court more often to argue on behalf of their clients, and the law of search and seizure has blossomed. What we have now is essentially a two-tier system of search and seizure laws; one for drug related crimes and one for crimes involving crimes against property. In 1974, the West Key Number System, a legal encyclopedia, contained a section on search and seizure about this thick (indicating a section about one-half inch in thickness). At the end of 1974, the West System, realizing that search and seizure laws, as we had known them up to then, really didn't have anything to do with what was going on in the courts, came out with a whole new index. It is called Drugs and Narcotics. This is the search and seizure laws on drugs and narcotics (indicating a full volume of about one and one-half inches in thickness). The effect of this is, as I said, a two-tier system of criminal procedure; one where the search and seizure laws violate crimes, crimes against property and one involving the search and seizure laws involving drugs and narcotics, particularly marijuana.

Judges often realize the injustice of the situation, small amounts of marijuana leading, potentially, to six years in this state, in the state penitentiary. And, they attempt, in my experience, to inject a little humanity into that unjust law by grabbing for loopholes. As a criminal defense attorney, my job is to give them the loopholes and often they grab them. The problem is that those loopholes get built into the laws of search and seizure and then they are applied to all crimes. When people complain about the fact that criminals are being let loose on a technicality, particularly violent criminals, murders, it's laws like this which lead

to those technicalities getting fed into the search and seizure laws. I would like to see laws, victimless crimes in general, done away with, particularly the marijuana law which, I feel, is the worst abuse. I feel that AB 280, total decriminalization, is what the law should be and I also favor AB 253, which I consider to be a reasonable compromise. Are there any questions ladies and gentlemen.

Mrs. Wagner asked if he knew if there were any other states that address marijuana in the way that AB 280 does. Mr. Brown stated not to his knowledge.

Gordon S. Brownell spoke next on this issue. His remarks are attached and marked Exhibit C. He read directly from his statement.

Chairman Barengo asked Mr. Brownell if his testimony was in favor of AB 253 or AB 280. Mr. Brownell stated his group would support both bills. Certainly, NORML's goal is the removal of criminal penalties for the private use of, and possession of, marijuana and they would favor going beyond the California and Oregon laws which maintain civil fines, so they would be in support of both bills. He stated he thought Assemblyman Kosinski's bill, since eight other states have adopted similar laws, has a framework of reference by which one could gauge its effectiveness as it is likely to be in Nevada. The maintenance of a civil fine stands as a sign of society's disapproval of use, without the harm that results from giving someone a permanent criminal record or arresting and jailing them. So, for those people who are concerned that decriminalizing marijuana is going to be interpreted that the legislature says it is all right to use marijuana, the maintenance of the fine and the civil sanctions demonstrate that this is not the case and that the conduct is still being discouraged by the legislature.

In conclusion, Mr. Brownell stated that for the last two sessions, Oregon style bills have cleared the Arizona state Senate. However the bill has died in their House.

Mr. Bruce Blackdar, assistant professor of mathematics at UNR, representing the ACLU of Nevada, testified next. He read from a four page summary of position which is attached and marked Exhibit D.

Dr. Joel Ford, author of "Pot: A Rational Approach" (which is attached and marked Exhibit E) was next to speak. Much of his testimony was taken from the text of that booklet. His remarks, not included in that booklet, follow.

I would like to recommend to you as, a basic reference, the extensive reports of the National Commission on Marijuana and Drug Abuse, and the Canadian Commission Report, a special volume on "canabus". That makes it more objective, so to speak, rather than relying on any one person. However, I am attempting to speak to you, not as an adversary but, as an independent expert. I am not

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a member of NORML, and, I don't represent a position, certainly, for drugs, as will become clear. I, personally, am a non-user of alcohol, tobacco or marijuana.

The public policy question I would urge upon you is to think in terms of what to do with fellow human beings; children, husbands, wives, who do something that you may disapprove of and may not choose to do yourself. What do you do to, and with, such people that is likely to be effective in moving them in a better or more constructive direction, as you see it. And, what do you do to and with them, that will avoid being more harmful than the alleged evil that you are seeking to combat. In other words, a consideration, or a balancing of the punishment versus the crime, or the treatment versus the disease, where you do not want the treatment to kill the person in your legitimate effort to try to prevent what you consider a problem.

Another part of the public policy issue is how do we help move individuals and the society beyond drugs, which has been one of my long-term goals. How do you get people to accept and to utilize other kinds of alternatives, and how do you present these to people in a way that will be as attractive to them.

I very much admire the attendance that your committee has and your alertness and attentiveness, which is in marked contrast to some of the experiences that I have had in the California Legislature, and with some other bodies. And, I also appreciate the no smoking policy in here.

Now, legalization versus criminalization versus decriminalization is very much misunderstood, and I felt it was in some of the testimony that has been presented to you today. For example, I think that bill AB 280 is not at all a decriminalization bill, although it is labeled that. It is a legalization bill. And, therefore, it will contribute to confusion, I think, in your decision making if I don't try to differentiate those. Legalization is what we do, and have done, over the past forty some years with alcohol and tobacco. In effect, it means commercialization. It means widespread, totally legal production, advertising, massive distribution, massive encouragement of the use and abuse of alcohol and tobacco to the extent that if marijuana were legalized, in that way, I think, one would expect the same thing. It is my personal view that what we have done with alcohol and tobacco should not be a model for anything else, and, in fact, there is great evidence that we should do something, not to bring back prohibition, which obviously is undesirable, but, to take selective and discriminating measures to reduce the power of alcohol and tobacco in our society. Including, such good anti-smoking laws, as you have attempted here and other states have and other communities have, but, also, a ban on all advertising, I think, would be very desirable. The advertising that stresses to people that if you want to be eternally youthful, have sexual pleasure and general happiness, you will do that, if you use the right drug, particularly alcohol or tobacco. There is a lot of hypocrisy in that, and a lot of antisocial behavior that we should be correcting.

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So that's legalization, in other words, commercialization. Criminalization is essentially the policy of prohibition, that historically we used with alcohol before 1933, and continue to use with marijuana and with certain other drugs.

Decriminalization I see, not as a middle ground, but, as a very independent, more selective, more thoughtful position. And, it means that you stop making criminals out of the individual user in this instance. But, you maintain penalties against the sale of substances that you disapprove of and as representatives of society seek to control in some way. Decriminalization is an effort focused on user-possessors. And among its many advantages are, of course, to stop destroying people in the name of saving them, stop sending them to prisons where they are not rehabilitated, but, rather are given post-graduate courses in criminality and aggressive introduction to homosexuality, and are so generally embittered that when they leave they are much more likely to be criminal than they ever were before.

Decriminalization would select out the user and attempt to deal with that in other ways that I will recommend in my closing comments. I do want to stress the medical uses that one of the witnesses brought before you today. Certainly, if you did nothing else, I hope you will do much more than this, you should certainly include making it possible for people to use it medically. Not only glaucoma, which affects about a million people in the country and can result in blindness, but headache, depression, hypertension, a variety of medical illnesses, are not to be cured, that isn't the point, cannot be completely cured, that isn't the point, but, like many other drugs and medicines, some symptoms can be alleviated and sometimes there is no other specific remedy for it, glaucoma being an example, where other things don't work very well at all.

Now, as to solutions, finally. I have alluded to my desire that you be soft on people and hard on drugs in your social policy. By which I mean that you give four first priority, in criminal law, to violence and, insofar as drugs are involved in that, that would be alcohol; that you give your second priority, as far as the drug question goes, to major traffickers in drugs that the society condemns and has significant evidence are bad. As an example, the major traffickers in heroin are well known to be in organized crime and in government in Thailand, in Mexico and Turkey. And, obviously, I am not suggesting that you have the resources to deal with those foreign governments, but you do have some power to try to get federal officials to do much more of that instead of perpetuating the hypocrisy that, when a street corner drug abuser of heroin, or some other drug, is arrested and imprisoned, that that is stopping the traffic in dangerous drugs or narcotics.

I recommend a ban on advertising alcohol, tobacco and pills to the extent that you are able to do that, and I recommend good drug education, beginning in elementary school, that demythologizes drugs, that tries to present positive alternatives that will help

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to prevent drug taking behavior, that deals with all drugs in context, including alcohol, tobacco and marijuana.

I certainly recommend comprehensive treatment of those who are drug abusers. Not a one dimensional approach that everything will be solved by self help groups or by methadone maintenance, or any other thing, but, try to make available a wide range of treatment approaches for those who have drug abuse problems, and that, by the way, does not include marijuana, which rarely requires any kind of outside intervention and is relatively innocuous in its effects.

Overall, we need to try to reduce the social and psychological cause of drug taking. The peer group pressure, the growing alienation in the society, a wide range of things, but part of what we need to do, I think, is to stop depending on the criminal law as a garbage can, and to start rebuilding the institutions that traditionally communicated ethical behavior and socially constructive behavior, such as family, church, school, and personal example in influencing people, that is, through what we actually do rather than what we just claim to believe in. Those things, I think, should be relied upon much more than we have been in recent years. Particularly in influencing people's behavior about drug taking, rather than turning everything over to the police and courts that are already overburdened and should be giving higher priority to these other things I have talked about.

When you are concerned about a drug, like marijuana, tobacco, or alcohol, concentrate on public anti-social behavior, such as drunk driving versus the use of alcohol in people's own living rooms. Such as public smoking of tobacco or marijuana versus the private use.

Finally, I want to emphasize that our long-term goal with both marijuana and other drugs, such as alcohol and tobacco, should be to try to move our society beyond drugs.

Mr. Polisho asked Mr. Ford if he felt there should be a limit placed upon the quantity of marijuana for which a person would be prosecuted for possession.

Mr. Ford: Yes. First of all, if somebody commits a crime, let's say burglary or assault on some one, certainly that crime should continue to be a criminal offense and our enforcement efforts against that type of thing and our efforts to prevent it should be, I think, even better than they are today. So, the drug taking, in my judgement, most commonly again, alcohol, but the person could be a user of marijuana, they could be a user of various pills, that should not eliminate them, or excuse them, from prosecution for a crime against property or a crime against a person. On the question of amount, certainly, there are gray areas. Now, somebody is found with a ton of marijuana, as some people are, it would be ludicrous for them to claim that that was entirely for their personal use. If somebody is found, probably with five pounds, that's probably not even in the gray area. In other words,

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that still could be, and I think it would be reasonable to call it presumptive evidence, that that was more than for their own use, presumably for sale to other people for personal profit. An ounce seems to be a generally good dividing line. Now, I think it would be fair to say that sometimes people who would be caught with an ounce or less would have other motives than their personal use. You can't pass any kind of amount that would apply to everybody. But in general, an ounce or less I think should be, there is good reason for presuming that would be most likely for the individual's personal use.

Mr. Polish asked Mr. Ford to explain the difference between someone who smoke marijuana and hashish.

Mr. Ford: Well, that, to, is a good question. It's something that has concerned a lot of people. I feel the way to think that through is by making a beer vs. vodka analogy. In other words, it is quite true that if somebody were to drink twelve ounces of vodka in the same way they drink twelve ounces of beer, they are going to have far more serious effects. Far more toxic effects. But, what happens, instead, is the person takes one ounce of vodka, which is physiologically equivalent to the twelve ounces of beer. That gives approximately the same blood alcohol content. So the same thing would apply, by analogy, to the distinction between hashish and regular marijuana. The hashish user ordinarily takes a small amount of hashish to get the same effect that a larger amount of marijuana would give to them. However, if your question was, if they had an ounce of hashish, could that stretch out over a longer period, be used for more doses, I think that would be true.

Mr. Price asked Mr. Ford what methods can be used for determining the blood content of marijuana. Is the method developed at this time?

Mr. Ford: No. The police are generally correct in that statement that there has been progress in the last few years in simplifying and making less expensive detection techniques. The overall answer to your question is marijuana can be detected in the blood or urine, but, as you point out, it has been laborious. The equipment needed cannot be carried around. But, that really doesn't seem relevant to me for this reason, that insofar as it can be detected at all, and that technology does exist, and there have been many articles written about measuring it in the body, you can have one central or two centralized laboratories and samples of blood or urine can be taken, which is done with alcohol. Not all police officers in America or other countries carry apparatus with them. In fact, some laws require that a blood alcohol be drawn by a licensed facility by a physician or whatever. So you could, in terms of detecting intoxicated driving, take a sample and make an analogy with the way blood alcohol levels are determined. And, I certainly am strongly in favor of restricting people from driving under the influence of any potent substance, doing much more about drunk driving from alcohol and certainly trying to prevent driving while intoxicated with amphetamines, barbiturates, mari-

juana, or any other substance, so the technology exists. It is not as portable, it is not as inexpensive, but it can be done and centralized laboratories could have it.

Mr. Ross asked Mr. Ford to comment on the law, as it is Nevada, that a gift can also be considered as a sale.

Mr. Ford: I have never liked that definition. Most states have that. That the giving away of a substance is called a sale. And, I appreciate your bringing it up. I would like to see that changed. Many husbands and wives are now criminals under that law because, at least in most states, if you have...taking you as an example...a prescription from a physician, and have it filled for yourself and you gave that substance to your wife or another member of your family, that, technically, is the illegal sale of a drug, under these statutes. I think that's an absurdity. Particularly if it's something where the effects are known and where it's something that the person you are giving it to would have prescribed for them anyway. What you are doing is saving them an often expensive visit to a physician or to a clinic facility and an expensive purchase at the pharmacy. I don't think the gift of a pill or of marijuana should be lumped together with somebody who makes a business out of it for personal profit. Thank you.

Mr. Dick Iglehart, Deputy District Attorney, Alameda County, California spoke next. He said: I agreed to come today, at the invitation of Mr. Brownell, to share with you some of our experiences with the present California drug law relating to marijuana. Perhaps I can just give you some general input from law enforcement in California as to its attitudes and reactions to the marijuana laws. I would like to just speak briefly and then answer any questions you have. What happened was this: For many years California law enforcement agencies opposed bills that led to either bills proposing total decriminalization or bills that proposed lesser penalties. I think we were one of the main groups that kept the changes from occurring. Certain changes occurred between the 1974 and 1976 period. During that time, we found there was a massive amount of resources being used in the area of policing marijuana offenders. We were in a situation, perhaps one that you are not in, where we had very limited resources for law enforcement and we found that we were going to have to treat marijuana differently, if in fact it was as mild a drug as some of the experts were saying.

I think one of the main jobs you probably have here is determining, in your own minds, how harmful marijuana is, and perhaps some of the experts here can help on that. You may want other experts on that. What actually happened was that we had several law enforcement meetings and, finally, I represented both the district attorneys and the Peace Officers Association, as well as other law enforcement organizations, before the California Legislature. In our own meetings, the police said they felt they were taking the brunt of the problem.

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They said they felt this was because the District Attorneys deal out the cases, the judges give them probation, the other people get to ease off on this. Yet, the police are still arresting people, booking them, transporting them, still locking up the cars and towing them. We found it to be a very major problem of credibility, too, with the people who we were trying to get to obey the law. So, we agreed to at least sit down and talk with the people who were trying to change the law in California. We did so and ended up cautiously endorsing the bill that was passed in California, which is similar to that which has been talked about here. Before then, their laws of the time were that possession was a misdemeanor, a straight misdemeanor. These had been changed a few years before from being a felony to a felony misdemeanor and then to a straight misdemeanor.

The California Legislature changed the law, making a distinction on the amount, so that possession of one ounce or less was made a citable offense. It is still a misdemeanor, and those people who spoke here and said it was decriminalized were wrong. It wasn't decriminalized. It is still a misdemeanor in California to possess marijuana. It is a misdemeanor with less drastic results. But, it is a mandatory citation. The police, for an ounce or less, don't have to, and cannot, arrest the person. They give them a citation similar to a traffic offense. The person is required to obey the citation as in a traffic offense. He is required to be present and then it goes from there. What's happened under the new law, is that about 93 or 94% pay a fine and that's it. They don't get a lawyer, they don't get a public defender, they don't get involved in the criminal justice system. A few have court hearings and a few have trials, but very few. In Alameda County, we have a population of over a million. We had six trials last year for possession of marijuana, one ounce or less. The vast majority of the stops are for possession of one ounce or less.

I think there is some validity to changing how you approach marijuana. And, changing you focus on the trafficking of drugs versus the possession and the possession of small amounts of drugs. One thing we found was that we were able to devote more of our limited resources to the trafficking of marijuana and other drugs, rather than toward simple possession.

A couple other comments I thought of, as I sat here, is, I think, that the citation system is one which we supported mainly to allow the police to do the least possible and still bring some effect to possessors of small amounts of marijuana. There have been cost estimates, I think Mr. Brownell referred to some of them, and we figure that our cost, in terms of processing possession cases of less than an ounce, have been reduced dramatically. It's been estimated in the first half of the year that the cost for processing those cases have gone down approximately 80%. And, again, in the area of limited resources, that money we need to devote to other criminal conduct. I think if you do choose to decrease penalties for possession of a small amount of marijuana, you can still keep active your laws which make criminal abuse of marijuana, as well as other drugs, such as driving under the influence, or any

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other laws of abuse.

While it is difficult to detect, and I think your comments were correct that it is very difficult to detect, we can prove it, either through a statement of an individual or by circumstantial evidence, such as seeing that a person appears to be intoxicated, yet, he does not test high on an alcohol test, and there is marijuana in the car, or something like that. I might say, that my experience is, the incidence of driving under the influence of marijuana is very low. It may be that they are not detected, or it may be that it occurs less in the situation where you need to drive, either you are smoking marijuana in your car or using your car to go from the place where you smoked it to another place. In other words, I tend to think that it occurs more at home or in other areas where it occurs and you don't see the effect of it in driving to and from.

I have had an occasion, since the law passed in California, (it's only been in effect for a year and a couple of months) to do a couple of other things. We had a record sealing provision of the law so, that after two years, your record would be automatically destroyed. The Attorney General's office testified that they could program their computer so that it would not show up after two years. You simply date the input, and in two years it goes off your rap sheet. They could do that, but there was a problem as to what happens to people who had prior arrest records. So, a discretionary law was put in so you could appeal to the court, the court could give you a hearing and decide whether or not to seal your prior record after a two year period.

I have had occasion to investigate some of the cases of people who wanted to get their records sealed. I have been astonished at the number of very decent people who have a marijuana record and nothing else. Generally, we in law enforcement and district attorneys, tend to be fairly callous toward law breakers. My attitude toward marijuana possessors in the past might have been different because I saw them, perhaps, at a different stage in their lives, or I just saw some of the worst offenders, or whatever. But, I have had occasion to check into their backgrounds because the court wanted to know the background of people trying to get their records sealed. A number of people, as I say, were very decent people, and their only offense was that they were stopped in a traffic situation and they had some marijuana, that was it. They felt very uncomfortable having that on their record. So that's, in most cases, why the courts have allowed them to seal that record.

That's about all I have to say. I will be glad to respond to any questions that you have, and I appreciate your considering this. I also would comment, I was a lobbyist for three and one half years before the California Legislature, and rarely could we ever find a committee session where everyone attended. And, again I want to compliment you on all being here.

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Chairman Barengo thanked Mr. Iglehart for expressing his thoughts and asked him if he thought it was a fair statement to say that a substantial percentage of people that have marijuana arrest records are people who work regularly and pay fines and would not, normally, be involved in other law breaking activities.

Mr. Iglehart stated he felt that was correct. He stated that he had seen people who were serious violators of the law who had had prior arrest records somewhere along the line dealing with marijuana. However, he had also seen a substantial number of people where the only thing that they had ever done was possess marijuana. Therefore, he did not think that it necessarily lead to other types of criminal activities. He felt there was an incredible number of people whose only criminal record was one of possession.

In answer to a question from Mr. Price concerning time spent writing tickets, Mr. Inglehart answered that his answer would be categorically no. Because under the old law to go through what an officer had to go through was similar to a typical situation as a traffic stop this officer might observe marijuana on the seat of the car or somewhere in the car perhaps a smell of marijuana and then you went further. Then what happened was the sealing of the car, the arrest, handcuffing, transportation of the individual, towing of the car in California. Then they have to book them. We estimate, that depending on where you are from the booking facility, it can take up to four hours to process a marijuana arrest, and now that's in an occasion where you have to go pretty far. And then, once the individual bails out or gets out, he still has to bail his car out, which is sometimes one of the greatest penalties we can put on him. Under the citation law, you write out a citation just the same way you write out a citation for speeding and they have to appear. Something interesting is that our percentage of skips on traffic offenses citations is about 18%. About 18% of the people don't pay attention to their traffic tickets and they have to go to warrant and be processed along that way. Our skips on the marijuana citation are 3% and that is similar or lower to skips on other criminal type offenses. But that may be just the newness of the law. I don't know for sure what it is. But, the skips are down tremendously, so people are obeying the law for the first time in that they are going in and paying their fine. And, by the way, the counties can use the money. They are getting more now out of fine money than they were out of individuals who were eventually convicted, if they ever were, and then being fined. In most cases, judges would never fine them because they had already gone through the system, and they were paying a lawyer or whatever. Now, they're picking up fine money and though I don't want to promote it as a revenue source, maybe it is.

You know it's interesting to me to see the number of defense attorneys who get involved in this. I've seen a couple of them here today and they're probably going to lose some clients. As D.A.'s, we can afford to be very ethical. Sometimes, I accuse my defense attorney friends of being the other way. But, I am glad to see that in most cases, at least with marijuana, they

tend to try and promote some more reasonable, legal approaches or criminal approaches to marijuana, and probably to the detriment of their own fees. Thank you.

Dr. Richard Siegel stated, I'm a political scientist. I teach at the University of Nevada and I'm a member of the National Board of Directors of the American Civil Liberties Union. Gordon Brownell and myself have attempted to bring you the best possible testimony that could be brought to this issue. I feel very positive, myself, in terms of the breadth of the testimony that has been given to you so far. I wish to say to you, first of all, that if you do not choose to decriminalize marijuana or do as the California system has done, it should be because you have testimony that is comparable to what you have heard so far this morning. Testimony that would say the opposite in a comparably experienced and complete and detailed manner. Otherwise, I think there is really only one alternative in this issue. Dr. Ford mentioned the issue of the key question, at least one of the two key questions, the actual effects of marijuana. I am going to leave you with three studies which I think are good. I have in no sense chosen over others. I have never seen a study, I have never received a study, that I would not put before your hands. The New York Times has a summary article on recent research on marijuana, attached and marked Exhibit F. New marijuana studies show no adverse affect. I'll read the first paragraph: "Several recent studies of chronic marijuana users, conducted independently in half a dozen countries, indicate that the drug has no apparent significant adverse affect on the human body or brain or on their functions." It goes on from there. The second study from the American Academy of Pediatrics is attached and marked Exhibit G. The first paragraph of their conclusions: "Various adverse affects have been attributed to marijuana and other preparations. Most of these claims cannot be well-substantiated because they are based on uncontrolled observations, improperly controlled studies, studies with small sample sizes and retrospective analyses." They procede to call for the decriminalization of marijuana. And finally, the Consumer's Report which is attached and marked Exhibit H follows almost precisely the lines of the Pediatric study and concludes very strongly. It destroys, in effect, every study that has claimed significant adverse study. It has riddled them to pieces, from a scientific point of view, and concludes in the same way as the pediatric study. If there are comparable studies that are available that show this drug is in a need of a great degree of penalties, I would want to see them. And, I would want you to see them. But, if they are not brought to your attention or if they are not available, I don't see what other alternative we have.

Secondly, I want to call to your attention to just two other points; one is, I think I'm in a position to judge the attitudes of youth in Nevada through my experience at the University and elsewhere. We have a peak of alienation which I regret to say, whichever side were on, on the ERA issue, has been compounded to a significant extent. The political process we all know has received a jolt, the greatest jolt from the point of view of fragmentation in our state in 12 years, in the 12 years that I've

been in this state. I believe that we need some action to give the Legislature a sense of progressiveness, a sense of support for a lot of people who feel extremely alienated with the political process at this point. And, we know all of the various evidence of that. Further, as I've talked to Assemblyman Wagner and others, the greatest constituency for this bill is not the youth. It's their parents. We're frightened. I'm a non-user of marijuana, and I have children that are in the subteen category at this point. I know how little control I will have over them in the area of marijuana. The thing that frightens me the most though, would be to have those kids arrested and go through the process that we would go through. I can live with them smoking marijuana a little bit, but I really am very frightened by the arrest prospect for my children, for those of my friends, and I think that those of you who do speak to your constituents, know that that feeling is very widespread.

This should be kind of -- we talk about a lawyer's relief act -- a parents relief act as far as this is concerned. And finally, in making consideration, I'm not certain if it's necessary to do it yet, at this immediate moment, but if not now, soon. Please give consideration for those people who are now in prison for possession of marijuana, for those people who have felony convictions on the record. It doesn't have to be done in the same act, but hopefully soon after that, let us take some steps to correct our recent actions on marijuana. We have people in prison for up to 15 years right now for possession of marijuana in Nevada. I have two cases being reviewed by ACLU lawyers. There was a life sentence given in Carson City 2½ years ago for someone. These are repeated offender type things with other crimes being involved, but the immediate charge is possession of marijuana and, I think, we have to bring some of these situations into line with what we do. But, I would probably propose that this be done in two separate actions so the immediate and most important thing, moving our public policy forward, is not altered. The last figures were prepared for this committee in your 1975 session, and we received a copy of them and it's a small number actually. The last complete statistic, and we tried very hard to get them updated. This study is in your minutes of your 1975 hearings.

Chairman Barengo asked Mr. Siegel to read from the report, as he only had one copy.

There were 214 convictions in 1974 and 14 went to prison and 5 went to county jail. 19 out of 214, that's slightly under 10%. Of those, the majority, let me get my districts straight, at that time Elko was districts one and three, well it wasn't the majority, but 6 out of 14 came from small counties, the prison convictions. We had, if you count prison and jail, it was 10 out of 19. The majority of prison or jail sentences in 1974 came out of the Carson or Elko districts, at that time. And, we feel, that is a very inequitable pattern for this state.

Mr. Price asked if Mr. Siegel was talking about people in prison on a primary charge of marijuana, not necessarily prison terms

that have been extended because of additional charges.

Mr. Siegel stated, all I know is, the probation department's saying total number of people being convicted of possession of marijuana. Thank you very much.

Mr. Steven Brown who is a stockbroker in Reno, Nevada stated, for the past 6 years I've been a director and/or officer of various publicly funded substance abuse programs in Washoe County. My main concern lies with young people in our community who have become involved with what I consider to be a fairly innocuous and mild euphoric. My concern is with those young people having criminal records and being incarcerated in the state penitentiary. If a young person goes to the state prison, I think there's a very very high probability that there will be repeated involvement within the criminal justice system in later years. And, it gets awfully expensive for society. If you have a criminal record and you've pulled hard time, you're not going to be a plumber, an electrician, you're not going to be a teacher. There's very few things in life that one can do with a criminal record, and you pretty much preclude a whole lot of things for a lot of people with this. Another area of concern that I have, is the application of the existing statutes in the state of Nevada. If a person is arrested for marijuana possession in this state, I think the outcome of that case has an awful lot to do with where you're arrested. If you're arrested in Washoe County or Clark County you may not even be prosecuted. But, if you're a minority and you're arrested in a small county in this state, good luck. You are very apt to pull some hard time in the state prison.

One final comment, Jim Richardson who is the official lobbyist for the Washoe County Democratic Central Committee, was unable to attend today and he asked me if I would put a couple of things into the record for him. Both the Washoe County Democratic platform and the State Democratic platform call for changes in these laws. Washoe County platform calls for changing the use of marijuana from a felony to a misdemeanor. The state platform calls for simple possession being reduced to a civil violation with a citation instead of arrest. Thank you.

^{Levy}
Leslie Levite said, I would like to preface my oral interpretation with an opinion. That, if Nevada is going to call itself the state of recreation unlimited, then indeed we should discontinue limiting our recreation. These observations were written down last June:

Gwendolyn Green is sweet 16.

Her beau had 23 years.

Gwendolyn's dad got mad at the lad,
5 years to me seems quite severe.

Does the punishment fit the crime, and is the sentence fair?

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Statutory rape oft' times is merely a sour grape;
Lester Hoak decidedly spoke,
He'd like to get high and sail.
So he joked with his bloke,
And they took a toke,
And the law nailed them tightly in jail.
Does the punishment fit the crime,
And is the sentence fair?

A wheeler-dealer lawyer
Will deal this dealer out of his care.
Jolly Joe sailed to Mexico,
He travelled and bought and learned
To pay for his voyage took ultimate courage,
But Joe and his scheme soon were burned.
Does the punishment fit the crime,
And is the sentence fair?

And, was that cargo such a shame,
That Joe and his name now are maimed?
When criminals are on the streets,
Rape, robbing, intending to kill.
The cops on the beats miss these dastardly feats,
To piddle with victimless drill.
Do the punishments fit the crimes,
And are the sentences fair?

The potentates should investigate hard crimes,
While it's not too late.
Policemen just try their best to get by,
And needed it seems that they are.
But, root, hoot and persecute harmless pursuits
For me I can't understand why.
Does the punishment fit the crime,
And is the sentence fair?

I think it's wise to realize
That other folk's business is theirs.
Lawyers are men who make the law,
And leadership roles they assume
As judge, jury, jailer and all
To speak for all men they presume.
Well, have we the right to govern ourselves
In life, liberty and pursuit,
Or to be oppressed by the dictated madness
Of those who think they know what's best.
I wish you could see the men like you
Just like me with their crowded and calloused and cruel,
And life's daily battles a survival duel,
While they're waiting their time to be free.
Does the punishment fit the crime,
And is the sentence fair?

Where loneliness, bondage or prices to pay,
Social debt that's not even there
Many folks here are doing work there
By spreading compassion and love.
Art, science, spirit, song,
Their conscienceness to move.
Yes, and eye for an eye
Is a vengeful cry,
And a tooth for a tooth
Be the sooth.
But, to nourish, replenish and help the man,
Is to nip the bud at the root.

Thank you.

Mr. Don Webber, making his third appearance before the committee since 1971 said, I hope this will be my last appearance. I'd like to start out with a few comments about some of the things that I've heard today. First of all, I am speaking in behalf of bill 280. Now it's been called the decriminalization bill, it's been called a legalization bill, but I like the word repeal. Now repeal has a connotation that I think fits in this particular circumstance. However, I want to make it clear that I am not standing here and advocating repeal of the present policy. My purpose in speaking in behalf of bill 280 is to insure that we get fair hearings. Now, I reluctantly put this forward; but since I have had experience with this before this committee since 1971, I reluctantly have to say that we have not had fair hearings up until this point. And, I think, the reason for this is there has been an assumption of harm in the discussion of marijuana. By assumption of harm, I mean the arguments that have been brought forth in the testimony against marijuana have been given more weight than the testimony concerned with scientific evidence. I'd like to suggest one particular change in the bill as it is written now. My recollection is that in the top in the summary it says that marijuana will be changed to be the same as tobacco. And, rather than use the word "same", I would suggest using the word "similar." The reason for that being that I, and others, oppose the taxation of marijuana for various reasons that need not be mentioned right now, unless you want to hear them. But, going back to the assumption of harm, I think whatever testimony you do receive against marijuana, if no harm is assumed, then we have to look at verifiable scientific evidence and that particular word, "verifiable evidence" has been used in past years. I would like to point out some other overviews that the committee could take into consideration when considering the marijuana question from all the different viewpoints that are going to be expressed today.

First, I would suggest, I would urge that committee members review the purposes and effects of the present policy. I think the question of purpose of the present policy is an important one. What is the purpose of the present policy? The only purpose I can see is that it's meant to discourage marijuana use. Throw people in jail and cause various disruptions in their lives that

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aren't very nice to talk about; but the purpose, clearly, is to discourage marijuana use. Now, rhetorically, I would like to ask the question, "Why does the State of Nevada want to discourage marijuana use?" That may seem like an off-the-wall question, but I have been asking this question for 5 or 6 years and I have never received a satisfactory answer. I think it's a question that needs to be thought about by members of this committee. What is the purpose of the policy and why is marijuana use to be discouraged by the State of Nevada? As far as the effects of the present policy are concerned, I think the effects are a lot more well known than the purposes. The effects have been disruptive and costly. They have been spoken of before, and I won't repeat what has already been said about them in the past years.

The next overview I would ask the committee to consider is the obtaining of the costs and statistics of continuing the present marijuana policy. Now I have tried to find out how many felony arrests occurred in 1975 and 1976 in Nevada, and I was unable to find this. I don't understand why this information is not readily available. The arrests for marijuana were available, and the reason I wanted the number of felony arrests was to show what percentage of felony arrests are marijuana related. I think that would be an interesting statistic for the members of this committee to know.

Next, till now, there has been no testimony against marijuana, and once again, I have no idea what's coming down because every two years it changes. There's something new each time; I've noticed this. So, I would ask the committee again to use the article that was submitted to you by Assemblyman Goodman, the article by Norman Zinberg, in Psychology Today entitled "The War Over Marijuana." This article is one of the best, concise summaries of the marijuana question that I have seen in the past 6 years. On the second page there is a chart that lists the various reports on both sides of the question. On the left hand side there are the reports that are against marijuana and on the right hand side are the reports that are more favorable to it. I would point out that along the edge of the chart some of the more common arguments against marijuana are listed, motivational syndrom (this has been used before), chromosome damage and birth defects (this was used in Nevada), brain damage, psychosis, stepping stone to heroin, immune response, sex impairment, crime and the health hazards. Dr. Zinberg has, in very brief articles, taken each one of these topics and, in my opinion, overwhelmingly discredited these particular arguments as justification for continued punishment of marijuana related violations of the law. I would suggest that in any testimony that is heard against marijuana, that the testimony be heard, compared with this article, and then, if a new argument comes up, those who favor a change in the marijuana policy be given an opportunity to respond to it after researching it for perhaps a week.

Going on, another overview that I would ask the committee to take is to consider the new policy, whatever policy does evolve out of this committee and out of the Legislature, in the light

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of the judicial rules of evidence. In the past, the testimony against marijuana has not had evidence that would stand up in court. This is my opinion; this is the opinion of others.

I would like to go back to some other things that were said earlier in the hearings. First, I'd like to go back to the decriminalization, legalization, repeal idea. These are just words; there's been a lot of words used in the marijuana debate. Some people say "marijuana abuser", others say "marijuana user", some would say "marijuana consumer." But, these are all words in the various sides of the questions, rather than consider the words. One example would be "victimless crimes." We've spoken here of marijuana being considered a victimless crime. My contention is, and the contention of others is, that if there is no crime, there is no victim. If there is no victim, there is not crime, and in the case of marijuana no one has been able to, at this point, show that anyone has ever been harmed by marijuana use. The debate of whether marijuana is harmful or not is effectively over. It has been a long time in coming. There has been a lot of serious conflict between different kinds of people and different stations of life, but the debate, if you review the Zinberg article, I think it is easy and reasonable to say that the debate is over. Marijuana has not been proven harmful.

And going on, state funds are now appropriated to subject marijuana users to arrest, detention, interrogation, booking, incarceration, expense of bail, arraignment and costly attorney fees. A person charged with marijuana is severely punished long before trial. The use of severe police and judicial authority should be justified by evidence of harm. In the case of marijuana such evidence is non-existent. Expensive and lengthy government investigations in Britain, Canada and the United States have resulted in no established case against marijuana use. Public opinion has been primarily influenced by misinformation about the effects of marijuana use. The forty year pattern of discredited claims suggests the testimony was without evidence. Testimony without evidence can no longer justify subjecting marijuana users to severe police and judicial authority. Such punishment is colored with oppression. Marijuana prohibition has lasted over twice as long as alcohol prohibition, although marijuana was prohibited without a constitutional amendment. There is no reasonable cause to believe that marijuana use will be proven harmful in the future, and punishing marijuana users with promises of future evidence is equal to the idea guilty until proven guilty. Once again the assumption of harm has colored the deliberations on marijuana in the past.

I feel the way public opinion in the State of Nevada, as well as in the rest of the country, has been changing over the past half dozen years. I don't think it is unreasonable to assume that there is going to be some kind of change this legislative session. I don't think this is an unreasonable assumption. The question is what kind of change is going to happen. Now I have been backing AB 280 which calls for decriminalization in the

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wording where it calls for equating the use of marijuana by minors equivalent to the law that covers tobacco. In other words, the law that covers tobacco use by minors would also apply to marijuana and the last provision is that marijuana use could be restricted in public accomodation areas by the owners of those particular areas. Some people have said that Nevada is too conservative to make that kind of step right now. I have heard this particular argument a number of times. Nevada is too conservative to make this kind of a move. However, as others have already said, this is not an issue of conservatism or liberalism. This is a question of truth and justice. As far as Nevada being too conservative to make this more, I think that the bill itself is the most reasonable approach to a change of policy, primarily, because it is the easiest to amend. Another bill that calls for a reduction of penalties implicitly expresses the assumption of harm. If people are cited with a misdemeanor, whether they are arrested or not, if they are given a citation, their time is taken. They are punished, and I think the question is: Can the state reasonably punish people without explaining why? Again, I say I have asked why for a half a dozen years now, and I have not been given an answer that satisfies me and a lot of other people.

Marijuana prohibitioners have failed to discharge their burden of proof. The burden of proof is one of five legal arguments that I see that applies in this particular case. The first legal argument I see, is the original justification argument. I don't know the technicalities behind it, but there has been a Supreme Court ruling that if the original reasons that justified a particular law are found to be in error, then the law does not stand. Now to the best of my knowledge this hasn't been tested extensively yet, but it has been tested in other parts of the country. And, in this particular case, the original reasons for marijuana prohibition back in 1937 were crime, violence, rape and sanity and death. Since that time, we have had a long line of arguments and claims against marijuana. They have never been supported with verifiable scientific evidence. That is the first legal argument that I wanted to mention, the original justification.

The second legal argument is the doctrine of neutrality. The government is supposed to be neutral in all areas. Realistically we know that this does not happen. I personally know that it doesn't happen, but there is this doctrine of neutrality. Again, I would say, in past deliberations before the Nevada State Legislature, there has been something less than neutrality. I am not condemning it. I feel that I understand it in some ways, but there has been less than neutrality in deliberations concerned with marijuana.

I'll combine the third and the fourth legal arguments. They would be the due process clause in the constitution and the equal protection clause. I feel when people are punished without explanation, whether it is just taking up their time

by issuing them a citation or whether they are sent to prison or whether they have to go to court, this seems to me to violate the due process clause and equal protection clause.

The last legal argument I would like to talk about would be the burden of proof which is the first one I mentioned. On the burden of proof, I'd like to say that marijuana prohibitionists have failed to discharge their burden of proof. I have asked for this since 1971. They have produced no varifiable evidence of harmful effects, they have cited no varifiable scientific sources in support of their newest claims, they have produced no evidence that the present marijuana policy has helped to reduce or contain the use of dangerous drugs. They have produced no evidence that severe and costly punishment of marijuana users is serving the best interest of the people of Nevada. This burden of proof has not been discharged. The sincerity of marijuana prohibitionists need not be questioned, but sincerity alone can no longer justify punishment without proven harm. The Nevada State Legislature has been nothing less than cautious in its past examination of the official marijuana policy.

Now, I have a list that I am going to read, but now, given the results of lengthy and expensive government investigations, given the historical pattern of discredited claims, given the absence of evidence against marijuana use in the official Nevada record, given the varifiable trend of opinion of the people of Nevada, given the legal arguments against the present policy, given the harmful effects of the present policy, given the significant social and financial costs of the present policy, and given the absence of justification for the official marijuana policy, the 59th Session of the Nevada State Legislature would serve the public interests by changing of policy that was developed without any scientific justification. The Nevada marijuana policy should be altered to reflect varifiable scientific evidence. If no evidence of harm is uncovered, the Nevada marijuana policy should be repealed. This is the end of my statement.

Mr. Tom Mack, legal counsel for the Nevada Peace Officers Assoc. stated, before we begin, I think I have the inside information as to why the Senate didn't want to meet with you was because they didn't want a hearing on marijuana referred to as a joint session. Actually, as you are probably aware, because of prior communication with members of this committee and all other members of the Legislature, the Nevada Peace Officers Association does support a reduction in the marijuana penalty. In some respects then we agree with the conceptual principles in AB 253. However, we do not agree with AB 280. AB 253, in the NPOA's position, does not go far enough; however, I just will distribute to you again, perhaps to the Chariman, proposed penalty for possession of two ounces which is attached and marked Exhibit I. These are certainly not engraved in stone and we've had some discussions with the District Attorneys Association on them. There may be some problems with imprisonment. They are referring to it as a gross misdemeanor because of the

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criminal justice system would require just as much time as a felony. But, essentially, the peace officers do support a reduction, not a decriminalization, but a reduction in the penalty for the possession of marijuana. This may be a step that can be supported by essentially every person, or the vast majority of people within the state rather than going all the way to treating it on the same basis as tobacco, as AB 280 treats it. We have asked the bill drafters, and there is a bill in the drafting stage that has a reduction of the marijuana penalty, as set forth in the handout that I gave to the Chairman and the secretary. We would ask your consideration, in the interest of economics, that if you feel AB 253 is the better of the two proposals, we would suggest that you could incorporate into that bill, after line 31 on page 2, as an amendment, the use of a fine and some mandatory jail time. Perhaps this would be more acceptable to your constituency and the public welfare. We would propose that as possibly an amendment to AB 253. And, as I say, we conceptually support Mr. Kosinski's bill. That may be like saying, "Mrs. Lincoln, how did you like the play?" But, I think that it does represent at least a conceptual approval or agreement that there should be some change in the penalty for possession of marijuana when it is of a small amount. And, I would be happy to try and answer some questions.

He then introduced Mr. Crump, President of the Nevada Peace Officers Association.

Mr. Charles Crump stated, I'm not very used to this kind of thing. I'm not an attorney and I'm not an expert of any kind; I'm a peace officer. I have been since 1949, and I am President of the Association statewide, which constitutes about 2,000 members. We feel, as cops, that marijuana possession, use, what have you, should remain a crime. I've sat here today and listened to the things said about marijuana, and I am wondering if this is the same kind of stuff that I've seen bring people to the point that they couldn't tell a monkey from a monkey wrench only by virtue of the fact that one climbed a tree, but they weren't sure which. Marijuana does make people do screwy things. You do get drunk on it. Its abuse is, I think, beyond question, significant in crime in the United States today. I can't stand here as an expert with statistics, but I can tell you from experience in my work of over 20 years that it has used up a very substantial amount of my time, and of the time of my peers. And, I will get off of that right now. The only thing that I want to ask is that you consider that it remain a crime, and I think chiefly because there is no practical way at this time that we can discover the effects of the abuse of the substance. If we were able today to subject a man to a breathalyzer, the way we do alcohol, it would certainly be reasonable to consider even decriminalization. But, I am asking you to consider the fact that a person can be bombed out of his head on marijuana, and it does intoxicate you, cause fatalities in traffic or otherwise, and, there is no practical way at this time, to identify what caused that person to be deranged. I am saying we can't give a free rein to this substance. I've heard

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testimony today that technology exists for such tests, but I've also read many studies on it and I've come to the conclusion that that position is decisively ambivalent. There is just no practical way, beyond some sophisticated saliva tests, today that an officer on the beat could determine whether or not a person had a significant amount of marijuana in his system so that he could become criminally liable for abuse of the substance. And that's the position that we have today and that's the reason we're asking you to please consider our position that we feel that marijuana should remain a crime, but a crime that can be enforced. Obviously, you've all seen, as we've seen statewide, judges are not sending people to prison for six years as the present law calls for for smoking a joint of grass. They are just not doing it. As a consequence, the law, as it stands is being subverted. It's being met with a lot of cynical amusement by the young people today who are slapped on the wrist and returned to the court system repeatedly under deferred judgment, probation, probation violations and no real time. Some small disarrangement of their life, but not that much. And I feel, and the police officers of this state, whom I represent feel, that the law and respect for the law, as it stands today, is being totally subverted. We're asking for a reasonable law that can and will be enforced. Thank you ladies and gentlemen.

In response to a question from the panel concerning regarding possession, Mr. Crump stated the enforcement aspect would be different. They are sworn to uphold the law as it stands.

In answer to a question regarding his opinion of reducing penalties, Mr. Crump said he was certain that they would be recommending reduction in penalty. I think, of course, this is a really wildly academic question. He stated he didn't know, but the peace officers that he had talked to who were deeply concerned about this feel that the penalty for marijuana, as it stands today, is far too harsh.

Mr. Vern Calhoun, Chief of the Division of Investigations in Narcotics for the State of Nevada stated, I didn't realize that we were getting on a list in order to speak here, otherwise I would have come in much earlier. I do request your listening to a different viewpoint because I am here to ask that the first bill, to take away any penalties for the use of marijuana, suggested is against a Narcotics Convention Treaty with the United States. As a member of that, we are required by that treaty to keep a penalty and make marijuana illegal in the United States. I would not like to address the issue of what, I think, should or should not be a penalty. I would like to give you some information. Because as Chief of the Division of Investigations in Narcotics, I have been involved in looking at this issue for quite a few years. I felt that the Legislature would be considering this question next time. I did try to do some homework and give you some specific answers to some questions.

I am, also, a peace officer and there are many disagreements

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among peace officers on what should be done. I have heard reference to many studies. I have heard reference to many individuals. I have heard reference to many solutions to this. It has always amazed me that a single bit of information can get so turned around and get so misconstrued, both by an individual and by the public mind. I refer to the statement made about Chief Davis down in L.A. I was curious to know what would happen in California if the penalty for marijuana would be reduced. I would like to quote an article by Chief Davis, February of 1977, a little over 13 months after California went to the decriminalized system. He says, "The governor and legislators were warned that a liberalization of existing sanctions would result in an increase in narcotic overdose deaths because of the influence marijuana has as a potential introductory drug to the poly-drug culture. The same political representatives were told that the new law would stimulate the illicit market and increase the number of users. Unfortunately, all of this has happened. During the first quarter of 1976, marijuana seizures in the City of Los Angeles increased more than 500% when compared to the same period in 1975. Opiate overdose deaths in Los Angeles County will approach 500 in 1976."

I checked with the Oregon State Police to ask them if they could give us some advice and information as to what has happened in Oregon. I would like to again quote. "It was the legislators intent that by decriminalizing possession of small amounts of marijuana the police officer would have more time to devote to enforcement of the drug laws in relation to stronger drugs. However, we have found this has not been so as we are spending more time enforcing drug laws than we were prior to the liberalization law, as born out by the percentages of increase each year of those individuals possessing less than one ounce of marijuana." He says, "Our records do reflect that our members are seeing more marijuana and encountering more individuals using this toxic substance than in previous years." The number of arrests in Oregon for marijuana for the total state account for about 78% of the drug arrests in that state. In Nevada it is about 75% of the arrests. In Oregon since this law has been effect, the difference between 1975 and 1976 shows a 36% increase in the number of arrests for marijuana and for all drug violations they show a 21% increase. That's not quite as startling as what Chief Davis says, but it does go up. Last year between 1975 and 1976, the number of drug arrests for marijuana in the State of Nevada went down by approximately 13%.

There are many things I realize that you should consider. I have brought along the chemist from the State Laboratory who sees, in one way or another, just about every case where a violation of the law involving drugs within the northern part of the state and most of the small counties. He has some information which I believe will be of value to you when you consider this matter here. As a state agency, we do get requests from a lot of people

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to do something about the drug problem. In our way of working, we very seldom get involved with doing cases against the so-called marijuana user or possessor of small amounts of marijuana. The local police departments, both in Nevada and all over the country, account for most of the arrests for small amounts of marijuana. The uniformed officer on the local police departments account for most of those arrests. And, I have a feeling from my discussions with these people that they would like to see something done about that particular item.

I would like to clear one more area which is a tremendously complicated matter. It is true there have been eight states who have decriminalized or changed the penalties for marijuana. It is not true that Nevada has only a felony penalty. As each of you who passed the laws know, the penalty for marijuana in this state does have a consideration for those under 18, that their records can be sealed and there can be other ways to deal with young persons who have small amounts. I have personally been involved with cases where we have juveniles that have been handled like that who are 25 years old. It may not be right, but it has happened. So our penalties are not the strongest in the nation, nor are they the only ones. During the last year there were five other states that considered the marijuana question and every one of them turned it down when they heard from all of the different sources of information. The tide on this question may or may not be changing. However, those states, New York, Connecticut, Iowa and others, have considered this. New York had hearings over a year long. They had some experts from all over the world, and they turned it down. What that means, I do not know, as I said I am not a particularly vindictive or hard nosed person, so I do not know what the penalty should be. I do know that it should be controlled, however. Do you have any questions, gentlemen? I would be glad to attempt to give them an answer.

In answer to a question regarding juvenile records, Mr. Calhoun said the law spelled out very clearly the procedure regarding juveniles and depending upon the judge and the district attorney, they can be sealed. There is absolutely no record left as long as the person does not get involved again.

In answer to a question regarding his personal feelings in this matter, Mr. Calhoun stated it was his position that the law should be kept at least as it is. He said the legislature will be receiving requests to strengthen other drug laws. He felt that, in looking at this whole situation, marijuana is not an innocent little drug which does not do any harm or anything like that. He thinks that it is a dangerous drug and that our penalties should remain at least the same.

In answer to a question asking why the percentage of arrests had gone down 13% in Nevada, Mr. Calhoun stated: I could just give

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you an opinion. The district attorneys are trying to avoid that kind of thing and generally I think that's what's happening.

In answer to a question regarding what happened to make it go up in Oregon, Mr. Calhoun said: I have heard a variety of different reasons as to why that is happening, and again it is just an opinion. I have been told by people who work drug cases where they get involved with this, they say that yes they do have more people come in the area. The attitude by a lot of people is more liberal, therefore, it increases the usage. About the only deterrent you have to drug use in the United States here is a non-sanction by the system. And every time the system says that well it's not quite so bad, then more people are drawn into that.

If you legalize it completely, I am quite sure and convinced that the problem would be similar to alcohol as far as medical and physical dangers. I am sure there would be an increase in the insurance rates because of increased accidents, and we could go on and on and on.

In answer to a question regarding having it prescribed by doctors for certain medical problems, Mr. Calhoun said: Again, I can only go by what I have observed. It still seems to be the consensus of most of the doctors that they do not feel that it's got a medical use. I don't know. I'm not a doctor. However, what controls were there, we could certainly live with any controls that are set up. As a matter of fact, we did a contract with someone to train dogs where they had to obtain marijuana and we did that. Certainly as long as controls are there they can be handled.

Mr. Calhoun was asked his opinion on the amendment submitted by the Nevada Peace Officers Association. He stated: Since we have about 2000 peace officers in this state, and we have the representative from them back there, it is kind of hard to speak for every one of those persons. I am a peace officer myself and a member of that organization, and I do not particularly agree with this, and it is my opinion from talking with those people that what they are asking is that something be done when someone is caught with marijuana and not just turned loose and forgotten. And I believe that this is the end result of that feeling. Not that they want to reduce the penalty, but they just want something done because they are concerned about the problem. He added he thought the current system was certainly not the most satisfactory system.

In summation regarding the arguments presented, Mr. Calhoun said: I believe you can probably take all these arguments and apply them to any crime we have. So, therefore, it is not just marijuana. However, if there is a law on the books and it is never enforced, obviously there will be those who tend to disrespect it. But I would point out that, and this always ends up in some kind of an

argument kind of thing, anything you go into on this becomes an argument kind of situation. I pointed out trying to find out what has been happening based on our observation. I can tell you for a fact that when we are doing undercover work and talking with people who are in the drug scene, they tell us they do not want to come to Nevada because they are afraid of the penalties. So I believe that has to be some deterrent to the use of marijuana and other drugs in the State of Nevada. This is not speculation, this is happening when we work in cases involving narcotics and the use of drugs. The second thing, we do not find anybody in investigation that uses just marijuana. I certainly believe there are people like that, however, when you are talking to the criminal element and all this kind of thing, when you use marijuana there is other drugs around. I can't go out and say if you take three marijuana cigarettes it is going to kill you, nor can you say you can take three valium tablets and they will kill you. The danger drugs are all varied and quite different with the kind of drug it is. There are some extremely critical drug problems in this state, not just with marijuana. That just happens to be there. If we talk about physical danger I think our most serious problem in this state is with pharmaceutical products. Definitely not with marijuana. But again that is the physical danger when we talk about people dying from the use of drugs. We don't know how many people marijuana would kill because we can't tell. If it's in a car accident there is no way you can test for it. If there is a test where somebody can show us, I would certainly be glad to show it that you can tell what if someone has been smoking and using marijuana or and what particular degree of influence they have.

In answer to a question asking if he would agree with the premise that the penalties should probably be more severe for dealers in drugs, Mr. Calhoun said: I think that since they are part of our system, definitely I think the seller or the trafficker or the people who are preying on the people who use drugs, certainly, they should receive more attention. Drugs, and I do not mean to preach on it, but when you get into drugs you don't have that choice. And people who take advantage of that I believe should be dealt with very severely.

Lloyd Whalen stated: I have been in the back and I have listened. And, you definitely have a problem. That is the first of my observations. President Nixon felt that he had this same problem at one particular time during his administration and he appointed some kind of a subcommittee or task force, whatever you want to call it, to study the problem, and he gave them all kinds of money and a couple of years, and they came back and I'm sure all of you read in the national headlines that this task force said that marijuana should be liberalized, if not out and out legalized. And Nixon, in his own inimitable style, said, "You can take your result of these many dollars and many years and stick it, because I'm

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not going to recommend it." Okay, now one of the few things that he did that made any sense to me during his administration was that particular comment right there. He had a few good scientific advisors, and they said this task force ran around and studied marijuana. This is true, that's exactly what they did. You have heard people testifying here on marijuana this morning. Well, in my opinion, there is marijuana and there is marijuana. The ordinary street type marijuana that we're talking about in here this morning, and that task force studied for a couple of years, had a concentration of the active ingredient which is tetrahydrocannabinol at approximately 0.5 to 1% active ingredient in the marijuana that they studied. This is the normal street type marijuana that we are talking about. They said in their report that one marijuana cigarette of this 0.5 to 1% THC is approximately equivalent to one ounce of alcohol. Everybody in here has been equating alcohol and marijuana. All right, this task force came right out and said one marijuana cigarette is not worse than having a drink before dinner, and I agree with this, I really do. On that basis, if you can say there is a use for alcohol you must then say there is definitely a use for marijuana.

However, lets stop and consider that active ingredient in marijuana that we are saying there is a use for. If I were used to smoking the run-of-the-mill street type variety at 1%, and somebody gives me a "thai stick" from Thailand, this is a little bamboo stick upon which they actually, meticulously, tied some marijuana flowering tips. Now this "thai stick" will run approximately 6% THC. Okay. Now, if I am used to smoking my little 0.5 marijuana and getting up and walking over to the dinner table, I have no problem. Or if I am used to having my highball before dinner I can drink that and walk over to the dinner table and I have no problem. But if somebody slips me one of these 6% THC content cigarettes and I smoke that one same little joint before dinner, it's going to be equivalent to six to twelve of those normal cigarettes that I have been smoking and I may have trouble getting out of my chair, let alone getting to the dinner table. Now this is a point that I think is very, very valid. The quality of the marijuana in Northern Nevada during the last just six months has increased tremendously. We are seeing some stuff that's coming in from Hawaii that's routinely running 6 and 7% THC. You have heard this morning the talk of use and abuse. Well, my opinion is that this higher THC content is there for one reason and one reason only, and that is abuse. We have a problem in our law right now whereby we equate the concentrated extracts from that plant genus cannabis as being marijuana. We say hashish, which should run in the neighborhood of 12 to 15% THC is marijuana. We say that hash oil, which is an extract from marijuana and has a THC content of up to 90% is still just marijuana. I think you have a definite problem: In viewing marijuana as marijuana street type variety, As marijuana the good stuff from either Vietnam or Thailand or Hawaii, As viewing marijuana

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as the concentrated extracts which are there for one reason, abuse. And that's my opinion right there. You have heard talk this morning that marijuana has a medical use. Well, if we are going to talk about marijuana having a medical use, why does it? Because it has that active ingredient, THC, in it. Why can we not allow the use of that active ingredient, which, incidentally, is classified legitimately as an hallucinogenic drug. If you administer that in any dosage units in excess, you are going to have hallucination as a side effect if you are treating glaucoma. Consequently, were I in your shoes, and had to make some type of a recommendation, I think I would not go for any type of legalization of marijuana. I think I might go for some type of a liberalization of those existing marijuana laws, if they pertained to that marijuana that is a street type variety. That stuff that I said there was a use for, if you can assume there is a use for alcohol. I don't know how you're going to put that in there because, in my opinion right now, there is no reasonable determination that can be used to detect whether or not an individual is indeed under the influence of marijuana. Even if you can say the THC can be seen in his system, where is that legal-illegal limit? It certainly isn't in our statutes. Is he under the influence of it simply because you can detect it, well, we say on alcohol no, he has got a limit where he is not intoxicated and then a limit where it is either way and then above that particular limit he is legally under the influence. We do not that type of situation on THC. We do not have the facilities to make a quantitative determination of physiological fluids, and even if we did have, we don't have any interpretation of those results back to whether or not this man is under the influence of marijuana and if he is, how far. I guess that's about all I wanted to say. Are there any questions?

A member of the panel asked if he meant that there is available to doctors the same properties, or chemicals or something in lieu of marijuana that can be used for a glaucoma problem. Mr. Whalen said: Absolutely. They can either use a purified extract from the marijuana plant itself or they can use a synthesized THC, since that particular drug has been synthesized. It's not commercially synthesized right now. But, if that medical use does indeed exist, why hand somebody a whole cow to consume when all you want is just a little bit of its cream. Why give them the whole marijuana plant when all you want to do is dose them with the cannabinoid constituents. I think that if legality is there, it should apply to the active ingredient rather than to the marijuana plant.

Mr. Price: I want to apologize if I missed this. Can you tell me in plain, ordinary language the bottom line of exactly why or where marijuana is any more dangerous to the State of Nevada as a controlled substance than, for example, alcohol which we have been relating it to?

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Mr. Whalen: As I said, in that ordinary, run of the mill street type variety of marijuana, we can equate it with alcohol entirely, and if you assume a use of one you must assume a use of the other.

Mr. Price: So what you are really saying on the bottom line is, if we keep on that same comparison, which I don't know why we do, except it seems to me that both can be as dangerous or both can be lack of dangerous, you know, depending on which side you happen to be. We get alcohol in all different degrees, for example, if you were having a glass of wine on this particular evening and decided to have some orange juice with 180 proof or 190 proof grain alcohol, you would be hit with the same thing. So what you have been saying is if we, if the Legislature, should decide to address this by reducing penalties or making it legal or whatever, it may be that you should somehow add into that some measure of what you are talking about, that 6% or 2% or nothing, if that is possible.

In answer to Mr. Price, Mr. Whalen said that He didn't know how one could logically do that, stating that the abuse of alcohol is predictable. When you reach a particular blood alcohol level, till you reject, pass out and you don't bother anybody except who cleans up the mess the next day. On the abuse of marijuana you can pass out on the floor just like with alcohol, but then again, you may not. That degree of predictability is not there with the tetrahydrocannabinol as it exists with marijuana. You have readily available in almost any municipality instrumentation to detect the level under which you are in the influence of without alcohol. You do not have that level available nor do you have that instrumentation to detect it even if you did have that level with the THC.

Mr. Price then asked, is the statement that Dr. Ford had made earlier then that conceivably within a community you could have a centralized place where if it were necessary to determine, would you say that is an inaccurate statement?

Mr. Whalen answered, I'm saying that I don't agree with it. I'm saying that technically yes, you can detect it. You can technically make an atomic bomb in my laboratory, but that doesn't mean I have the instrumentation or the capability to do it. I know of no laboratory in the State of Nevada right now that can detect THC in the blood specimen drawn from someone who is under the influence of marijuana.

Chairman Barengo then said, I think what Bob's trying to get at is, are you trying to say that possession of certain amounts of THC concentrates should be made a different class of crime.

Mr. Whalen answering, said, if I were going to do this thing, Mr. Barengo, I would leave those extracts from that plant genus cannabis as a felony. If somebody wants to use marijuana, let them use marijuana; not the extract therefrom because of the abuse factor that goes with it.

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If they want to use the marijuana and you want to make it some kind of legal for them, I think your misdemeanor situation with a quantity for individual use may be the best shot. Were I going to do that, I would say misdemeanor on the first offense, gross misdemeanor on the second offense, and a felony on the third offense, because if these guys are abusing this stuff, I feel they are jeopardizing my rights straight away. I have kids running around and I hope that those kids would be clever enough or intelligent enough or curious enough to want to try this to see what it is all about. I would hope they would have that type of curiosity. But, at the same time, I would hope that I would have instilled in them that if they do this thing it's going to be out of curiosity on a one-shot basis. If they get caught, I'm sorry kids, that's tough. Go pay your fine and you pay it yourself. If you use the stuff, if you get caught the second time, I think it should be some type of stiffer penalty. If you are caught the third time you are using and probably abusing this stuff, consequently, if you are driving under the influence and you run over one of my kids, I think my rights are definitely jeopardized. Were I going to do it, that's how I would handle it.

Larry Hicks, Washoe County District Attorney and President of the Nevada State District Attorneys' Association testified next stating: Let me say first, that I think that many of my comments are going to echo, to some extent, the comments which were just made by Mr. Whalen. I would indicate that I endorse those, generally. I would like to comment first of all on what is happening in Nevada today in cases in which a possession of marijuana offense is committed and prosecuted. It seems to me that there has been some over-generalizations and and exaggerations in terms of what possession of marijuana offenders face today. Although there is a felony defense on the books which allows a penalty up to 6 years in the Nevada State Prison, actually, our penalties in Nevada stretch all the way from a felony offense which I just mentioned down to no conviction of any kind. I will tell you now that in my opinion, and I can certainly speak to the experience of my office in Washoe County, that over 90% of all possession of marijuana cases result in no conviction at all, and those cases are all prosecuted. The reason for that is because of what we call the deferred sentencing procedure which allows for a person to go into court and be either convicted or plead guilty to possession of marijuana. I'm talking about a case of a small quantity, typically, although the quantity isn't really limited as I recall from the deferred sentencing procedure. If that be the case, what typically happens is the person enters his plea of guilty, he goes into court and he is sentenced and what the court does is refuse to accept the guilty pleas or refuse to find the defendant guilty and give him the deferred sentence. With the deferred sentence goes a period of probation, typically that would be anywhere from a year to 2 years. During that one to two year period, if the person stays out of trouble and even in some cases where they have been in trouble, the individual who has entered his plea of guilty for possession or been convicted of possession has remained out of trouble, has not violated generally speaking the terms and conditions of his probation, the court refuses to find him guilty or

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refuses to accept the guilty plea and the charge is dismissed. The effect then is that there is never a conviction of any kind for possession of marijuana.

I think that this is interesting not only because there is such a large percentage of cases within the state which are resolved this way, but that in, Washoe County, certainly as I indicated, this approaches 90%. Also, that this is the procedure which is normally used even though we have already a misdemeanor provision on our books. Under our existing law today, there is a provision which allows possession of less than one ounce of marijuana by a person under the age of 21 years old to be found guilty of a gross misdemeanor offense. Not to be found guilty of the felony. Well, I'm not aware of that ever happening in Washoe County. The point being that these people who are possessing marijuana and being convicted of it are going the deferred sentence route over the misdemeanor treatment that already exists. In other words, we do have available a very liberal treatment for possession of marijuana and this is what is being used almost all of the time.

I am sure that there are people in the Nevada State Prison who have been convicted of possession of marijuana on a felony level. Obviously, if they are in the state prison, it's been treated as a felony, but I will also state that I have never seen a case yet where that would happen or where that has happened where a person was not involved in a large amount of other narcotics related activity or an extremely lengthy criminal record, or perhaps some other type of conduct that is particularly inflammatory to the criminal justice system. It would not be doing justice to the State of Nevada or to our criminal justice system to say, while people are in the Nevada State Prison because they possess marijuana and that's a terrible thing.

I think Mr. Campos is here and might be able to comment on it further. Those cases where people go to prison for possession of marijuana are not the kind of cases we have commonly heard referred to here today. The situation where a member of the citizenry is in possession of marijuana cigarettes or a small amount of marijuana. That's not the kind of case that ever goes to prison, and I'm sure that any statistical analysis will reflect that.

Let me comment in regard to juveniles because there was a question in regard to juveniles. Juveniles under the age of 18 years old today are prosecuted within the juvenile system, at least in Washoe County, for the delinquent act which happens to be marijuana in that type of case. Those people, I'm not aware of any of them being sent away to reformatories and they are very loosely treated, I think, within the juvenile probation system. And, at the conclusion of the whole thing, because they've been in the juvenile system there's never a conviction, there is never a record, there is never anything public about what happened to those juveniles. There also are a large number of marijuana offenders between the ages of 18 and 21 years of age who are certified as juveniles and proceeded against. I'm speaking largely of Washoe County because

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that's where my experience lies. As you may be aware, we have a provision in our Nevada law that allows a person between the ages of 18 and 21, who would otherwise be an adult and be treated as an adult, to petition the court and request that he be treated as a juvenile. We run into that and in marijuana cases, too, and there are many, although I don't have the number for you, who wind up being certified as juveniles. And, again once certified as juveniles, the treatment of them is very much the same as the other category of juvenile I mentioned to you, and that is that there is no conviction, there is no record, all records are sealed and there is nothing that goes on this person's record.

Let's talk about the other case where a person is convicted of felony possession of marijuana, for one reason or another. I would say that in my experiences this may result in the following manner: Either the facts were aggravated, the individual was involved with something that was particularly aggravating or perhaps he was on the deferred sentence. In other words, the court set a period of probation giving 2 years deferred sentence and somewhere along the probation he got into trouble again. Well, at that juncture, the court may bring him back in and take him off the deferred status, find him now guilty of the felony of possession of marijuana, but impose probation, and this is what I believe has happened in most cases. So again, even though this person who now has the benefit of the doubt once, who violated that benefit to some extent in the same instance is not sent to prison. He is merely taken off the deferred status and put on probation. At this point he does stand convicted of a felony; but, I think it's worth noting to remember that when any person serves probation on a felony offense and serves that probation satisfactorily, at the end of the period of probation he receives an honorable discharge of probation. An honorable discharge from probation results in a dismissal of the conviction. So again, even in the more aggravated situation, you are talking about someone who although once convicted of a felony then has that conviction dismissed at the end of this period of probation. Only until you got to the further category of prison would there be more aggravated results. So I think the thing most worth mentioning here is that, if your view is that Nevada's law in regard to the possession of marijuana needs to be corrected because the penalties are too strict and it's terrible that it's a felony offense, I would question the validity of that premise. I don't think that upon examination of the convictions in the state of Nevada you will find felony convictions, that you will find very many people who are ever convicted of the felony. And, certainly, a miniscule percentage ever go to prison or jail because of it.

Referring specifically to the bills which are involved here, I agree very much with Mr. Whalen, and that is in the sense of concentrated forms of marijuana, commonly referred to as Hashish or the concentrate THC. Those are extracts from marijuana, and in my opinion they are very dangerous. They are very dangerous within the drug culture, more so than many of the scare drugs, and I'm not going to go through the list of them all, but I can tell you that, in my opinion, the concentrated forms of marijuana

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which Mr. Whalen was talking about are very dangerous. And, they should be treated as felony offenses. Now, if either one of these bills were enacted as then have been drafted, we would no longer have felony offenses available for possession of those extract substances.

I think that my strong recommendation and strong feeling is that certainly for extracted substances from marijuana that the felony provisions, or at least, the availability for felony prosecution should remain. We should have this feature in those types of cases. And, we are running into, I believe Mr. Whalen indicated it in his testimony, hashish cases. My office has recently been to trial on a number of cases in regard to hashish and hash oil. Hashish is the dry concentrate and hash oil is reduced to a liquid substance. And, we are seeing that in Washoe County now. We're seeing it for the first time. I think it is a reflection of the liberalization in the states of California and Oregon of some of the liberalized marijuana laws. Insofar as position is concerned, I would state this: On behalf of the State District Attorney's Office, State District Attorneys' Association, it is the concensus, although not unanimous, that there is no objection to the reduction to basic possession of marijuana to a misdemeanor offense. We are not recommending it, but we are not opposing it. In that sense, I would say that there are analogies to our position in the State Peace Officers' position. Let me comment a little bit on the bills which are involved and also directing my attention to the proposal by the Peace Officers Association. AB 280 in regard to legalizing marijuana, as I've indicated, I would find it objectionable on behalf of my office and also on behalf of the State District Attorney's Association. And, that would be a total. In regard to AB 253, the concept of citable possession, citation for possession for less than one ounce of marijuana, I believe that that would be alright in the sense that I would agree that the possession of marijuana in the simple possession type of case where you have less than one ounce and the absense of other aggravating factors. That a citation may be appropriate, but more appropriately the offense be reduced to a misdemeanor. This is in agreement with the State Peace Officers' Association. I don't personally believe that there should be a limit on the amount of the fine. I think this should be treated as a misdemeanor, like any other misdemeanor. Leave it to the court to decide -- anywhere from 1 to 6 months in the county jail and a fine of up to \$500. That's what is available if you run a stop sign today. I can't see why possession of marijuana should be treated any differently. We all know that, as a practical matter, the justices of the peace within the state take all the facts of the case into consideration. And, in all probability, for possession of marijuana offense, I would imagine that there would be a fine anywhere from \$50 to \$400. I think it would probably be an exceptional case where a jail sentence would be imposed. I don't see anything wrong with that. A J.P. should have the flexibility to treat this misdemeanor offense the same as he would any other misdemeanor offense. I'm not aware of any abuses within our JP system which would indicate otherwise. I don't have any objection (I'm speaking personally, on my own behalf rather than on behalf of the state D.A.'s) to a minimum jail time in regard to possession of marijuana.

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Thirty days as they propose may be excessive, I don't think that our jails could carry the load. But, I think that something more than a slap on the hand is in order and a short mandatory jail time of maybe a few days to a week might do a lot to make these people think about what they've done and head them back in the other direction. I do think that the Peace Officers' proposal might be more effective if it was limited to a maximum of 6 months in the county jail, which would, therefore, make it a misdemeanor. The way they have it proposed right now, it would be a gross misdemeanor, and I question the validity of that because it would require us to then go through all the criminal procedure that we go through with felony offenses. That is, complaint, preliminary hearing, transfer to the district court and then arraignment and trial in the district court before a jury of twelve. I don't think that that is a good proposal. And, I feel that the law would be better served if it was just limited to a maximum of 6 months in the county jail. Going along with what Mr. Whalen said, I think that there should be aggravated offenses for second offenses for possession of marijuana. I agree with Mr. Whalen personally, that the second offense should be a gross misdemeanor and subsequent offenses should be felonies. Although I also would say that we should continue to have our deferred sentencing procedures on our books. I think that they work well. They do resolve the congestion in our courts somewhat and probation departments somewhat. But, I still think, in the long run, they still work well. I would say that anything bearing upon the sale of marijuana should continue to be a felony, anything bearing upon the possession of substantial quantity or possession of a concentrate should continue to be a felony and I think that an officer should have the capability of doing more than issuing a citation in the misdemeanor case. If he has probable cause to believe that there may be more than an ounce involved or that there may be more than the simple citable offense involved, I think he should feel free to arrest this individual. I don't think that he should be limited to a citation. That is one of the problems with AB 253. I think that the citation avenue should be available to him because there's certainly going to be cases where citation and the consequent saving of the officer's time and the cost of the criminal justice system would indicate that a citation would be a very good way to go. But, to require that in every situation seems to me to be very unrealistic and not in the best interest of the state's criminal justice system. Essentially that's my position in regard to this and the position of the State District Attorney's as I've indicated.

Mr. Barengo: Any questions?

Mrs. Wagner: I have about three, Larry. The first one being: You have addressed yourself to the situation in Washoe County primarily. Would you agree that possibly the judgments handed out in the state certainly would depend upon where one lived? This was testimony given before. Would you agree with that premise?

Mr. Hicks: I would agree with the premise, but I would say that this exists in every criminal offense that we deal with in the state. There are different values within each community, and I'm not so sure that different communities should not be entitled to pass on their values and so forth within their communities in terms of their judgments. And, this is true where there's burglary, robbery or possession of marijuana or rolling a stop sign.

Mrs. Wagner: The other question I have is in regard to the Nevada Peace Officers recommendation. Part of it would make it mandatory that any person convicted shall be imprisoned no less than thirty days. You have told us that in many instances, at least in Washoe County, that probation is given on deferred sentence, whatever. Would you suggest that possibly this current proposal might be in some instances harsher than what is being handed out at this point? In other words, it is mandating that these go more than thirty days, or at least thirty days.

Mr. Hicks: In terms of the everyday, run of the mill possession of a quarter of a lid or three or four cigarettes, this penalty certainly would be much harsher than what the State of Nevada has experienced at any time over the past five years.

Mrs. Wagner: And do you have any idea--because I have talked to some of them--how the district court judges in Washoe County feel about the current laws involving marijuana?

Mr. Hicks: This is entirely speculation on my part because I haven't taken a poll of any kind, but over the years, of course, we get to know the judges pretty well, I would hazard a guess, and believe me, that's what it is, that their position would probably be somewhat along the line of the State District Attorney's. In other words, the ordinary type of possession should be treatable as a misdemeanor offense and something involving concentrated forms of marijuana or something indicating possession for use or possession of a larger quantity should be treatable on a felony level. But again, I'm just guessing at that, but I have heard some comments which I think would be consistent with that.

Mrs. Wagner: Thank you.

Mr. Hicks: Thank you very much.

Bud Campos, Director of Parole and Probation, State of Nevada, stated: I'd like first of all to very briefly call your attention to Page 1 of the handout I've given you which gives you an accurate description of the convictions for possession of marijuana cases in calendar year 1976. (This is attached and marked Exhibit J.) As you can see, out of 151 convictions, 9 individuals were sentenced to prison, 142, or 93 percent were granted probation and

then the others were handled by fine. Of the convictions, 99 persons were convicted of possession of a quantity of one ounce or less. Now this is not specified according to current law, we just went through the cases and saw how much marijuana was involved in any particular case. By county, all persons convicted of possession of marijuana in Clark County were granted probation, 3 cases were sentenced to prison from Washoe County, 5 from the balance of the counties. I guess I have Elko in a separate category of one case because I was not able to identify the amount of marijuana involved in the Elko case. We had one probation revoked last year where our only charge against the probationer was possession of marijuana, and that was in Washoe County. Of all the persons we have on probation, which is right around 1800, only one revocation occurred as a result of our finding additional marijuana on the individual. This would be all cases of probation, not just those cases where they were on probation for marijuana originally. Now, on Page 2 of this brief report, it gives an account of those 9 people that were sentenced to prison. And, as you can see, in all cases those were people who had other counts dismissed against them, sales, burglaries, what have you, all with the exception, again, of Elko County, where we are not able to specifically identify that particular case. One case down here on the bottom where the amount of marijuana involved was 300 pounds, etc. This is the situation that we have in Nevada.

This report is not significantly different from surveys we've done in the past. I think it points out, as far as I'm concerned, some very real problems to us, although you'll get disagreement on it, and to most people who carry badges, because regardless of how possession of marijuana can be treated, it is, nonetheless, a felony on the books. We try to explain to people, particularly young people, what a felony is and we start off by indicating that felony is a very serious crime against the people, etc. etc. etc. Well, obviously, it's not treated that way. We arrested probably somewhere in the neighborhood of 100 people last year for possession of marijuana and we only got one revocation. The rest of them came away laughing at us. It puts people, I think, that carry badges in a position where they are not respected, where the laws themselves are not enforced by the other entities of the criminal justice system because of priorities and various other things. It does put us in the position of being the bad guy, so to speak, and you know, carrying a badge goes along with being a bad guy a little bit, but not to this extent. All these things are a matter of degree more than anything else. Most district attorneys are not in a position to pursue these laws.

In 1975, there were 2491 arrests made in the State of Nevada for marijuana offenses and 151 convictions in 1976; two different years, probably pretty comparable. Those marijuana cases do include sales, they're not broken down. The Crime Commissioner

currently wasn't able to provide us with that data. But most of them, of course, would be possession cases; 2491 arrests for marijuana. The cases are not being vigorously prosecuted. In fact, they are hardly being prosecuted at all, unless there are other circumstances involved. So, I guess if a person wants to use marijuana and avoid prosecution, they can check with the current workload of the D.A. and if they find he's got 4000 felony cases pending, it's probably pretty safe to use marijuana. One of the things that we found in this current study, contrary to popular belief, was a very high proportion (about 40 percent of the convictions for possession of marijuana in Nevada last year) of persons over 30 years old. So, it's no longer just a crime committed by teenagers. Now our data does not include people under 18. But, in comparing over 30 with ages 18 to 30, about 40 percent of all convictions were people over 30 years old. We had a supervisors' meeting of my people statewide about two months ago, and I asked them very candidly for their opinion on a reduction to a misdemeanor status and they were behind it 100 percent.

I have some mixed feelings about the whole thing myself. I resent very much being placed in a position where I have to enforce a law that no one else is enforcing. I feel like the Legislature is not dealing me right when they do that to me. As a peace officer, if you see a felony, you have to take action, and then nobody else does anything about it, so you're the whatever--whatever the current name is. I frankly would either like to see it reduced to a misdemeanor, in other words, citable, and punishable as misdemeanors are punished. I think if down the road this is too severe, we can take another look at it. Certainly the experiences in Oregon or California haven't convinced me that we ought to turn our backs on it, and assume everything will be all right. The data from those states is just not reliable at this point.

I would say, if we don't do that, if we don't reduce it down to probably where it should be, then I would like to see a Joint Resolution coming out of both houses to the criminal justice system throughout the state to enforce the laws as they stand on the books. Or allow police officers to ignore them. Pat Murphy, who was Commissioner of New York Police a few years ago, came out with a statement that his 32,000 uniformed staff was no longer going to enforce the bookmaking laws because all they did was cause corruption on the force. Half his people were on the pad and the other half were disgusted because nothing happened to bookmakers when you arrested them. I can't compare the marijuana laws with that, but nonetheless it is the position we are put in when we are asked to enforce laws that nobody else is really that interested in.

In answer to a question regarding his feeling about a gross misdemeanor, Mr. Compos stated: I think if you have an ounce or less of marijuana, if you can be punished by up to six months in jail,

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that's probably punishment enough. I don't think that up to a year is going to make a difference to somebody that doesn't care if they are in jail for a year or for six months.

The suggestion in A.B. 253 that the Department of Parole and Probation be involved in the process is not only probably unreasonable, but probably very costly, because we have a very, very low percentage of convictions right now because people don't want to prosecute and don't want to punish people to the extent that they can be punished under current laws. I think if we got it down to a misdemeanor, the incidence of conviction would increase. It's like a lot of other laws. If you get your law too severe, your convictions are going to go down. One thing that hasn't been discussed today, is what happens when you go with a lot of marijuana cases to a jury. Half of the jurors have experimented with marijuana, they aren't going to convict this guy for a marijuana cigarette if the possible punishment is six years in Nevada State Prison. But, if it's a misdemeanor they might just do it.

Bart Jacka, Assistant Sheriff, Las Vegas Metropolitan Police Department, stated: I'd like to comment that I haven't had the opportunity to hear many of the remarks this morning. I was present since 7:30 this morning in Assembly Government Affairs on something very vital to our department and just arrived.

First of all, in reference to A.B. 280, decriminalization. Our department is unalterably opposed to that particular statute. My remarks as far as A.B. 253 will be brief, and, I am sure that many of the points have been covered. As many of you know, last session of the Legislature I was here and I took direct opposition to the reduction of penalties for an ounce or less. I commented to you that, even though Oregon had had the statute in effect the history wasn't sufficient. In California, even though they passed it (after the 1975 session of the Legislature in Nevada) their history hasn't been that great. I've had personal conversations with the Sheriff in Sacramento County, in San Diego, in Los Angeles County and the Los Angeles Police Department. In essence, the same information was given to me as to Mr. Calhoun from the State Narcotic Unit. It's been said in the past, and perhaps today, that one of the reasons for reducing the penalties is that it will help the field policeman, (that's the person that I represent, having been a policeman for 20 years). It will not divert his attention so that he can go on to more important things. I think that my conversations with the agencies in California have shown that there has been a diversion of the police activity from the narcotic unit, per se, working the cases, to the field patrol officer.

I preface this by likening the field patrolman to the infantry soldier in the army. He's the first line of defense that you have.

In the instances in all of those cities in California that I've cited, their time has been considerably increased on activities involved with individuals under the influence of narcotics, primarily associated from the marijuana reduction legislation in that state. Their arrests have picked up, insofar as the handling is concerned, and their total time has been diverted. So, in essence, you don't have what you think you gain. You are simply diverting your problem to the guy that is supposed to be out there preventing crime in the form of the burglary, the rape, the robbery, etc. District Attorney Hicks from Washoe County mentioned that he has really no problem with the reduction of penalties along certain guidelines. One of the key things that's left to the law enforcement officer in this state is officer discretion. Even when the Legislature in 1973 passed the misdemeanor citation capability for larceny type offenses, it still left the police officer with a little bit of discretion. There was a cloud in 1973, and the cloud was cleared up in 1975. That's the man that you hire and that you train as a professional person, and you ought to take advantage of his discretion and value judgments. A.B. 253 doesn't give him any of that discretion, and he has to have some of those value judgments. Now I am sure that you realize by this point that I, as a representative, and I personally oppose any reduction in the penalties, but I'll talk about the things that might happen if you were so inclined to do that. Definitely, I don't think the citation should be the only alternative, as Larry mentioned. That discretion ought to be provided to the officer. I think you have another problem, and as a side thought, an officer who writes a traffic citation writes it on the basis of a speedometer calculation in his patrol car or his motorcycle. Now there are those agencies that do utilize vascar and radar so that they have a little bit more accuracy, but the speedometers in the vehicles that I cited are calibrated and/or certified. We have to go through periodic inspections for certification of those speedometers three or four times a year by the order of the courts, to see that they are properly calibrated and certified. Can you imagine the problem of the officer in the field who has to carry the scale and he has a minute of marijuana and it isn't sufficient for him to determine whether there is an ounce or less so he has to weigh it. And I can see the first problem that comes up in court is how were the scales accurately examined, and then you get the State Department of Weights and Measures involved and it's just another gobble-digook involved in government. I would propose that, if you are so inclined, you leave that officer the discretion so he could take that person to the jail or to the detention facility, whichever is appropriate according to age, and that the scales then be maintained at that location where they are in a better environment and properly checked and calibrated, etc., and that he weigh them and at that point then he be given the opportunity whether he is going to cite or to arrest. Bud mentioned that in his survey of the

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officers who work for him that they were generally in favor of the reduction and that he felt that, if I interpreted his remarks correctly, he got awfully tired of being the only bad guy. Well I guarantee you that I'm a bad guy, and that our people continue to enforce that law. We have no control over some parts of the criminal justice system as they exist and what they do, but we enforce the law. That was what I was hired to do, and that's what we hire people to do, enforce the law. I think that it's a cop-out on the part of some agencies who just look the other way and don't do what they're supposed to do. I'm sure you all recall that during the last presidential campaign both advisors for President Ford and now President Carter recommended decriminalization and/or a lessening of penalties on heroin and cocaine and that made headlines throughout the country, if you recall that. That's the thing that concerns me. If you decriminalize, if you lessen the penalty on these things, supposedly the problem goes away, then why don't we lessen the penalty, why don't we decriminalize homicide, rape, robbery. Thank you.

Assemblyman Coulter stated: If you decriminalize homicide, rape, robbery, the ill effects are obvious. I don't know that that's the situation with marijuana. We have not heard any substantial testimony in this hearing, in my opinion, to indicate there's any harm in smoking marijuana.

Mr. Jacka stated: Well, there are examples to the contrary, Mr. Coulter.

Mr. Coulter said: It was your testimony that extracts of marijuana were the problem, not marijuana.

Mr. Jacka said: When I mentioned why not decriminalize the rest, the basic concept, as originally conceived in lessening the penalties and decriminalization and so on, was to divert the attention of policemen elsewhere. In other words, put the problem in the hole in the corner and that's why I made the comment. I personally think that there are problems with marijuana and the diverse effects, you know, I'm not an expert in the field of what it does to one's physical being. All I know is what I've read and my personal feelings.

Dean Reese, attorney in Las Vegas, and a state coordinator for NORML, stated: As you've probably heard from Mr. Brownell, NORML is the National Organization for the Reform of Marijuana Laws. By now, I think you have just about heard it all. I would like to comment briefly on some of the things that came up since the last pro reform speakers were heard. First, there's a lot made of the lack of a chemical test for the degree of marijuana intoxication. For about 25 years after prohibition, people were regularly convicted of drunk driving without such tests. The observation of

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the police officer was sufficient. Somebody is staggering, his speech is slurred, you know, the lawyers here know the ritual testimony. "He's unsteady on his feet. He's acting funny. He smells of alcohol." So the policeman can reasonably conclude that he's drunk. I think, in fact this is still somewhat of a requisite in the notion of finding probable cause before the current implied consent of the current chemical test law comes into play. I think the same thing could be applied to marijuana. If somebody is unsteady on his feet, slow to react, he's acting funny, he smells of marijuana or he's got some on him, you can presume that he's under the influence of marijuana. If somebody has alcohol in his system and you can't tell it by his demeanor and behavior, it's generally conceded that it doesn't make any difference. I think it would be the same way. If you can't tell whether somebody is stoned, what difference does it make, even if he has a few molecules of THC in his system.

I'd like to comment on the police officer's proposal. Basically what the peace officer's association is asking, is to maintain marijuana offenses as a gross misdemeanor and a mandatory jail penalty. This would defeat a great deal of the purpose of marijuana law reform. A gross misdemeanor is entitled to all the legal formalities of prosecution that a felony has. The only difference is the maximum exposure, a year in the county jail instead of six years in the state penitentiary. A mandatory jail sentence of 30 days, as Mr. Gray of the Washoe County District Attorney's office suggested, is something that the jails probably couldn't handle. I would just ask anyone from either Clark or Washoe Counties to imagine what the situation would be, especially in Clark County, if as many as one-fifth of the marijuana using population were actually apprehended and jailed. You'd probably need Las Vegas Stadium or one of the larger resort hotels to contain them. Some of the other things that were brought up is that their laws are really not that severe and, if they are, they are not being very enthusiastically enforced and there are a lot of loopholes and ways around. I don't think this is any way to run a criminal justice system. It makes a mockery of the law. I deal with marijuana cases all the time, but I don't admire the way the system works. I think it ought to be one way or the other; reduce the penalty to something that can be realistically enforced or don't have a law at all. There is no rational justification, we've heard testimony by an eminent authority to this effect, for the criminalization of marijuana at all. It is not politically feasible to ask the Legislature to go so far as to enact A.B. 280. The law I would favor under these circumstances is A.B. 253, pretty much the way it's written except for removal of the involvement of the probation and parole department and any provisions that it be made a recidivous defense. It shouldn't cost any more to do it the second or third time than the first time. Just the annoyance of being arrested and having to come to court or pay a

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fine should be sufficient punishment for the gravity of the offense.

Several of the eight states that have passed partial decriminalization laws have specified correspondingly smaller amounts of hashish or hash oil, the chemical equivalents of an ounce or two ounces of marijuana. Also, I don't know whether you've received it, but the best reference I can give you to sum the whole thing up is a copy of the legislative study that was made for the New Mexico Legislature recently, which seems to me to be the most comprehensive document that has come to my attention of recent publication.

Also entered into the record is a drug chart, which is marked Exhibit K.

Mrs. Leslie Levy stated: I just want to say one thing additionally and that is that I have worked at the Health House here in Reno for over a year and I've taught classes at the Y and consider myself to be fairly in tune with my body. The effects of marijuana are that the THC stimulates the depletion of blood sugar level to the brain. Your brain is starved for blood sugar, so you experience a "stone". With alcohol, your stomach lining, your pancreas is forced to convert the alkaline content into blood sugar and the excess levels of glucose in your system tips your liver, tips your pancreas, your adrenal glands, you feel drunk. It's almost the opposite, that's why when the drugs are mixed, marijuana and alcohol are mixed, the effects are even more harmful. I don't think marijuana dulls the senses or the glands or the glandular systems nearly as intensely as alcohol does. So, a person driving under the influence of marijuana would not be potentially as dangerous as a person driving under the influence of alcohol, theoretically. Maybe a person on hashish and/or hash oil might be out of his consciousness. But to address the gentleman with the crutches who talked about THC, being a herbalist I would take marijuana but I would not take chemical extracts of THC. I would take ginseng that was grown on the mountain tops of Provo, Utah, in a powdered root form, but I would never take amphetamines. I would have a homeopathic doseage of lobelia tea at night before I slept, but I would never take a qualude or a valium or a darvon, and I just think there are intrinsic differences in what can be considered a qualitative naturalpathic (that could be considered a quality treatment or remedy for a disease) and what could not be considered that because the body cannot assimilate it. Because it is, indeed, a drug.

Chairman Barengo concluded the hearing and the meeting was adjourned at 11:51 a.m.

Respectfully submitted,

Linda Chandler
Linda Chandler, Secretary

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EXHIBIT A



COMMITTEES
VICE CHAIRMAN
LABOR AND MANAGEMENT
MEMBER
EDUCATION
ELECTIONS

Nevada Legislature

FIFTY-NINTH SESSION

TESTIMONY CONCERNING A.B. 280

Millions of dollars worth of government research has failed to uncover any verifiable, scientific evidence that marijuana use results in any measurable harm to the individual user or society.

"Then why," you might ask, "do some people still believe it is harmful?"

The answer is rooted in the fact that forty years ago lawmakers made an error; the answer is rooted in the fact that the general public originally had no reason to doubt the alarming claims against marijuana that appeared in the press; and the answer is rooted in the fact that many people have no reason to doubt the alarming claims against marijuana use which they were exposed to in schools.

The sincerity of those whose oppose marijuana need not be questioned; but sincerity alone can no longer justify subjecting marijuana consumers to police or judicial authority.

If testimony reveals that marijuana is in fact harmful, then I would suggest to this committee that the penalties for marijuana use and possession be kept at strict levels. However, if no verifiable evidence to the assumption that marijuana is harmful is presented to the committee, I would hope for sincere consideration of A.B. 280.

TESTIMONY CONCERNING A.B. 280
(continued)

Nevada would save vast amounts of money that is now spent in investigation, arrests, incarceration and court costs. Approximately \$600 million is spent annually nationwide to enforce marijuana laws. A legislative study in California showed that each marijuana arrest cost an average of \$1630.00 in 1968 (probably much more in 1976), and each prisoner costs the state approximately \$10,000.00 per year. In these times of economic crisis, these funds could be better used for other purposes.

Nevada has a tremendous drug traffic problem. Law enforcement effort and money are oriented toward combating this problem. If marijuana was placed on the same basis as tobacco, illegal shipments would cease because there would be no profit. Efforts of law enforcement personnel could be shifted to fighting hard drugs, where the real danger to society exists. Money generated from tax revenues could be used for drug enforcement and drug treatment. Nevada, with the funding this could provide, would change from being a drug traffic pushover, to one of the hardest states in the union in combating drug traffic.

If no verifiable, scientific evidence that marijuana use results in measurable harm to the user or society is presented to this committee, then I might also suggest that reducing the penalties is a copout. If marijuana use does not result in measurable harm, then the present marijuana policy should be repealed. I hope you give careful consideration to A.B. 280.

IN THE EIGHT YEARS that have passed since the first controlled experiments on marijuana, hundreds of human subjects and countless laboratory animals have been given enormous amounts of the drug, day in and day out. The results have been recorded in thousands of articles in scientific journals alone, and coverage by the mass media is impossible to measure. Not one of the findings that demonstrates marijuana's potential for harm has been consistently replicated by other research or could be regarded as proved. Few of the oldest, most publicized findings—those concerned with the areas of brain damage, lack of motivation, psychosis, and the steppingstone-to-heroin theory — are now supported by any member of the scientific community, regardless of where he stands on marijuana. The remarkable thing is that these studies got as much attention as they did, a fact that can only be ascribed to the fears rampant at the time. The articles continue, despite comments like this one by Michael Baden, made back in 1972: "We know more about marijuana than we do about penicillin."

In summarizing the major findings on marijuana, I will consider the above possible effects of use, as well as chromosome damage (birth defects), a reduction in immune response, an incitement to crime, a health hazard, and impairment of sexual activity.

If I have overlooked an article here or there, it is not because it represented a point of view contrary to my own. At the same time, I am aware that objectivity in marijuana research is difficult; a study of the literature indicates that scientists on both sides of the marijuana question have been influenced by their prejudices.

The accompanying chart character-

izes the views expressed in the writings on marijuana use and its effect in the seven most important areas of contention. The charges that marijuana leads to crime and is a general health hazard are not included on the chart because they lack continuity and support.

In addition to itemizing the results of actual research, the chart also lists key public reports, investigations, and important media responses. Key reports and investigations had to be included because they often generated data or summed up existing data. I included media responses because one of my basic conclusions—perhaps the most essential one—is that scientific data do not determine society's responses to the marijuana question. Instead, these responses reflect the complex of emotions expressed through the media. Hence, former President Nixon's rejection of the report of his own National Commission on Marijuana and Drug Abuse (Shafer Commission) belongs on the chart, as does Ann Landers' column containing her pronouncement on marijuana use. In one sense, the entire chart reflects media responses, for none of the articles from scientific journals would have excited interest unless they had received coverage.

Amotivational syndrome.

The term "amotivational syndrome" was used by Louis J. West, Chairman of the Department of Psychiatry at UCLA, in 1972 to describe the belief that marijuana use reduces the capacity to think straight, and produces a loss of will. In 1970 the National Clearing House for Drug Information had reported that marijuana users appeared to do about as well academically as nonusers. Within the month, the

Federal Bureau of Narcotics and Dangerous Drugs issued a report claiming the opposite. In 1971 two reports claimed that marijuana caused physical dependence (addiction). In 1972 the second annual HEW report on Marijuana and Health summed up a number of studies in colleges and high schools that showed no difference between users and nonusers. About the same time an interview with West appeared in the Los Angeles Times, and within a month an article was published that showed that countries (usually described as "primitive") where marijuana use was not generally punished had always accomplished less than other countries.

Throughout 1972, the notion that marijuana sapped the will received enormous media coverage and almost certainly became the conventional wisdom. Yet that year also witnessed the appearance of several reports favorable to marijuana use. First, there was the release of the Shafer Commission's first report, which denied the existence of an amotivational syndrome, followed by the initial release of data from the Jamaica study authorized by the Commission. The Jamaica report compared chronic users physiologically and psychologically with a control group of nonusers. The users had smoked seven to 25 cigarettes of strong Jamaican marijuana a day, averaging about three percent THC, the active ingredient in marijuana, for between 10 and 25 years. This report of long-term use revealed no differences in motivation between users and nonusers, although it did hint that the users were better motivated.

In 1973, the American Journal of Psychiatry published a study by Joel Hochman and Norman Brill. They had studied a random sample of 140 UCLA students and found no motivational dif-

The volley of charges against pot and the claims for it have made it our most researched drug. Here, a respected psychiatrist details what we know—and what we don't—about a drug millions use daily. by Norman E. Zinberg

The War Over
MARIJUANA

ference between users and nonusers, even with heavy use. The Hochman and Brill study was rebutted by a Department of the Army claim that, among soldiers, users were more poorly motivated than nonusers, but this report did not describe how the subjects had been selected.

In 1974 the Canadian Le Dain Commission report echoed the findings of the Shafer Commission, and for a time nothing more was heard of the amotivational syndrome. Then Senator James O. Eastland of Mississippi launched a series of hearings, which he introduced by stating that the proponents of marijuana had been commandeering the headlines and he now wished to give the opponents their day in the sun. He was successful, for the hearings revived much of the belief about the harmfulness of marijuana, including the amotivational syndrome.

In 1975, however, the tide broke in the other direction. The Drug Abuse Council reported that one year after the State of Oregon had decriminalized marijuana, there had been no appreciable increase in use or problems from use.

When Consumer Reports issued one of its summaries of the evidence on marijuana and health, it backed the Jamaica study as the most definitive research to date. Nevertheless, in July 1975, Reese T. Jones, of Langley Porter Neuropsychiatric Institute, gave the final word for the year when he reported that 42 volunteers showed tolerance and dependence after using marijuana for a month in a clinic ward. Since a study contradicting Jones has not had time to emerge, I should point out that each of his subjects received at least 210 milligrams of THC per day; that approximates 50 to 100 cigarettes a day. If that much grass cannot produce some change in one's way of life, a lot of people in this country are wasting their time.

Chromosome damage (birth defects)

The first important article in the 1970-1975 period to discuss the effect of marijuana on chromosomes or birth defects was one by David Dorrance and his associates in 1970, who included marijuana in their study of hallucinogens, along with LSD

and mescaline. Considering marijuana a hallucinogen was a misconception that had just about stopped by 1968, but Dorrance's definitive work, which refuted previous charges that LSD caused chromosome damage, was written before the marijuana chromosome scare arose.

In 1970, the Federal Bureau of Narcotics and Dangerous Drugs report already referred to appeared. It damned marijuana in every way. It was countered in the following year by the HEW report, and in 1972 by the Shafer Commission's first report, which found no birth defects associated with marijuana use.

The seesaw between opposing views of marijuana use also symbolizes the path of a media adventure involving Wesley Hall, then President-elect of the American Medical Association. On March 6, 1971, he said at a Las Vegas news conference that a continuing American Medical Association study on marijuana showed that it caused sterility and birth defects. On March 25, 1971, after being taken roundly to task by the National Institute of Mental Health and the chairman of his own

AMMUNITION IN THE GRASS WAR

	WARNING REPORTS	CALMING REPORTS
Amotivational Syndrome	1970: Bureau of Narcotics & Dangerous Drugs 1972: L. J. West 1973: U.S. Army; Nixon 1974: Eastland Committee hearings 1975: Reese T. Jones	1970: National Clearing House 1972: 2nd Annual HEW report on Marijuana & Health; Shafer Commission report 1973: Hochman & Brill in American Journal of Psychiatry 1974: Le Dain Commission 1975: Drug Abuse Council; Consumer Reports; Jamaica Study
Chromosome Damage and Birth Defects	1970: Bureau of Narcotics and Dangerous Drugs 1971: Hall, AMA Pres. 1973: Stenchever; Curtis; Landers; Nixon 1974: Eastland hearings; Morishima	1970: David Dorrance 1971: HEW; Hall, AMA Pres. 1972: Shafer Commission 1973: NORML 1974: Le Dain; Nichols; Thorburn; Pace; Neu 1975: Consumer Reports; Jamaica Study
Brain Damage	1970: BNDD Report 1971: A.M.G. Campbell; Rat experiments 1973: Prevention article; Nixon 1974: Eastland hearings; Heath	1971: HEW 1972: Shafer Commission; Grinspoon 1973: Stunkard 1974: Le Dain Commission; Axelrod 1975: Jamaica Study
Psychosis	1971: Kolansky & Moore 1973: Nixon 1974: Eastland hearings 1975: Reese Jones	1972: Shafer Commission 1974: Le Dain 1975: Jamaica Study
Stepping-Stone to Heroin	1971: Coleman 1973: Landers; Nixon 1974: Eastland hearings; Paton	1971: Carlin & Post; Cameron 1972: Shafer Commission 1974: Le Dain; David Duncan 1975: Jamaica Study
Immune Response	1973: Study by Nahas 1974: Nahas; Gupta; Eastland hearings	1975: White; Silverstein & Lessin; Jamaica Study
Sex Impairment	1972: New England Journal of Medicine 1974: Kolodny (NEJM)	1974: Mendelson 1975: Brecher

AMA Committee on Drug Dependence, he said that there was no evidence linking marijuana with loss of sex drive or birth defects, but he added gratuitously, "I still care about morality and decency and I'm tired of phrases like 'credibility gap.'"

The big blast on chromosome breaks came with the publication of an article by Morton A. Stenchever in the *American Journal of Obstetrics and Gynecology*. He found that 20 women and 29 men who had used marijuana showed almost three times more breakage in chromosomes than a control group of 20 nonusers. One of the most damning findings, quoted and requoted since, was that of the users, 22 used marijuana only once a week or less. It seemed to make no difference whether use was light or heavy. At a lecture in Cleveland in April 1973, Stenchever began by saying, "We're concerned that marijuana may be legalized and that it may be a much more dangerous drug than we realized." That phrase and his findings received enormous press coverage, which publicized the idea that chromosome breaks resulting from marijuana use might result in birth defects.

In a country already terrorized by the thalidomide scandal, this threat packed a real punch. There were a few attempts, notably one by R. Keith Stroup, head of the National Organization for the Reform of Marijuana Laws, to explain that even if marijuana did cause chromosome breaks, we don't really know what the breaks mean and have no evidence that they result in birth defects. Many common substances, such as aspirin or caffeine, cause chromosome breaks. Most important of all, as Stroup pointed out, the Stenchever study had obtained no information about the condition of the subjects before they used marijuana. Thus, the possibility that they had previously used other substances was not ruled out.

Despite the attempts to minimize the effect of Stenchever's findings, the media responses continued for months. Two are included on the chart: one by the medical columnist Lindsay B. Curtis and the other by Ann Landers. These columnists stated the case as if proved—Ann Landers' headline read, "It's Medically Proven: Grass Can Harm Babies"—and their columns were picked up and reported on by wire services in the news sections of the daily papers.

The Canadian Le Dain Commission report of 1974 minimized Sten-

Each of his subjects received at least 210 milligrams of THC per day. That would produce 50 to 100 cigarettes a day. If that much grass can't produce change, a lot of people are wasting their time.

chever's findings, but it received little publicity in the United States. In July 1974 W.W. Nichols and his co-workers published in *Mutation Research* a report showing that the 24 people they studied experienced no chromosome breaks. Nichols had checked the condition of his subjects' chromosomes before giving them marijuana and rigidly excluded, for the study period, the use of any substance that might cause chromosome damage. Scientifically, Nichols' work is definitive. It has not been seriously challenged, and in fact has been supported by the Jamaica study and by studies at the University of Mississippi and the Upstate Medical Center of SUNY. Yet there were no Landers columns about W.W. Nichols, and while the name Stenchever is well known in circles interested in drug use and abuse, I venture to say that Nichols is virtually unknown.

W.W. Nichols, M.J. Thorburn of the University of West Indies (a director of the Jamaica study), H.B. Pace of the University of Mississippi, and Richard L. Neu of the State University of New York were not mentioned at the Eastland Commission hearings. An Akira Morishima came to prominence, however. Morishima testified that his research on lymphocytes showed that the lymphocytes of marijuana smokers contained one third fewer chromosomes than did a control group of nonsmokers and that his work supported Stenchever. It took the ever-vigilant *Consumer Reports* to inform even careful readers that Morishima had studied only three people. To my knowledge, this fact was not mentioned during the extremely well-publicized hearings.

Brain damage. The belief that marijuana causes irreversible brain damage goes back to the 1930s and the

original scare stories about marijuana. This view came up in the 1970 report of the Federal Bureau of Narcotics and Dangerous Drugs, the next year it was countered by the HEW report. In early 1971, an experiment on rats claimed that marijuana damaged the brain. The report got a flurry of attention, but the real bomb was dropped later, in December 1971. A.M.G. Campbell and his associates reported in *The Lancet*, a highly respected British medical journal, that X-ray studies of the brains of 10 heavy marijuana smokers showed "evidence of cerebral atrophy." That is, these smokers showed an actual diminution of brain tissue when they were subjected to a rather hazardous procedure called an air encephalogram. Due to the nature of this procedure, no one has repeated the enormously publicized Campbell project. But it has been challenged, first, by the Shafer Commission report that President Nixon rejected, and again in 1972 in a critique by Lester Grinspoon published in *Contemporary Drug Problems*. Grinspoon pointed out that Campbell referred to his 10 subjects as addicts, a term not usually applied to marijuana users. Not only had all 10 already used LSD, but eight had used amphetamines, four had suffered significant head injuries, and a number had used sedatives, barbiturates, heroin, or morphine. All had used alcohol, a drug for which there is proof of eventual brain damage. Therefore, Campbell's association of marijuana use with cerebral atrophy followed no principle of science or logic.

In the spring of 1973, a flurry of marijuana brain-damage articles appeared. One long piece in *Prevention* stated that Campbell had found "marijuana smokers' brains to have actually shriveled." In April 1973 the *Journal of Nervous and Mental Disease* published a study by A. J. Stunkard and his associates, which compared a group of 29 students using marijuana regularly over a period of at least three years with a non-using control group. On the basis of a wide range of neurological and neuropsychological tests, Stunkard found no differences between the two groups.

In the light of Stunkard's study, as well as the Le Dain Commission report, the belief that marijuana caused brain damage should have been set to rest. But no. Robert G. Heath emerged from the Eastland Commission hearings to report that six rhesus monkeys with electrodes planted in their brains showed persistent changes in brain-wave patterns after re-

ceiving heavy doses of marijuana over a period of several months. At this point, no less an authority than Julius Axelrod, 1970 Nobel Prize winner for his studies of the effects of drugs on the brain, and himself an Eastland Committee witness on the dangers of marijuana, took up the cudgels. He noted that Heath had violated the cardinal principles of pharmacological research. By forcing the monkeys to take doses equivalent to over 100 marijuana cigarettes a day, he had paid no attention to dose-response curves. All he might have done, said Axelrod, was discover a toxic dose.

Psychosis. Except for a few reports in the late 1920s, little attention was paid to the question of whether marijuana causes psychosis until April 1971. The explanation by Howard Becker, a professor at the Department of Sociology at Northwestern, that the early cases were probably the result of the smokers' secondary anxiety at their inability to accept the strange drug effects, rather than direct drug response, was generally accepted. In April 1971, however, the *Journal of the American Medical Association* published a report by Harold Kolansky and William Moore concerning 38 patients whom they had seen in their psychiatric practice. Eight had become psychotic, four had attempted suicide, and the others had shown varying degrees of promiscuity and breakdown in their lives after smoking marijuana. The publicity was enormous. Kolansky and Moore testified before the Shafer Commission that marijuana, and marijuana alone, was the villain in these bizarre cases. Many eminent authorities questioned this insistence by Kolansky and Moore on a direct association between marijuana use and the problems described in their report. For example, they cited the case of a 17-year-old boy seduced by a homosexual who also gave him marijuana; the youth became psychotic. But the insistence of these researchers that it was clearly the marijuana that was responsible for the psychosis hardly convinced other psychiatrists.

The reports of the Shafer Commission and the Le Dain Commission, the Jamaica study, and a variety of other medium- and long-term studies have in no way substantiated Kolansky and Moore's findings. Further, the lack of any confirmed clinical accounts of a psychotic response following acute or chronic marijuana use is convincing, particularly

Nevertheless, the rat-tat-tat of the claims that marijuana causes brain damage and lack of will, no matter how little substantiated, has contributed to the public's general uneasiness about the use of the drug.

since about 20 million people now use the drug with some regularity. Nevertheless, the rat-tat-tat of the claims that marijuana causes brain damage and lack of will, no matter how little substantiated, has contributed to the public's general uneasiness about the use of the drug.

Steppingstone to heroin.

The belief that young people begin on marijuana and proceed step by step through harder drugs to heroin addiction is hoary with age. The 1963 Kennedy Commission on Drug Abuse in the United States definitively dismissed that notion, and a score of later reports, including those of the Shafer and Le Dain Commissions, have called it nonsense. Nevertheless, the suggestion reappears with regularity and continues to receive considerable media attention. In May 1971, Lester Coleman, a syndicated medical-advice columnist, wrote a strong column supporting the marijuana-to-heroin theory, which frightened many readers. In November, the *Journal of the American Medical Association* published the research of Albert Carlin and Robert Post. Their study of more than 100 marijuana users specifically discounted the notion that such users develop an interest in other drugs, particularly opiates. And a few days later, Dale Cameron, head of the World Health Organization's Drug Dependence Unit, reported the same findings on the international front.

Neither the reports of the three commissions nor the private research studies deterred Ann Landers from publishing a passionate column in early 1973. It restated the steppingstone warning. And in 1974 the Eastland Committee pushed the same notion hard, going so far as to import W.D.M. Paton, Professor of Pharmacology at Oxford and probably the leading exponent of the theory that mari-

juana leads to heroin, to give testimony. He said his piece and was duly reported.

Since that time, one definitive study on the question has appeared. Written by David F. Duncan of the University of Texas Health Sciences Center at Houston, it explores the initiation of drug use by heroin addicts and correctly criticizes all other studies for not noting in sequence the different drugs used for intoxication. Experimenting with two groups of heroin addicts, one drawn from a prison and the other from a methadone clinic, Duncan analyzed the subjects' drug use step by step. He found that alcohol was the first intoxicant regularly used by 73 percent of these addicts, whereas marijuana was used as the first intoxicant by only a small percentage of both groups. Marijuana rarely figured prominently as the preferred drug.

"Speed"—that is, some form of stimulant amphetamine—came second (61 percent) to alcohol as the first intoxicant of the heroin addicts in prison. Since heroin is a depressant, the role of a stimulant as a drug of choice for the same group of users is hard to explain.

Duncan's study shows—it does not simply indicate—that marijuana use does not lead to heroin use. He believes that there are no distinct steppingstones from one drug to another. The initial use of alcohol by a large percentage of his sample only follows the cultural norm and does not mean that alcohol or amphetamines or any other drug leads to heroin addiction.

Immune response. The next big marijuana scare broke in May 1973 when *The New York Times* published a long letter to the editor from Gabriel G. Nahas and his associates. They declared that marijuana was generally dangerous and that the drug interferes with the capacity of the body's white blood cells to fight disease. Such a claim was serious indeed because the immunological defense provided by T-lymphocytes operates against infectious diseases, foreign protein substances, and possibly even against some types of cancer. Nahas reported that the T-lymphocytes of marijuana smokers resembled those of patients with cancer and kidney disease, producing 40 percent less potential immune response.

Nahas' work was quickly discounted in some circles because he was known to be strongly opposed to marijuana use. But in October of the following year Sudhir Gupta and his associates sup-

ported the Nahas position by stating in the *New England Journal of Medicine* that the reaction of marijuana smokers' T-lymphocytes to sheep red blood cells in laboratory cultures was weaker than that of nonsmokers. Further, a bewildering variety of reports from laboratory investigators in places as various as East Tennessee State University, the University of Laval in Quebec, the Medical College of Virginia, the University of Toronto, the Mason Research Institute, and the Pasteur Institute stated a weakened immune response in cultured cells after exposure to very potent solutions of marijuana. All of these findings got a thorough review at the Eastland Committee hearings.

As usual, there are contradictory findings. Unfortunately, these more favorable findings cannot be exactly matched to the unfavorable findings and therefore cannot be taken as discounting them absolutely. For example, the study of S. C. White and his associates, reported in *Science* in April 1975, found no significant differences in microcultures of blood lymphocytes between 12 long-term marijuana smokers and a control group. But this group of smokers, like the group reported on by Melvin J. Silverstein and Phyllis J. Lessin of UCLA, smoked an average of three or four times a week, which may not constitute sufficiently heavy use. The UCLA study is of particular interest, however, because it investigated the immune response in individuals and not in tissue culture. Silverstein and Lessin's 22 marijuana smokers showed intact skin immune responses when compared to a control group with impaired responses. These unimpaired responses were confirmed by trying other foreign substances on the subjects that led to identical results with users and nonusers.

Even more effective in contradicting the impaired-immune-reaction theory is the Jamaica study. The 30 long-term users had no greater history of infection than the control group, and an extremely thorough physical examination failed to reveal any evidence of physiological impairment. It could be argued, however, that other heavy users whose immune reactions had been affected had dropped by the wayside.

In the long run, epidemiological studies will settle the issue. So far the reports emerging from college health services, free clinics, or other health facilities frequented by marijuana users have not indicated the higher incidence

The claim that marijuana causes sexual impairment is all the more frightening because it is unexpected. The word from users has been that sex and marijuana go together like bacon and eggs.

of infection that would be expected if the immune reaction had been damaged. This fact demonstrates that moderate marijuana use, as shown by the White and Silverstein studies, simply leaves the immune reaction untouched. Certainly, the number of extremely heavy users in this country is too small to affect the national disease rates appreciably.

Incitement to crime. The claim that marijuana use is associated with crime and violence dates back to the 1930s. Only politicians have leveled such charges during the period covered by this summary. In May 1971, for example, Representative John Murphy (Democrat-N.Y.) made the headlines by asserting the U.S. soldiers in Vietnam committed "bizarre acts of murder, rape, and aggravated assault" as a result of marijuana use. Similar but more sedately worded comments emerged during the Eastland Committee hearings. Today this marijuana myth has been dropped, perhaps because of the painstaking 1930s study of 17,000 offenders by Walter Bromberg and, more recently, a study by Jared Tinklenberg of Stanford, which show no relationship between marijuana use and crime.

General health hazard.

The claim that marijuana is a health hazard has appeared, vanished, and reappeared over the last six years. It has been asserted, for example, that marijuana causes skin cancer or a profound metabolic change in various kinds of animals, usually mice or rats. So far none of these reports has been substantiated. Interestingly, not all of the unsustained, extravagant research studies have found marijuana harmful. One researcher reported that marijuana stopped three kinds of cancer in mice; another noted that mice gained in

creativity but scored lower in authoritarianism. The claim that marijuana adversely affects electrocardiograms, which appeared in the July 1973 issue of the *Journal of the American Medical Association*, acquired weight through the publication of an editorial in the same issue supporting those findings. In November 1973 the *Journal* printed a short letter that persuasively discredited the original study, but this was done without editorial fanfare. Lung damage due to marijuana smoking is mentioned now and again, but this particular fear, which is probably realistic, has been partially negated by the fact that marijuana, unlike nicotine, causes vasodilatation and expansion of lung bronchioles.

Sex impairment. In recent years, the biggest fear has resulted from the claim that marijuana causes sexual impairment, at least in men. The claim is all the more frightening because of its unexpectedness. The word from users has been that sex and marijuana went together like bacon and eggs.

Consequently, when a letter in the November 1972 issue of the *New England Journal of Medicine* said explicitly that marijuana contains a feminizing ingredient and claimed that it causes gynecomastia (breast enlargement and a milky discharge from the nipples) in men, there was general disbelief. Gynecomastia in adolescence is not unknown, and the author of that letter apparently made no effort to find a comparable control group. Sophisticated users argued among themselves. Perhaps, they said, the increased empathy toward one's partner during sexual experience could represent a feminization of the man; on the other hand, since a similar thing happened to women, that would speak against a general increase in the feminine hormone. Thus this finding was generally discounted.

In April 1974, however, the *New England Journal of Medicine* raised a storm by publishing the findings of Robert Kolodny and his associates at the Reproductive Biology Research Foundation in St. Louis. This study compared the testosterone (male sex hormone) blood levels of 20 marijuana smokers with those of 20 nonsmokers and showed the smokers' levels to be lower. Although testosterone levels for all the subjects were within normal limits, smokers who smoked 10 or more joints

Marijuana (Continued from page 52.)

a week had lower levels than those who smoked less or not at all. In addition, six smokers had low sperm counts, and two complained of impotence. One of these was cured when he stopped smoking marijuana. There were the usual complaints about this study. First, there had been no determination of the men's testosterone levels before they used marijuana. The marijuana was also of unknown potency.

What did not appear in the exchange of letters in the *New England Journal*, or anywhere else, was a clear statement explaining testosterone-level variations. For this we are indebted to Edward M. Brecher, the principal author of *Licit and Illicit Drugs*. Brecher describes the enormous variations in testosterone level from month to month, from day to day, and even from hour to hour, with no known cause and no visible effect. From his report, we can conclude that few human parameters show as much inherent variability as testosterone levels. Thus it is highly questionable if any testosterone research could pass the "so what?" test. Nevertheless, this area touched off another seesaw saga. In November 1974, the *New England Journal of Medicine*, in whose pages the marijuana sex-impairment battle is apparently being fought, published a study by Jack H. Mendelson of Harvard. Twenty-seven volunteers were locked up in a hospital ward and tested thoroughly for five days; then for 21 days, they were given all the marijuana they wanted and were tested for another five days. The 12 subjects who were occasional users before the study began averaged from one to five joints daily; the 15 heavy users averaged from one to eight joints per day. Mendelson established the men's serum-testosterone levels before administering marijuana, and he knew exactly how much of what type of marijuana was used. He found that the "values are in the upper range of normal adult levels and are not significantly different from each other. High dosage marijuana intake was not associated with suppression of testosterone levels."

The Mendelson study sent Kolodny back to the locked hospital ward. He recruited 13 more marijuana smokers. They first refrained from smoking for two weeks, then were locked in for three months. For 11 days they received no marijuana and then were given several joints of known potency daily. Serum-testosterone levels held up until

"No intoxicant or, for that matter, no drug is totally safe. In a sense, no human activity is totally harmless. However, it is my opinion that marijuana involves only a minimal risk of harm to the user."

the fourth week, when they began to fall and continued to do so. Kolodny concluded that he not only had been right about marijuana and serum testosterone in the first place but that Mendelson had simply stopped too soon.

One of the things we know about serum testosterone is that in humans, sexual excitement raises the levels. Locking up male animals together in close confinement lowers the level. (Nobody has studied the effect of locking up heterosexual males together in a hospital ward for three months.) If Kolodny had included controls in his experiment—if, for example, he had given only half of the group marijuana—he could have determined the effects of marijuana as well as the effects of incarceration. As of now, there is no way of knowing the effects of incarceration on this study or, for that matter, on Mendelson's. If there had been two groups and if the levels had dropped in both, we would at least have learned something about the effects of incarceration. In my opinion, all this puffing has left us without much knowledge about the effect of marijuana on testosterone levels.

Where we stand. This review of the research, with all the disagreements involved, does not mean that we know little about marijuana. I am not enough of a pharmacologist to be able to specify the extent of research done on other much-used drugs, such as digitalis or cortisone, but I believe that we know as much about marijuana as about any drug. We know, for example, that it is an active intoxicant. And, to quote J. Thomas Ungerleider, presidential appointee to the Shafer Commission, "No intoxicant or, for that matter, no drug is totally safe or harmless. In a sense there is no human activity which is totally harmless. However, it is my opinion

that marijuana involves only a minimal risk of harm to the user." Thus, despite marijuana's clearly demonstrated intoxicating properties, little clear evidence exists that it is harmful. In fact, the members of the Shafer Commission, whom I criticized initially as having been selected for their antimarijuana bias, have stated: "A careful search of literature and testimony by health officials has not revealed a single human fatality in the U.S. proven to have resulted solely from use of marijuana."

The research, both pro and con, in the three areas of chromosomes, immune reactions, and testosterone levels suffers from our lack of knowledge of what the changes in these factors mean, particularly when they have been tested only in the laboratory. Because we know so little about these areas and because the findings are so vague, I suspect that the claims and counterclaims about the effect of marijuana use will continue to reverberate through the news conferences and journals.

Marijuana epitomizes the new direction of social change. It came to popularity as part of a wave of assault on established social institutions in the late 1960s. Besides being linked with the actually destructive aspects of this assault, marijuana was associated with radicalism, permissiveness, lack of respect for authority, unconventional lifestyle, and interests, ranging from Zen and hard rock to astrology, that were considered kooky if not irrational. The inference was drawn that odd and possibly destructive forces were at work among the young, and people set about trying to pin the blame on marijuana.

Only in such an atmosphere of anxiety and social concern could a respectable journal such as *The Lancet* have published the report of Campbell's uncontrolled research on brain damage. In the U.S., too, the recent discoveries that show "marijuana not to be as harmless as previously supposed" lack good scientific grounding.

My conclusion, therefore, can only be that marijuana is a remarkably innocuous substance. There is no reason not to agree with Dana Farnsworth, Vice Chairman of the Shafer Commission, who has said: "Since publication of the Commission's report in 1972 numerous new studies have been reported. This work of the last three years has not fundamentally changed the data base on which recommendations were made."

Only long-term epidemiological surveys can show definitively whether

there is truth to the claims of impairment in sexual drive, lack of resistance to disease, and birth defects. In the meantime, the counterclaims, the arguments against the harmfulness of marijuana use, appear to be stronger. And we cannot proceed as if long-term data did not exist.

As a matter of fact, this country has already begun to generate its own long-term epidemiological data. When we examine marijuana smoking in the United States, we are no longer looking at a few youngsters with a new fad. A 1972 forecast made by the Federal Bureau of Narcotics and Dangerous Drugs predicted that by 1976, 50 million Americans would have tried marijuana. That figure may be low, and we are not talking about using the drug only once or twice. In 1972 the Shafer Commission surveys found that over 13 million people regarded themselves as regular users of marijuana, a finding that prompted the Commission to declare: "What this shows is that there are three recreational drugs in this country: alcohol, tobacco, and marijuana."

The data show further that it is no longer simply the young who use marijuana. Previously, some authorities believed that high-school and college use was a passing fancy that was abandoned in serious adult life. The arrest rates now indicate that marijuana use continues into the late 20s and 30s. One recent survey revealed that 14 percent of users were in professional occupations, and another 11 percent in trades that netted incomes of over \$15,000. The evidence accumulates that we have a sizable body of citizenry who are long-term, regular users.

I have mentioned the Jamaica study again and again, and it may seem that, like those I have criticized, I am building a large edifice of my preferences on a tiny base of actual data. But the Jamaica study was not just a carefully controlled examination of 60 subjects, 30 chronic users and 30 nonusers. It was also a splendid piece of anthropological research. The team spent 18 months in carefully selected rural and urban areas gathering convincing natural data about marijuana use and its effects. Not only did they find its use extremely widespread—in some areas involving over 60 percent of the population—and heavy but they found that it was being used in various ways: smoked, brewed, rubbed on, and mixed with other things. They discovered many legends about the medicinal, herbal, and enhancing

effects of the drug, but no legends indicating that users were more prone to illness, sexual difficulties, sterility, or that it caused birth defects. That sort of natural data, also found in Greece, is accumulating in this country. It makes the argument that we must wait and wait for long-term epidemiological data seem more of a cover-up for an ideological or political position than a firm stance on the evaluation of evidence.

Obviously there are areas of concern. Drawing any hot substance into the lungs cannot be good for anyone, but we should remember that no marijuana smoker in this country uses as many cigarettes a day as tobacco smokers do. Also, marijuana is an intoxicant, and despite the research showing that someone high on marijuana does better on a driving simulator than someone high on alcohol, driving under the influence of any intoxicant must be considered a real danger. Finally, it is my absolute conviction that adolescents below the age of 18 should not use intoxicants of any kind, whether nicotine, alcohol, or marijuana. The 14-, 15-, or 16-year-old struggling to develop in this complex society needs as clear a head as possible. One argument made some years ago for the legalization of illicit substances was based on the possibility that parents and other authorities could more readily control above-ground use of licit substances than they could control the underground use of illicit substances.

While searching through the thousands of pages I read for this report, I reached one other conclusion that again places me in opposition to Senator Eastland. Eastland stated that the reason he needed to give the opponents of marijuana a chance to be heard was that the mass media overwhelmingly favored marijuana proponents. I planned to quantify the number of words in selected periodicals on both sides of the question, but I lost patience and have had to leave that research to others. It is my guess, however, that space has been given to opponents as against proponents at a ratio of five or six to one.

In my review of the writings on marijuana use, I found that certain "straight" world periodicals tilted as consistently away from marijuana as counterculture publications tilted toward it. The difference was that the straight magazines and papers always presented themselves as reporters, while the counterculture publications had the grace to admit they were giving opinions. Those reading only Good

Housekeeping would have to believe that marijuana is considerably more dangerous than the black plague. Until very recently The New York Times also showed a distinct bias, as evidenced by the space devoted to scare stories and the general antimarijuana tone of other stories. Worst of all, Science, the official organ of the American Association for the Advancement of Science, has not fulfilled its position as the representative of objective science. This has been evident in its editorial reports on marijuana. How else could one account for the fact that in one article of a series on marijuana, published on August 23, 1974, the retrospective Stenchever experiment rated a careful discussion while the prospective Nichols report was casually lumped in with other research? One important record must be righted. Ann Landers relented. She signed a National Organization for the Reform of Marijuana Laws petition calling for decriminalization of marijuana, defending her change of heart in her column of November 14, 1974.

In the end, after all this work and all these words, I still find myself echoing the remark made by Daniel X. Freedman of the University of Chicago, after a Drug Abuse Council conference on marijuana. "Nobody can tell you it's harmless. Each person must decide for himself what he wants to do." With each passing day, however, more people agree with Andrew T. Weil's remark that marijuana is "among the least toxic drugs known to modern medicine." □

Norman E. Zinberg is one of the country's foremost authorities on the use and effects of marijuana and other consciousness-altering drugs. He has written dozens of articles and books on the subject, and serves as consultant to numerous drug programs and research projects, including the Drug Abuse Council. Since receiving his B.A. and M.D. degrees from the University of Maryland, Zinberg has taught psychiatry at Tufts, Clark, and Boston universities, and is now professor of psychiatry at Harvard Medical School. He also serves as staff psychiatrist at several teaching hospitals in the Boston area.

For more information, read:

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Miller, Loren L., ed. *Marijuana: Effects on Human Behavior*. Academic, 1974. \$29.00.

Tinklenberg, Jared R. *Marijuana and Health Hazards*. Academic, 1975. \$8.50.

Zinberg, Norman E. and John A. Robertson. *Drugs and the Public*. Simon and Schuster, 1972. \$8.95.

For reprints of this article, see Classified Advertising.

EXHIBIT C

TESTIMONY OF GORDON S. BROWNELL, WEST COAST COORDINATOR FOR THE NATIONAL ORGANIZATION FOR THE REFORM OF MARIJUANA LAWS (NORML), BEFORE THE SENATE AND ASSEMBLY JUDICIARY COMMITTEES OF THE NEVADA LEGISLATURE, MONDAY, MARCH 7, 1977 (8:30 a.m.)

It is both a pleasure and a privilege to appear before you today on behalf of the National Organization for the Reform of Marijuana Laws (NORML), a non-profit, citizens lobby working for the removal of criminal penalties for the private adult use of marijuana. NORML does not advocate or encourage the use of marijuana, and in fact supports a public policy of discouragement of all recreational drug use, including alcohol, tobacco and marijuana. We contend, however, that the application of the criminal law to prohibit marijuana use has not only failed miserably in its purpose, but has been counter-productive and excessively costly to both the individual and society.

As you are aware, eight states have now decriminalized the use and possession of small amounts of marijuana. Beginning with Oregon four years ago, and followed by Alaska, Maine, Colorado, California, Ohio, Minnesota and South Dakota, these new laws have been overwhelmingly successful.

In Alaska, the legislatively enacted decriminalization law has been supplemented by a 1975 Alaska Supreme Court decision which held that adults had a constitutional Right to Privacy which protects their possession and use of marijuana in the home, making Alaska the first state in the nation to permit the legal possession and cultivation of marijuana in private for personal use.

Because of the success of the Oregon approach, similar bills are now pending in more than thirty-five state legislatures across the country and in the United States Congress. On the federal level, the prospects for favorable action have improved considerably with the election of President Carter, who supports decriminalization and is on record as urging other states to enact laws similar to Oregon's.

I would like to briefly review the record of decriminalization laws which have been enacted elsewhere, as the experience in these eight states is such as to warrant both serious consideration and enactment of similar legislation in Nevada.

The bill introduced this session by Assemblyman Kosinski, AB 253, compares favorably to decriminalization laws elsewhere and would be a major step towards a more effective public policy approach to marijuana use in ~~Hawaii~~ ^{Nevada}.

While the provisions of the laws in the eight states which have decriminalized marijuana differ in some respects, the laws contain three common elements: 1) minor marijuana violations are punished by a fine only, without imposition of a jail sentence; 2) a traffic-like citation is issued the alleged offender in lieu of a custodial arrest; and 3) there is no permanent criminal record of the offense. In essence, these laws seek to alleviate the harm which is caused by treating marijuana users as criminals.

This approach has been strongly endorsed by Dr. Robert DuPont, director of the National Institute on Drug Abuse (NIDA) who has stated on numerous occasions his support for "the concept of the use of a civil fine, a noncriminal fine of a modest kind, something in the range of \$25.00, to convey the message that marijuana use is prohibited behavior, but also not to threaten the young people with a criminal record or incarceration." Dr. DuPont supports decriminalizing not only possession of small amounts, but also cultivation of small amounts for personal use, to provide a noncommercial alternative to the current illicit market as a source of supply.

Today, marijuana possession is a misdemeanor or civil offense in all states but two. In Arizona, possession of any amount of marijuana can still be prosecuted as either a felony or a misdemeanor. Nevada is the last remaining state where possession of any amount of marijuana by an adult is a felony. Clearly, such a punitive approach is ⁱⁿ need of revision in light of what is currently known about marijuana and the progress other states have made on the issue.

In October, 1973, Oregon became the first state to make possession of up to one ounce of marijuana a civil violation, with enforcement limited to citations and fines. In surveys taken the last three years by the independent Drug Abuse Council in Washington, D.C., there has been no significant increase noted in

marijuana use since the adoption of the new law. The elimination of the threat of arrest and jail has not led to the great increase in users and offenses which some had feared.

Likewise, the experience in California has been most favorable. In 1974, the California Legislature established a Senate Select Committee on the Control of Marijuana to study and review the status and effectiveness of the state's marijuana laws and recommend proposed revisions, if necessary. Particular emphasis was given to the fiscal costs of enforcing California's marijuana laws, which were immense, due to the annual increase of between 80,000 and 100,000 persons on marijuana charges, principally possession of small amounts for personal use.

Among the findings of the Select Committee were that more than \$100 million dollars were being spent annually enforcing California's marijuana laws. In light of growing public concern over the rise of serious crime in the state, especially violent crime, the Select Committee recommended a re-directing of law enforcement resources and called for the removal of laws prohibiting the private use and possession of marijuana by adults.

In 1975, Senate Democratic Leader George R. Moscone, who had chaired the Select Committee and is now the Mayor of San Francisco, introduced legislation modeled after the Oregon law, making possession of not more than one ounce of marijuana a mandatory citable offense, punishable by a maximum fine of \$100. Though technically labeled a misdemeanor, all records of such offenses are automatically destroyed after two years and ^{then} cannot be used against a person, thus making the offense the least serious misdemeanor in the California code. Possession of more than one ounce of marijuana became a misdemeanor, subject to a fine of not more than \$500 and/or six months in jail.

Many critics of the Moscone law, most notably Los Angeles Police Chief Ed Davis, made all kinds of dire forecasts about the massive increase in marijuana

use and marijuana offenses which they claimed would occur under the new law. An "epidemic" of pot smoking was forecast and opponents of the law warned of increasing law enforcement costs to handle the expected surge in marijuana violations.

In fact, just the opposite happened. Last month, the State Office of Narcotics and Drug Abuse (SONDA) released the findings of a \$20,000 federally-funded study into the impact of California's new marijuana law. I am sure that copies of this report would be made available to any member of the Nevada Legislature who would like one, and I am sure the findings would be most reassuring to persons who are concerned about the effects of decriminalization.

Among the important findings of the SONDA study, based on arrest figures and other data compiled the first six months of 1976, were that adult marijuana possession arrests decreased 47% under the new law; juvenile marijuana possession arrests decreased 15%; and marijuana seizures, confiscated by local, state and federal authorities, also decreased 10%. California clearly has not become over-run by dope-crazed marijuana users as opponents of the law had predicted.

What happened instead was a re-prioritization of limited law enforcement resources towards more serious crimes. In the drug area, arrests went up for heroin offenses, as enforcement efforts shifted away from marijuana. Likewise, there was a tremendous decrease of marijuana offenders in publicly-funded drug education and treatment programs, with more resources allocated to persons with more serious drug problems.

Altogether, the SONDA study reported that it "conservatively estimated" that local criminal justice agencies and courts will at save at least \$25 million dollars in workload costs in 1976, due to reduced arrests and citations, and a substantial reduction in law enforcement and judicial system effort in handling cited cases. There have also been savings noted in the State Department of Justice as well as an increase in state and local revenues from fines collected by the courts.

The SONDA study also included a statewide survey of marijuana usage patterns

and attitudes, conducted last November by the Field Research Corporation. This survey reported that more than two million California adults regularly use marijuana, but that less than 3% of the people surveyed tried marijuana for the first time within the past year, since the new law took effect, and less than half this number--three persons out of one thousand statistically--indicated that they were more willing to try marijuana because of the penalty reduction. Lack of interest, not the law, was the major reason for not using marijuana. The survey found that the frequency of marijuana use decreased from earlier surveys, and that a majority of users do so once a week or less.

In terms of public attitudes, the statewide survey reported the overwhelming approval of the new law throughout California. 61% of all Californians either approve of the new law or prefer that marijuana be legalized completely. These lenient approaches are favored by a majority of adults in all regions of the state and in every age group except those over 60 years of age. Even those who have never tried marijuana prefer the new law or legalization instead of a return to stiffer penalties.

California's Secretary of Health and Welfare, Mario Obledo, summarized the findings of SONDA and the statewide survey:

"The state's new marijuana law evidently has the approval of a majority of Californians. It has reduced costs substantially, and although there has been some reported increase in current users, frequency of use has declined, and people do not attribute their decision to use marijuana on the reduction of penalties. . . . Based on the information we have, I would have to conclude that enactment of SB 95 (the new marijuana law) was the right decision on the part of the Legislature and the Governor."

In light of the success of the laws in Oregon, California and the other six states, NORML strongly urges enactment of similar legislation in Nevada. Just as California abandoned felony penalties for simple possession in 1975, with major savings as a result, the people of the State of Nevada would benefit from such a change in 1977. Thank you very much for your consideration of this important issue.

* * * * *

EXHIBIT D.

December 15, 1976

MEMORANDUM

TO: Nevada State Legislature
Governor Mike O'Callaghan
Lt. Governor Robert Rose
Attorney General Robert List
Area Media

FROM: State Board of Directors,
American Civil Liberties Union of Nevada
ENDORSED BY: United Students, University
of Nevada System (USUNS)

SUBJECT: Marijuana Possession

The American Civil Liberties Union of Nevada would again like to call your attention to the rapidly changing attitudes of the public and other legislative bodies concerning the possession of marijuana. We believe the time has come for Nevada to reduce its penalties, now the most severe in the nation, to bring them into line with the realities of our society.

While the ACLUN opposes all penalties for personal possession and use of marijuana as a matter of principle, we feel that a reasonable approach at the present time would be passage of an Oregon-type bill reducing the penalty for possession and non-remunerative exchange of marijuana to a civil fine not to exceed \$100.00.

I. THE SITUATION IN NEVADA

At the present time, the basic penalty in Nevada for possession of any amount of marijuana is a felony sentence of one to six years for first offense. Nevada is the only state in which possession is a mandatory felony.

There is considerable variation in enforcement procedures in various parts of the state. Prosecutors in Washoe and Clark counties, reflecting liberalized public opinion in these areas, generally recommend probation for first offenders, while in some rural areas felony prosecutions are conducted vigorously. As a result, possession of marijuana has already been largely decriminalized (de facto) in the most populous areas of the state.

II. SHIFTING PUBLIC OPINION IN NEVADA

A poll conducted in September of 1976 by Senators Raggio and Young shows a dramatic shift in public opinion in Washoe County:

	<u>Yes</u>	<u>No</u>	<u>Undecided</u>	<u>No Response</u>
Should possession of less than an ounce of marijuana be reduced to the misdemeanor class of crime?	64.0%	30.7%	4.3%	1.0%
Should the Legislature create a new class of offense for the (marijuana) drug area known as a Violation (similar to provisions in Oregon and California)?	54.3%	21.7%	20.7%	3.3%

It is reasonable to assume that a statewide survey would show at least as large a sentiment for reduction of penalties. These results should be compared to the strong support for harsh penalties only a few years ago.

III. THE NATIONWIDE TREND

Opinion polls throughout the country have reflected changes in attitudes on marijuana possession similar to those in Washoe County. Decriminalization has been endorsed by many responsible and influential organizations, such as the American Bar Association, American Medical Association, American Public Health Association, National Education Association, and National Council of Churches, and such conservative columnists as William F. Buckley, Jr., James J. Kilpatrick, and Ann Landers.

Eight states (Oregon, California, Colorado, Alaska, Ohio, Minnesota, South Dakota, and Maine) and the District of Columbia have voted to reduce the penalty for possession to a fine of \$100.00 or less. The Oregon law, in effect since 1973, has led to no increase in marijuana use, and has been considered successful by most prosecutors, law enforcement organizations, and judges in the state. Oregon-type bills have a strong chance of passage in at least eleven more states in 1977, including Arizona and Washington. Some of these bills undoubtedly would have passed in 1976 but for the pressures of an election year. Decriminalization bills

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have been approved by legislative committees in several other states, and in some cases, have passed one house of the legislature.

Even among the states which have not moved toward elimination of jail terms, all except Nevada have reduced minimum penalties to a misdemeanor. At one time, virtually every state considered possession a felony, and some carried life imprisonment penalties. These legislatures have determined that the public interest is no longer served by felony penalties.

IV. REASONS FOR THE CHANGES

Here are some of the most commonly expressed reasons for the shifts in popular attitudes toward reduced penalties:

1. Scientific Evidence: While the evidence is inconclusive as to whether marijuana is harmless, it is clear that it is no more (and probably less) harmful than alcohol or tobacco. The original sensational arguments for a felony penalty have been thoroughly discredited.
2. Cost: Approximately \$600 million is spent annually nationwide to enforce marijuana laws. A legislative study in California showed that each marijuana arrest cost an average of \$1630.00 in 1968 (probably much more in 1976), and each prisoner costs the state approximately \$10,000.00 per year. In these times of economic crisis, these funds could be much better used for other purposes.
3. Burdens on Legal System: The costs of marijuana laws are measured in more than money. Much of the attention and efforts of law enforcement agencies is diverted away from problems of serious crime, and the flood of marijuana cases (20%-30% of all criminal cases) is a significant contribution to the overloading of our court system.
4. Failure of Deterrence: The present laws have not prevented a tremendous increase in the use of marijuana. Approximately 25-30 million Americans have tried marijuana; estimates run 55%-60% among college students. The situation is strongly reminiscent of the Prohibition Era.
5. Inconsistency of Law Enforcement: Only a very small percentage of all people who possess marijuana are arrested, and violations are usually discovered accidentally. Like other victimless

5. continued: crimes, these laws encourage questionable tactics by overzealous law enforcement agencies. In addition, prosecutors treat cases differently in various parts of the state, as described earlier. Such inconsistencies can only create disrespect for the law.
6. Disrespect for the Law: It is difficult to promote respect for the law, particularly among young persons, when so many people feel that such highly visible laws as those concerning marijuana are unjust. The President's Commission found that 53% of all young people 16-17 years of age know someone who has been arrested for possession of marijuana.
7. Difficulty of Drug Education: Until the fundamental distinction between marijuana and hard drugs is reflected in the legal penalties, it will be much more difficult to educate the public (especially youths) about the problems and dangers of hard drugs.

V. CONCLUSION

We call on every Nevada legislator to initiate, sponsor, and support legislation that would:

1. Set a maximum fine of \$100.00 or less for the possession or non-remunerative exchange of small amounts of marijuana.
2. Retroactively reduce, on request, all previous misdemeanor and felony sentences for possession or exchange of small amounts of marijuana. Such steps have been taken in several states.

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opinion By JOEL FORT, M.D.

THERE ARE an estimated 10,000,000 Americans who smoke marijuana either regularly or occasionally, and they have very obvious reasons for wishing that pot were treated more sensibly by the law. As one of the 190,000,000 who have never smoked marijuana, I also favor the removal of grass from the criminal laws, but for less personal reasons. It is my considered opinion, after studying drug use and drug laws in 30 nations and dealing with drug-abuse problems professionally for 15 years, that the present marijuana statutes in America not only are bad laws for the offending minority but are bad for the vast majority of us who never have lit a marijuana cigarette and never will.

That some changes in these laws are coming in the near future is virtually certain, but it is not at all sure that the changes will be improvements.

On May 19, 1969, the U. S. Supreme Court, in an 8-0 vote, declared that the Marijuana Tax Act of 1937 was unconstitutional. This decision delighted the

defendant, Timothy Leary, and was no surprise at all to lawyers who specialize in the fine points of constitutional law. It had long been recognized that the Marijuana Tax Act was "vulnerable"—a polite term meaning that the law had been hastily drawn, rashly considered and railroaded through Congress in a mood of old-maidish terror that spent no time on the niceties of the Bill of Rights, scientific fact or common sense.

Celebrations by marijuanaphiles and lamentations by marijuanaphobes, however, are both premature. The Court, while throwing out this one inept piece of legislation, specifically declared that Congress has the right to pass laws governing the use, sale and possession of this drug (provided these laws stay within the perimeter of the Constitution).

And, of course, state laws against pot, which are often far harsher than the Federal law, still remain in effect.

There were two defects found by the Supreme Court in the Federal anti-marijuana

POT: A RATIONAL APPROACH

a leading authority on psychopharmacology calls for a lifting of legal prohibitions and punishments relating to marijuana—and explains why

law—a section that requires the suspect to pay a tax on the drug, thus incriminating himself, in violation of the Fifth Amendment; and a section that assumes (rather than requiring proof) that a person with foreign-grown marijuana in his possession knows it is smuggled. These provisions were perversions of traditional American jurisprudence, no less than the remaining parts of the law that are bound to fall when challenged before the Supreme Court. These forthcoming decisions will, inevitably, affect the anti-marijuana laws of the individual states as well. However, the striking down of the old laws does not guarantee that the new ones will be more enlightened; it merely invites more carefully drawn statutes that are less vulnerable to judicial review. In fact, in a message to Congress, President Nixon specifically demanded harsher penalties for marijuana convictions. But every sane and fair-minded person must be seriously concerned that the new laws are more just and more in harmony with known fact than the old ones. In my opinion, such new laws must treat marijuana no more harshly than alcohol is presently treated.

It is ironic that our present pot laws are upheld chiefly by the older generation, and flouted and condemned by the young; for it is the senior generation that should understand the issue most clearly, having lived through the era of alcohol prohibition. They saw with their own eyes that the entire nation—not just the drinkers and the sellers of liquor—suffered violent moral and mental harm from that particular outbreak of armed and rampant puritanism. They should certainly remember that attempts to legislate morality result only in widespread disrespect for law, new markets and new profits for gangsters, increased violence and such wholesale bribery and corruption that the Government itself becomes a greater object of contempt than the criminal class. Above all, they should be able to see the parallel between the lawless Twenties and the anarchic Sixties and realize that both were produced by bad laws—laws that had no right to exist in the first place.

“Bad law,” it has been said, “is the worst form of tyranny.” An open tyranny breeds open rebellion, and the issues are clear-cut; bad law, in an otherwise democratic nation, provokes a kind of cultural nihilism in which good and evil become hopelessly confused and the rebel, instead of formulating a single precise program, takes a perverse delight in anything and everything that will shock, startle, perplex, anger, baffle and offend the establishment. Thus it was during alcohol prohibition and thus it is under marijuana prohibition. The parallel is not obvious only because there were already millions of whiskey drinkers when

the Volstead Act became law in 1919, leading to immediate flouting of “law and order” by vast hordes—whereas the use of marijuana did not become extensive until the early 1950s, more than 13 years after the Government banned pot in 1937. But the results, despite the delay, are the same: We have bred a generation of psychological rebels.

Banning marijuana not only perpetuates the rebelliousness of the young but it also establishes a frightening precedent, under which puritanical bias is more important to our legislators than experimentally determined fact—something every scientist must dread. Dr. Philip Handler, board chairman of the National Science Foundation, bluntly told a House subcommittee investigating drug laws, “It is our puritan ethics . . . rather than science” that say we should not smoke marijuana.

Consider the most recent study of the effects of marijuana, conducted under careful laboratory conditions and reported in *Science*. This is the research performed by Drs. Norman E. Zinberg and Andrew T. Weil at Boston University in 1968. This study was “double-blind”; that is, neither the subjects nor the researchers knew, during a given session, whether the product being smoked was real marijuana (from the female *Cannabis* plant) or an inactive placebo (from the male *Cannabis* plant). Thus, both suggestibility by the subjects and bias by the experimenters were kept to the scientific minimum. The results were:

1. Marijuana causes a moderate increase in heartbeat rate, some redness of the eyes and virtually no other physical effects. Contrary to the belief of both users and policemen, pot does not dilate the pupils—this myth apparently derives from the tradition of smoking *Cannabis* in a darkened room; it is the darkness that dilates the pupils.

2. Pot does not affect the blood-sugar level, as alcohol does, nor cause abnormal reactions of the involuntary muscles, as LSD often does, nor produce any effects likely to be somatically damaging. In the words of Zinberg and Weil, “The significance of this near absence of physical effects is twofold. First, it demonstrates once again the uniqueness of hemp among psychoactive drugs, most of which strongly affect the body as well as the mind. . . . Second, it makes it unlikely that marijuana has any seriously detrimental physical effects in either short-term or long-term usage.”

3. As sociologist Howard Becker pointed out long ago, on the basis of interviews with users, the marijuana “high” is a learned experience. Subjects who had never had *Cannabis* before simply did not get a “buzz” and reported very minimal subjective reactions, even while physically

“loaded” with very high doses, while experienced users were easily turned on.

4. The hypothesis about “set and setting” strongly influencing drug reactions was confirmed. The pharmacological properties of a psychoactive drug are only one factor in a subject’s response: equally important—perhaps more important—are the set (his expectations and personality type) and the setting (the total emotional mood of the environment and persons in it).

5. Both inexperienced subjects and longtime users did equally well on some tests for concentration and mental stability, even while they were on very high doses. On tests requiring a higher ability to focus attention, the inexperienced users did show some temporary mental impairment, but the veterans sailed right on, as if they were not high at all. In short, experienced potheads do not have even a temporary lowering of the intelligence while they are high, much less a permanent mental impairment.

6. On some tests, the experienced users scored even higher while stoned than they did when tested without any drug.

7. Not only alcohol but even tobacco has more adverse effects on the body than marijuana does.

As Zinberg and Weil noted sardonically in a later article in *The New York Times Magazine*, there is a vicious circle operating in relation to marijuana: “Administrators of scientific and Government institutions feel that marijuana is dangerous. Because it is dangerous, they are reluctant to allow [research] to be done on it. Because no work is done, people continue to think of it as dangerous. We hope that our own study has significantly weakened this trend.”

One slight sign that the trend may have been weakened was the appearance last June of a study by the Bureau of Motor Vehicles in the state of Washington concerning the effects of *Cannabis* on driving ability. Using driving-traffic simulators, not only did the study find that marijuana has less adverse effect on driving ability than alcohol—which many investigators have long suspected—but also, as in the Boston study, the evidence indicated that the only detrimental effect is on inexperienced users. Veteran potheads behave behind the wheel as if they were not drugged at all.

In short, we seem to have a drug here that makes many users very euphoric and happy—high—without doing any of the damage done by alcohol, narcotics, barbiturates, amphetamines or even tobacco.

But we didn’t have to wait until 1968 to learn that pot is relatively harmless. Some research has been done in the past, in spite of the vicious circle mentioned by Zinberg and Weil. As far back as

1942, the mayor of New York City, Fiorello La Guardia, alarmed by sensational press stories about "the killer drug, marijuana" that was allegedly driving people to rape and murder, appointed a commission to investigate the pot problem in his city. The commission was made up of 31 eminent physicians, psychiatrists, psychologists, etc., and six officers from the city's narcotics bureau. If there was any bias in that study, it must have been directed against marijuana, considering the presence of the narcotics officers, not to mention psychiatrists and M.D.s, who were then, as now, rather conservative groups. Nevertheless, after two years of hard study, including psychological and medical examinations of users, electroencephalograms to examine for brain damage, sociological digging into the behavior patterns associated with marijuana use and intelligence tests on confirmed pot-heads, the commission concluded:

Those who have been smoking marijuana for a period of years showed no mental or physical deterioration which may be attributed to the drug. . . . Marijuana is not a drug of addiction, comparable to morphine. . . . Marijuana does not lead to morphine or heroin or cocaine addiction. . . . Marijuana is not the determining factor in the commission of major crimes. . . . The publicity concerning the catastrophic effects of marijuana smoking in New York City is unfounded.

Even earlier, a study of marijuana use in the Panama Canal Zone was undertaken by a notably conservative body, the United States Army. Published in 1925, the study concluded, "There is no evidence that marijuana as grown here is a habit-forming drug" and that "Delinquencies due to marijuana smoking which result in trial by military court are negligible in number when compared with delinquencies resulting from the use of alcoholic drinks which also may be classed as stimulants or intoxicants."

What may be the classic study in the whole field goes back further: to the 1893-1894 report of the seven-member Indian Hemp Drug Commission that received evidence from 1193 witnesses from all regions of the country (then including Burma and Pakistan), professionals and laymen, Indians and British, most of whom were required to answer in writing seven comprehensive questions covering most aspects of the subject. The commission found that there was no connection between the use of marijuana and "social and moral evils" such as crime, violence or bad character.

It also concluded that occasional and moderate use may be beneficial; that moderate use is attended by no injurious physical, mental or other effects; and that moderate use is the rule: "It has been the most striking feature of this inquiry to find how little the effects of hemp drugs have intruded themselves on observation. The large numbers of witnesses of all classes who profess never to have seen them, the very few witnesses who could so recall a case to give any definite account of it and the manner in which a large proportion of these cases broke down on the first attempt to examine them are facts which combine to show most clearly how little injury society has hitherto sustained from hemp drugs." This conclusion is all the more remarkable when one realizes that the pattern of use in India included far more potent forms and doses of Cannabis than are presently used in the United States. The commission, in its conclusion, stated:

Total prohibition of the hemp drugs is neither necessary nor expedient in consideration of their ascertained effects, of the prevalence of the habit of using them, of the social or religious feelings on the subject and of the possibility of its driving the consumers to have recourse to other stimulants [alcohol] or narcotics which may be more deleterious.

Ever since there have been attempts to study marijuana scientifically, every major investigation has arrived at, substantially, the same conclusions, and these directly contradict the mythology of the Federal Bureau of Narcotics. In contrast with the above facts, consider the following advertisement, circulated before the passage of the 1937 Federal anti-marijuana law:

Beware! Young and Old—People in All Walks of Life! This [picture of a marijuana cigarette] may be handed you by the friendly stranger. It contains the Killer Drug "Marijuana"—a powerful narcotic in which lurks Murder! Insanity! Death!

Such propaganda was widely disseminated in the mid-1930s, and it was responsible for stampeding Congress into the passage of a law unique in all American history in the extent to which it is based on sheer ignorance and misinformation.

Few people realize how recent anti-marijuana legislation is. Pot was widely used as a folk medicine in the 19th Century. Its recreational use in this country began in the early 1900s with Mexican laborers in the Southwest, spread to Mexican Americans and Negroes in the

South and then the North, and then moved from rural to urban areas. In terms of public reaction and social policy, little attention was paid to pot until the mid-1930s (although some generally unenforced state laws existed before then). At that time, a group of former alcohol-prohibition agents headed by Harry J. Anslinger, who became head of the Federal Bureau of Narcotics, began issuing statements to the public (via a cooperative press) claiming that marijuana caused crime, violence, assassination, insanity, release of anti-social inhibitions, mental deterioration and numerous other onerous activities.

In what became a model for future Federal and state legislative action on marijuana, Congressional hearings were held in 1937 on the Marijuana Tax Act. No medical, scientific or sociological evidence was sought or heard; no alternatives to criminalizing users and sellers were considered; and the major attention was given to the oilseed, birdseed and paint industries' need for unrestrained access to the hemp plant from which marijuana comes. A U.S. Treasury Department witness began his testimony by stating flatly that "Marijuana is being used extensively by high school children in cigarettes with deadly effect," and went on to introduce as further "evidence" an editorial from a Washington newspaper supposedly quoting the American Medical Association as having stated in its journal that marijuana use was one of the problems of greatest menace in the United States. Fortunately for historical analysis, a Dr. Woodward, serving as legislative counsel for the American Medical Association, was present to point out that the statement in question was by Anslinger and had only been reported in the A.M.A. journal.

Dr. Woodward deserves a posthumous accolade for his singlehanded heroic efforts to introduce reason and sanity to the hearing. Most importantly, the doctor (who was also a lawyer) criticized the Congressmen for proposing a law that would interfere with future medical uses of Cannabis and pointed out that no one from the Bureau of Prisons had been produced to show the number of prisoners "addicted" to marijuana, no one from the Children's Bureau or Office of Education to show the nature and extent of the "habit" among children and no one from the Division of Mental Hygiene or the Division of Pharmacology of the Public Health Service to give "direct and primary evidence rather than indirect and hearsay evidence." Saying that he assumed it was true that a certain amount of "narcotic addiction" existed, since "the newspapers have called attention to it so promi-

nently that there must be some grounds for their statements," he concluded that the particular type of statute under consideration was neither necessary nor desirable. The Congressmen totally ignored the content of Dr. Woodward's testimony and attacked his character, qualifications, experience and relationship to the American Medical Association, all of which were impeccable. He was then forced to admit that he could not say with certainty that no problem existed. Finally, his testimony was brought to a halt with the warning, "You are not cooperative in this. If you want to advise us on legislation, you ought to come here with some constructive proposals rather than criticism, rather than trying to throw obstacles in the way of something that the Federal Government is trying to do."

A similar but shorter hearing was held in the Senate, where Anslinger presented anecdotal "evidence" that marijuana caused murder, rape and insanity.

Thus, the Marijuana Tax Act of 1937 was passed—and out of it grew a welter of state laws that were, in many cases, even more hastily ill conceived.

The present Federal laws impose a two-to-ten-year sentence for a first conviction for possessing even a small amount of marijuana, five to twenty years for a second conviction and ten to forty for a third. If Congress is not forced to recognize scientific fact and basic civil liberties, these penalties will be retained when the new Federal law is written without the sections declared invalid in the Leary case. The usual discretion that judges are given to grant probation or suspended sentences for real crimes is taken from them by this (and state) law as is the opportunity for parole. For sale or "dissemination," no matter how small the quantity of marijuana involved, and even if the dissemination is a gift between friends, the Federal penalty for first-offense conviction is five to twenty years; for a second offense, it's ten to forty.

The state laws, as I stated, are even hairier. Here are two real, and recent, cases: In Texas, Richard Dorsey, a shoe-shine-stand operator in a bowling alley, sold a matchbox full of marijuana (considerably less than an ounce) to a Dallas undercover policeman, for five dollars. His sentence: 50 years.

In Michigan, for selling five dollars' worth of grass to another police agent, Larry Belcher was sentenced to 20 to 30 years in prison. This case is worth noting as an example of how the marijuana laws actually function in many instances. Belcher is the only individual in Grand Traverse County to receive this sentence in the past two years; 25 other marijuana arrestees were all placed on probation within that time. Belcher, it appears, was the author of a column called "Dope-O-Scope" in a local under-

ground newspaper and had presented there some of the same scientific facts incorporated into this article. People who publicly oppose the marijuana laws and marijuana mythology of our narcotics police have an unusually high arrest record.

There is no consistency in these laws from state to state. Until 1968, South Dakota had the nation's lowest penalty for first-offense possession—90 days (it has since been raised to two to five years); however, if you crossed the state line to North Dakota, the picture changed abruptly. North Dakota had (and still has) the nation's highest penalty for first-offense possession—99 years at *hard labor*. In New York state, in spite of the revelatory work of the La Guardia commission, the penalties have increased since the Forties. Today, in that state, selling or transferring marijuana to anyone under 21 carries a penalty of one to 25 years, even if the transfer is by somebody who is also under 21 and is a gift to a friend. (The state legislature recently tried to raise this penalty to 15 years to life, but Governor Rockefeller vetoed the bill.) In Louisiana, a minor selling to a minor is subject to five to fifteen years' imprisonment, while an adult selling to a minor may receive the death penalty. Finally, in Georgia, the penalty for a first conviction for selling to a minor is life imprisonment. If the offender is paroled or his sentence suspended, and he is convicted again, he can be sentenced to death.

The barbarity of such penalties in relation to pot's relative harmlessness is even beginning to be recognized in Washington, despite incessant and quite unscientific efforts to maintain the old mythology, emanating from the Federal Bureau of Narcotics. In 1963, President Kennedy's Advisory Commission on Narcotic and Drug Abuse called into question some of the prevailing beliefs about marijuana and recommended lighter sentences for possession. In 1967, President Johnson's Commission on Law Enforcement and the Administration of Justice took a similar view, recommending more flexible penalties; more significantly, it stated that marijuana has virtually nothing in common with true narcotics or opiates—the first time that fact was publicly admitted by a U. S. Government agency. And in 1967, Dr. James Goddard, while commissioner of the U. S. Food and Drug Administration, was quoted as saying that it would disturb him less if his teenage daughter smoked one marijuana cigarette than if she drank an alcoholic beverage. (Faced with a predictable outcry from conservatives in Congress, Goddard said he had been misquoted—but quite honestly added that the known facts did not support the opinion that marijuana is more dangerous than alcohol.)

Not only is marijuana comparatively

harmless on the face of all the evidence but there are even reasons to believe it may be beneficial in some cases. In many countries, Cannabis has been used medicinally for as long as 5000 years and is regarded as a sovereign remedy for a variety of ills. There are references to medicinal uses of marijuana in American medical journals (mostly of the 19th Century) where doctors reported it as useful as an analgesic, appetite stimulant, antispasmodic, anti-depressant, tranquilizer, anti-asthmatic, topical anesthetic, child-birth analgesic and antibiotic. My own investigations in areas of the world where this folk medicine still flourishes and my study of 20th Century scientific literature lead me to believe that marijuana would be useful for treating depression, loss of appetite, high blood pressure, anxiety and migraine.

An English psychiatrist who employed marijuana in the therapy of depressive patients, Dr. George T. Stockings, concluded that it "might be more effective than any tranquilizer now in use." Dr. Robert Walton of the University of Mississippi has also suggested its use for certain gynecological and menstrual problems and in easing childbirth. We should not let lingering puritanical prejudices prevent us from investigating these areas further. As Dr. Tod Mikuriya, a psychiatrist formerly associated with the National Institute of Mental Health, notes, "The fact that a drug has a recreational history should not blind us to its possible other uses. Morton was the first to use ether publicly for anesthesia after observing medical students at 'ether frolics' in 1846." While such speculations about the benefits of pot must await further research before a final answer is given, there can be no doubt that a grave injustice has been suffered by those currently in prison because of laws passed when the drug was believed to incite crime and madness.

Even the Federal Bureau of Narcotics and its propagandists have largely given up the "steppingstone theory" (that marijuana smoking leads to use of addictive drugs) and the "degeneracy theory" (that it leads to crime or "bad character"). They have recently rallied around the oldest, and most discredited, canard of all—the legend that marijuana causes insanity. To shore up this crumbling myth, they cite recent research at the Addiction Research Center in Lexington, Kentucky, where 30 former opiate addicts were given high doses of synthetic THC (the active ingredient in marijuana) or concentrated Cannabis extract. Most of the subjects showed marked perceptual changes, which the experimenter chose to describe as "hallucinations" and "psychotic reactions." This, of course, merely confirms a basic axiom of pharmacology: i.e., with increasing doses of any drug, different and more dangerous responses will occur: you could obtain some spec-

tacularly adverse reactions with horse doctors' doses of aspirin, coffee or even orange juice. (With ordinary doses of THC or marijuana, the subjects experienced the same "high" found in normal, social marijuana smoking.)

A more serious defect in this research lies in the loaded terminology with which the experimenter, Dr. Harris Isbell, reported his results. Psychiatrist Thomas Szasz, a crusader for reform in the mental-health field, points out that a "psychotic reaction" is not something in an individual, Mr. A, like cancer; rather, it is a label that a second individual, Mr. B (more often, Dr. B), pins on Mr. A. The fact is that the subjects experienced perceptual changes; it is not a fact but merely an *opinion* whether one wants to call these changes "consciousness expansion" and "transcendence of the ego" (with Timothy Leary) or "hallucinations" and "psychotic reactions" (with Dr. Isbell).

Sociologist Howard Becker—the observer who first noted the effect of "learning" on the marijuana experience—has researched medical literature from the early 1930s to the present in search of reported cases of "marijuana psychosis." He found none after 1940, a remarkable fact, considering the pyramiding acceleration of marijuana use during the Forties, Fifties and Sixties. Becker concluded that persons who were diagnosed as "marijuana psychotics" in the Thirties were simply anxious and disoriented because they hadn't learned yet how to use the drug. Dr. Isbell's subjects, almost certainly, were not advised about the effects of the drug; and his experiment is really just another proof of the effect of "set and setting" as well as high doses on drug experience.

A 1946 study examined 310 persons who had been using marijuana for an average of seven years each. There was no record of mental-hospital commitment among any of them.

The marijuanaphobes also cite studies from the Near East to prove that marijuana is associated with psychosis. In the first place, many of the people in these studies smoked hashish, not marijuana; and while hashish is derived from the same plant, *Cannabis sativa*, it is otherwise a considerably stronger form of the drug. One might compare the two Cannabis drugs with two alcohol drugs as follows: Smoking a pipe of hashish is equivalent to drinking a fifth of vodka; smoking the same pipe of marijuana is about like drinking a bottle of beer. However, the studies themselves do not deserve such careful rebuttal; they are scientifically worthless. They prove only that, in countries where most of the population regularly use Cannabis, many of the patients

in mental hospitals also have a history of Cannabis use. Usually the proportion of users in the institution is less than that in the general population, leading to a possible conclusion that it is psychologically beneficial. In fact, however, there are no scientifically valid statistics or records kept at these facilities. The testimony turns out, on examination, to be impressionistic and anecdotal rather than scientific and precise. The diagnosis of psychosis and its attribution to Cannabis is often made by a ward attendant. In short, we are faced with the kind of "evidence" that the Indian Hemp Drug Commission discarded in 1893. I have visited the mental hospitals of several of the countries involved in the "Cannabis psychosis" and none of the record keeping involved meets the minimum requirements demanded of freshman scientific reports in American colleges.

Perhaps the last bastion of marijuanaphobia is the argument by uncertainty. "Who knows?" this line goes. "Maybe, in the future, marijuana might be discovered, by further research, to have dangerous side effects that haven't been noted yet." This argument, of course, is unanswerable; but it applies equally well to such diverse objects as diet pills and bubble gum. One cannot prove that the future will not discover new things; but does such a fact—science's lack of clairvoyance—justify our present marijuana laws? It clearly does not. No drug, including marijuana, will ever be found to be totally harmless; and no drug, particularly marijuana, will ever be found to be as dangerous as the hydrogen bomb (once claimed by Anslinger). Social policy should not be determined by this anyway. The possible risks should be dealt with by education. What is unacceptable is locking a man up for 99 years for possessing something of far less proven danger than tobacco, alcohol, automobiles and guns.

Instead of decreasing marijuana usage, our present laws have created the contempt for Government about which I spoke earlier. In addition to continuing to disobey the law, hordes of young people have begun to flout it publicly. There have been smoke-ins—masses who gather in a public park, where those in the inner core of the group light up, while the outer perimeter obstruct and slow down the police until the evidence is consumed—at Berkeley, in Boston and elsewhere. Planting marijuana in conspicuous places has become a fad; among the notable seedings have been the center strip of Park Avenue in New York City, the lawn in front of a police station in ultrarespectable Westchester County, the UN Building and (twice recently) in front of the state capitol in Austin, Texas.

But the American marijuana tragedy is even worse than I have indicated. Like other crimes-without-victims, pot smoking is a private activity and involves no harm to anyone else. Remember: The police do not have to engage in cloak-and-dagger activities to find out if there have been any banks or grocery stores robbed lately—the bankers and store owners (the victims) call them immediately. But since there is no victim in the "crime" of smoking marijuana, nobody is going to call the police to report it—except, very rarely, a neighbor who finds the evidence. Hence, the entire apparatus of the police state comes into existence as soon as we attempt to enforce anti-grass legislation; and by the nature of such legislation, totalitarian results must ensue. We cannot police the private lives of the citizenry without invading their privacy; this is an axiom.

That a man's home is his castle has long been a basic principle of Anglo-American jurisprudence, and some of us can still recall the near poetry of the great oration by William Pitt in which he says, "The poorest man may in his cottage bid defiance to the force of the Crown. It may be frail, its roof may shake; the wind may blow through it; the storms may enter; the rain may enter; but the King of England cannot enter—all his forces dare not cross the threshold of the ruined tenement!" This principle goes back to the Magna Charta and is firmly entrenched in the Fourth Amendment to our own Constitution, guaranteeing the people "the right . . . to be secure in their persons, houses, papers and effects, against unreasonable searches and seizures."

This libertarian tradition is a great hindrance to the police when they attempt to enforce sumptuary laws—laws concerning the private morals of the citizens. And, in fact, the enforcement of the marijuana law requires pernicious police behavior.

For instance, the *Chicago Sun-Times* told, in 1967, how the police of that city obtain search warrants for use in legalizing raids that otherwise would be mere "fishing expeditions"—intolerable to any American court. In dealing with the organized-crime cartel usually called "the Syndicate," the police have obtained from the courts the right to use what are called "blank warrants"—warrants in which the witness who alleges he has seen the crime is permitted to sign a false name. This is supposedly necessary to protect informers against the wrath of the reputedly all-seeing and all-powerful Syndicate. Once this dangerous precedent was set, the police began applying

it to marijuana users as well. As the *Sun-Times* noted:

Those methods are dubious. . . . We refer to the method of obtaining search warrants. The informer signs a search-warrant complaint, with an assumed name, alleging perhaps that he bought illicit drugs from a certain person, at a certain place. The police do not have to disclose the name of the informer or the time when the drugs were bought. There is also a device known as constructive possession: The police can arrest anybody found in the vicinity of prohibited drugs, whether he's an innocent visitor or the real culprit. The frame-up is easy. Plant the drugs, get the search warrant, grab everybody in sight. It could happen to you and you'd never have the right to face your accuser.

William Braden, a *Sun-Times* reporter, also uncovered one informer, a heroin addict, who admitted signing dozens of such warrants without the names of the accused on them. The narcotics squad could then type in the name of any individual whose apartment they wanted to raid and it would be perfectly "legal" in form—but a terrifying distance in spirit from the actual meaning of the Constitution. Such raids, of course, violate the Sixth Amendment—guaranteeing the right "to be confronted with the witnesses" against you—as well as the Fourth (no "unreasonable searches"); and they occur everywhere in the nation.

Most of us never hear of such things, because reporters routinely print the police version of the raid, without interviewing the arrested "dope fiends." It is also standard practice for the police to multiply the quantity of drugs seized in such a raid by a factor of two (and the price by a factor of ten) when giving the news to the press. This makes for impressive headlines; it also contributes to the growing tendency toward "trial by newspaper," which worries civil libertarians.

Some types of entrapment are regarded as legal in America today—although some still are not. In my own opinion, all forms of entrapment are profoundly immoral, whether technically legal or illegal; but my opinion is, perhaps, immaterial. The results of this practice, however, are truly deplorable from the point of view of anyone who has any lingering affection for the spirit of the Bill of Rights.

Here is a specific case: John Sinclair, a poet, leader of the Ann Arbor hippie community and manager of a rock group called MC-5, became friendly, around October 1966, with Valhan Kapagian and Jane Mumford, who presented themselves to him as members of the hippie-artist-mystic subculture that exists in all of our large cities. Over a period of two

months, they worked to secure his confidence and friendship and several times asked him to get them some marijuana. Finally, on December 22, Sinclair, apparently feeling that he could now trust them, gave two marijuana cigarettes to Miss Mumford—one for her and one for Kapagian. He was immediately arrested; his "friends" were police undercover agents.

Sinclair has been convicted of both "possessing" and "dispensing" marijuana and faces a minimum of 20 years under each statute, and a maximum of life for the sale. If his appeal is not upheld, the very smallest sentence he could receive is 40 years. As his lawyers pointed out in his appeal, "The minimum sentence to which [Sinclair] is subject to imprisonment is 20 times greater than the minimum to which a person may be imprisoned [in Michigan] for such crimes as rape, robbery, arson, kidnapping or second-degree murder. It is more than 20 times greater than the minimum sentence of imprisonment for any other offense in Michigan law, except first-degree murder."

That illegal wire tapping has also been widely used by the narcotics police was an open secret for years; now it is no secret at all—and not illegal, either. The 1968 Omnibus Crime Bill authorizes such wire tapping for suspected marijuana users. Since this usage has spread to all classes and all educational levels, such suspicion can be directed at virtually anyone (after all, the nephew and the brother of one of President Nixon's closest friends were recently busted on pot charges); thus, almost any American can now have his phone tapped legally. Considering the elastic interpretation police usually give to such Congressional authorization, an anonymous tip by any crank in your neighborhood would probably be enough to get a tap on your phone by tomorrow morning. Why not? As *Chicago Daily News* columnist Mike Royko recently wrote, "There is a democratic principle in injustice. If enough people support it, they'll all get it."

With the doctrine of "constructive possession," anyone who has a pot-smoking friend is subject to marijuana laws if he walks into the friend's house at the wrong time. In California two years ago, a woman was sentenced to sterilization for being in the same room with a man who was smoking grass. The fact that a higher court overturned this sentence does not lessen its frightening implications.

And a new wrinkle has been added. According to a story in the *San Francisco Chronicle* last June 20, the Government is planning "an unpleasant surprise for marijuana smokers—'sick pot.'" The article goes on to explain how an unspecified chemical can be sprayed on Mexican marijuana fields from a helicopter, whereupon "just a puff or two produces uncontrollable vomiting that not

even the most dedicated smoker could ignore."

This, I submit, could have come from the morbid fantasy of Kafka, Burroughs or Orwell. The Government, in its holy war against a relatively harmless drug, is deliberately creating a very harmful drug. Nor is the *Chronicle* story something dreamed up by a sensation-mongering reporter. A call to the Justice Department in Washington has confirmed that this plan has been discussed and may go into operation in the near future.

Consider, now, the actual social background in which this crusade against Cannabis is being waged. America is not the Victorian garden it pretends to be; we are, in fact, a drug-prone nation. Parents and other adults after whom children model their own behavior teach them that every time one relates to other human beings, whether at a wedding or at a funeral, and every time one has a pain, problem or trouble, it is necessary or desirable to pop a pill, drink a cocktail or smoke a cigarette. The alcohol, tobacco and over-the-counter pseudo-"sedative" industries jointly spend more than \$2,000,000 a day in the United States alone to promote as much drug use as possible.

The average "straight" adult consumes three to five mind-altering drugs a day, beginning with the stimulant caffeine in coffee, tea or Coca-Cola, going on to include alcohol and nicotine, often a tranquilizer, not uncommonly a sleeping pill at night and sometimes an amphetamine the next morning to overcome the effects of the sedative taken the evening before.

We have 80,000,000 users of alcohol in this country, including 6,000,000 alcoholics; 50,000,000 users of tobacco cigarettes; 25,000,000 to 30,000,000 users of sedatives, stimulants and tranquilizers; and hundreds of thousands of users of consciousness alterers that range from heroin and LSD to cough syrup, glue, nutmeg and catnip—all in addition to marijuana use.

Drs. Manheimer and Mellinger, surveying California adults over 21, found that 51 percent had at some time used sedatives, stimulants or tranquilizers (17 percent had taken these drugs frequently) and 13 percent had at some time used marijuana.

Further underlining the extent of use of the prescription drugs is the estimate from the National Prescription Audit that 175,000,000 prescriptions for sedatives, stimulants and tranquilizers were filled in 1968. Also enough barbiturates (Nembutal, Seconal, phenobarbital) alone are manufactured to provide 25 to 30 average doses per year for every man, woman and child in this country.

In the light of this total drug picture, the persecution of potheads seems to be a species of what anthropologists call "scapegoatism"—the selection of one minority group to be punished for the sins

of the whole population, whose guilt is vicariously extirpated in the punishment of the symbolic sacrificial victims.

Meanwhile, my criticisms—and those of increasing numbers of writers, scientific and popular—continue to bounce off the iron walls of prejudice that seem to surround Congress and state legislatures. It is quite possible that our new, post-Leary pot laws will be as bad as the old ones. If there is any improvement, it is likely to come, once again, from the courts.

Several legal challenges to our anti-pot mania are, in fact, working their way upward toward the Supreme Court, and the issues they raise are potentially even more significant than those involved in the Leary case.

First is the challenge raised by attorney Joseph Oteri in his defense of two Boston University students. Oteri's case cites the equal-protection clause of the Constitution—grass is less harmful than booze, so you can't outlaw one without the other. He also argues that the marijuana statute is irrational and arbitrary and an invalid exercise of police power because pot is harmless and wrongly defined as a narcotic, when it is, technically, not a narcotic. This is not mere hairsplitting. It is impossible, under law, to hang a man for murder if his actual crime was stealing hubcaps; it should be equally impossible to convict him of "possession of a narcotic" if he was not in possession of a narcotic but of a drug belonging to an entirely different chemical family.

And marijuana, decidedly, is not a narcotic—although just what it should be called is something of a mystery. The tendency these days is to call it a "mild psychedelic," with the emphasis on mild; this is encouraged both by the Tim Leary crowd—to whom psychedelic is a good word, denoting peace, ecstasy, non-violent revolution, union with God and the end of all neurotic hang-ups of Western man—and by those to whom psychedelic is a monster word denoting hallucinations, insanity, suicide and chaos. I doubt the psychedelic label very much and think it is as off base as narcotic. Since marijuana has very little in common with LSD and the true psychedelics, but much in common with alcohol and other sedatives, and a certain similarity also to amphetamine and other stimulants, I prefer to call it a sedative-stimulant as it is classified by Dr. Frederick Meyers, who also notes its resemblance to laughing gas (nitrous oxide). Dr. Leo Hollister finds enough resemblance to LSD to call it a sedative-hypnotic-psychedelic. *Goodman and Gilman*, the orthodox pharmacological reference, dodges the issue entirely by

listing marijuana as a "miscellaneous" drug. In any case, it is not a narcotic, and anyone arrested for having a narcotic in his possession when he actually has marijuana definitely is being charged with a crime he hasn't committed.

A second challenge, raised by Oteri and also being pressed by two Michigan attorneys, is based on the prohibition of "cruel and unusual punishments" in the Eighth Amendment. The courts have held, in the past, that a law can be struck down if the punishments it requires are cruel and unusual in comparison with the penalties in the same state for similar or related crimes. For instance, the statute against chicken stealing was made quite harsh in the early days of Oklahoma, apparently because the offense was common and provoked great public indignation. As a result, a man named Skinner was threatened with the punishment of sterilization under one section of this law. He appealed to the Supreme Court, which struck down the Oklahoma statute because similarly harsh penalties were not provided for other forms of theft. Obviously, in the states where the penalty for possession of marijuana is higher than the penalty for armed robbery, rape, second-degree murder, etc., the law is vulnerable to legal attack as cruel and unusual.

There is also the "zone of privacy" argument, originally stated in the Connecticut birth-control decision and more recently invoked by the Kentucky supreme court, in striking down a local (Barbourville, Kentucky) ordinance making it a crime to smoke *tobacco* cigarettes. The court ruled that "The city . . . may not unreasonably interfere with the right of the citizen to determine for himself such personal matters." The zone of privacy was also cited by the U. S. Supreme Court in invalidating the Georgia law against possession (not sale) of pornography.

The drug police and their legislative allies have been experimenting with our liberties for a long time now. The Leary decision, however, shows that it is not too late to reverse the trend, and the issues raised by the constitutional questions discussed above show how the erosion of our liberties can, indeed, be reversed.

A compelling medical, sociological and philosophical case exists for the full legalization of marijuana, particularly if legalization is the only alternative to the present criminalization of users. But an even more substantial case exists for ending all criminal penalties for possession or use of the drug, while still exercising some caution. I would recommend, for example, that to prevent the sale of dangerously adulterated forms of the drug, marijuana be produced under Federal supervision, as alcohol is. Furthermore, sellers of the drug

should be licensed, and they should be prohibited from selling to minors. If there are infractions of these laws, the penalties should be directed at the seller, not the user. I would also strongly recommend that all advertising and promotion of marijuana be prohibited, and that packages of the drug carry the warning: CAUTION: MARIJUANA MAY BE HARMFUL TO YOUR HEALTH.

If marijuana were to be legalized, what would happen? According to the marijuana-phobes, the weed will spread into every American home; people will become lazy and sluggish, sit around all day in a drugged stupor and talk philosophy when they talk at all; we will sink into the "backward" state of the Near Eastern and Asian nations.

There are good, hard scientific reasons for doubting this gloomy prognostication.

1. Most Americans have already found their drug of choice—alcohol—and there is more conditioning involved in such preferences than most people realize. The average American heads straight for the bar when he feels the impulse to relax; a change in the laws will not change this conditioned reflex. When the Catholic Church allowed its members to eat meat on Friday, the majority went right on following the conditioned channel that told them, "Friday is fish day."

2. Of the small minority that will try pot (after it is legalized) in search of a new kick, most will be vastly disappointed, since (a) it doesn't live up to its sensational publicity, largely given to it by the Federal Narcotics Bureau; and (b) the "high" depends, as we have indicated, not only on set and setting but, unlike alcohol, on learning.

This involves conditioning and the relationship of the actual chemistry of the two drugs to the total *Gestalt* of our culture. What pot actually does—outside mythology—is produce a state midway between euphoria and drowsiness, like a mild alcohol high; accelerate and sharpen the thoughts (at least in the subjective impression of the user), like an amphetamine; and intensify sound and color perception, although not nearly as much as a true psychedelic. It can also enhance sexual experience, but not create it—contrary to Mr. Anslinger, pot is not an aphrodisiac. It is, in short, the drug of preference for creative and contemplative types—or, at least, people with a certain streak of that tendency in their personality. Alcohol, on the other hand, depresses the forebrain, relaxes inhibitions, produces euphoria and drowsiness and, while depleting some functions, such as speech and walking, does not draw one into the mixture of sensuality and introspection created by pot. It is the drug of preference for aggressive and

extroverted types. Therefore, the picture of pot spreading everywhere and changing our culture is sociologically putting the cart before the horse; our society would first have to change basically before pot could spread everywhere.

3. Even if, against all likelihood, marijuana were to sweep the country, this would not have dire consequences. Marijuana has no specifically anti-machine property in it; it would not make our technology go away, like a wave of an evil sorcerer's wand. Nor does it dull the mental faculties, as we have seen in reviewing the scientific evidence. (I might add, here, that the highest honor students at certain Ivy League colleges are frequently pot users, and one study at Yale found more marijuana smokers at the top of the class than at the bottom.)

4. Finally, the whole specter of America sinking into backwardness due to pot is based upon totally false anthropological concepts. The Near East is not tribal, preindustrial, superstitious, and so forth, merely because Mohammed banned alcohol in the Koran but forgot to exclude Cannabis drugs also; a whole complex of historical and cultural factors is involved, not the least of which is the continuous intervention of Western imperialism from the Crusades onward. Other factors are the rigid structure of the Islamic religion and the lack of a scientific minority that can effectively challenge these dogmas; the Western world was equally backward—please note—when the Christian religion was not open to scientific dissent and criticism. Backwardness is a relative concept, and, although pot has been used in the Arabic countries for millenniums, they have several times been ahead of the West in basic science (the most famous example being their invention of algebra). The populations of these nations are not "lazy" due to marijuana nor to any other cause; they are merely underemployed by a feudalistic economic system. The ones lucky enough to find work usually toil for longer hours, in a hotter sun, than most Americans would find bearable.

Thus, treating marijuana in a sane and rational way presents no threat to our society, whereas continuing the present hysteria will alienate increasing numbers of the young while accelerating the drift toward a police state. I take no pleasure in the spread of even so mild a drug as marijuana, and I am sure (personally, not scientifically) that in a truly open, libertarian and decent society, nobody would be inclined to any kind of drug use. While I agree with the psychedelic generation about the absurdity and injustice of our criminal laws relating to

drugs, I am not an apostle of the "turn on, tune in, drop out" mystique. I recognize that drugs can be an evasion of responsibility, and that there is no simple chemical solution to all the psychic, social and political problems of our time. My own program would be: Turn on to the life around you, tune in to knowledge and feeling, and drop *in* to changing the world for the better. If that course could prevail, the adventurous young, no longer haunted by the anxiety and *anomie* of the present system, would probably discover that love, comradeship, music, the arts, sex, meaningful work, alertness, self-discipline, real education (which is a lifelong task) and plain hard thought are bigger, better and more permanent highs than any chemical can produce.

But, meanwhile, I must protest—I will continue to protest—against the bureaucrat who stands with cocktail in one hand and cigarette in the other and cries out that the innocent recreation of pot smoking is the major problem facing our society, one that can be solved only by raising the penalty to castration for the first offense and death for the second. He would be doing the young people—and all the rest of us—a true favor if he forgot about marijuana for a while and thought, a few minutes a day, about such real problems as racism, poverty, starvation, air pollution and our stumbling progress toward World War Three and the end of life on earth.

It is an irony of our time that our beloved George Washington would be a criminal today, for he grew hemp at Mount Vernon, and his diary entries, dealing specifically with separating the female plants from the male before pollination, show that he was not harvesting it for rope. The segregation of the plants by sex is only necessary if you intend to extract "the killer drug, marijuana" from the female plant.

Of course, we have no absolute evidence that George turned on. More likely, he was using marijuana as many Americans in that age used it: as a medicine for bronchitis, chest colds and other respiratory ailments. (Pot's euphoric qualities were not well known outside the East in those days.) But can you imagine General Washington trying to explain to an agent of the Federal Narcotics Bureau, "I was only smoking it to clear up my lumbago"? It would never work; he would land in prison, perhaps for as long as 40 years. He would be sharing the same cruel fate as several thousand other harmless Americans today. As it says in the book of *Job*, "From the dust the dying groan, and the souls of the wounded cry out."



THE NEW YORK TIMES, WEDNESDAY, JANUARY 28, 1976

New Marijuana Studies Show No Adverse Effect

By BAYARD WEBSTER

Several recent studies of chronic marijuana users, conducted independently in half a dozen countries, indicate that the drug has no apparent significant adverse effect on the human body or brain or on their functions.

The research essentially corroborates and expands on the results of an earlier study of marijuana use in Jamaica that found no significant correlation between heavy use of the drug and impaired physical, intellectual, social and cultural activities.

The findings were reported here yesterday in research papers delivered at a New York Academy of Sciences Conference on Chronic Cannabis Use that attracted more than 100 researchers from 10 countries.

A panel of experts, summing up the three-day conference at the Roosevelt Hotel, which was at its midpoint yesterday, pointed out that the findings should not be used as a black-or-white reason for legalizing the use of marijuana, but should be noted in the context of social pressures that lead to laws making it either legal or criminal to smoke or possess marijuana.

Need for Further Study

The panel also noted that the recent studies, reported in more than 30 scientific papers, should not be regarded as the definitive word on the effects of cannabis (that part of the marijuana plant used as the drug) but should be the spur that would lead to more comprehensive studies.

One panel member, Dr. Jared Tinklenberg of Stanford University, said that the studies disclosing a lack of evidence of dangers from chronic marijuana use had been conducted primarily among relatively young—15 to 30 years old—populations that had used marijuana for from 10 to 15 years.

"The need now," he said in an interview, "is for more research that will investigate the possible harmful effects of longer-term use—30 to 40 years among older populations.

"It's hard to find the effects of cigarette smoking on people in their 30's or 40's," he said. "But you begin to find the harmful effects when they're in their 50's and 60's.

Other members of the seven-person panel agreed that the recent studies, using more sophisticated techniques than previous research, showed that the effects of cannabis were much less harmful than had been thought a decade or two ago when marijuana was often referred to as the "killer drug" and was sometimes thought to lead to insanity.

Dr. Mai Fink of the Health Sciences Center, Department of Psychiatry at the State University of New York at Stony Brook and a co-chairman of the conference, related that when he started his research on cannabis in 1968 he was certain the drug had the same toxicity as opium or heroin.

"But I became convinced over the years that cannabis was very different from the opium-derived drugs," he said. "You look at the reports today which show no evidence of brain damage or cause for lack of motivation or lowering of testosterone levels and you realize that, so far, the findings on cannabis are trivial."

During yesterday morning's conference session, Dr. Glen D. Mellinger of the Institute for Research in Social Behavior, Berkeley, Calif., reported on a study of lack of motivation among college students who were chronic marijuana users.

The topic, known to psychologists as the amotivational syndrome, refers to general apathy, mental confusion and lack of goals among college students that often led to the student's dropping out. It had long been thought by some observers that marijuana was a major factor in many of these drop-outs.

But in a survey of 834 college students at the University of California at Berkeley who were examined and questioned in their freshman year and again two and a half years later, Dr. Mellinger found little significant difference in drop-out rates among chronic marijuana users and non-drug users.

Influences on Drop-Outs

He also found little disparity in clarity of occupational goals or grade point average in the two groups. But he found other factors that seemed to correlate more closely with the drop-out rate. These included individual personality differences, men with low academic motivation before they started to use marijuana, and other family history problems.

In another study comparing measurement of marijuana with alcohol involvement in criminal or assaultive behavior among young men, Dr. Tinklenberg took a survey of 248 inmates of a California prison facility. Approximately half of them had been heavy drinker before incarceration and the other half had been heavy marijuana users.

He found that alcohol-involved assaults or violence occurred approximately 15 times more frequently than cannabis-involved incidents. His studies also showed that, in comparison with alcohol, cannabis was far less frequently involved in fights, difficulties with the police, family or social trouble, and automobile accidents.

Other research findings presented at the conference included studies of Egyptian, Costa Rican, Greek, Jamaican, Mexican and United States marijuana users. Almost all the reports said there had been no demonstrated significant statistical evidence of impaired health, physical and mental function, and social and cultural activity.

One study, conducted by the Drug Abuse Council Inc., of Washington, the nation's largest private drug research organization, determined that when Oregon eased its marijuana laws to permit possession of one ounce or less of marijuana, the number of users did not increase significantly.

The conference, which concludes today, is being held under the sponsorship of the New York Academy of Sciences, the Department of Psychiatry of New York Medical College, the National Institute on Drug Abuse, and the Drug Abuse Council.

Studies See No Health Effect of Pot Smoking, Researchers Say

Marijuana Hazards Discounted

By Stuart Auerbach
Washington Post Staff Writer

NEW YORK, Jan. 27 — Federally funded studies of long-term users of high-potency marijuana in three foreign countries showed no difference between the health, ability to work, and brain function of users and nonusers, a number of researchers said here today.

"There are really no differences," asserted Dr. Rhea L. Dornbush of the department of psychiatry of New York Medical College, a co-chairman of a conference on long-term marijuana use sponsored by the medical school, the National Institute on Drug Abuse and the New York Academy of Science.

"As far as we can see," she continued in an interview, "with all the methods we used — with different populations, different investigators, different techniques — it's all coming out the same."

Another conference co-chairman, Dr. Max Fink of the department of psychiatry of the State University of New York at Stony Brook, called "evidence from the meeting fairly clear that chronic cannabis (marijuana) use is not accompanied by so many

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of the consequences which have been written in the literature in the 1930s and the 1940s."

The thrust of the 32 scientific studies being presented at the three-day meeting, which started here Monday, contradicts earlier findings of possible damage to the brain, to the body's immunological defense mechanism, to the ability to be motivated to work hard and of chromosome damage.

Fink and the third co-chairman, Dr. Alfred M. Freedman, insisted all the results clearly showed that there is no brain damage from long-term marijuana smoking. Freedman, head of the department of psychiatry at New York Medical College, is former president of the American Psychiatric Association.

Dr. Sidney Cohen of the University of California at Los Angeles, former head of drug research at the National Institute of Mental Health, added that studies of marijuana users at UCLA and the University of California at Berkeley disputed the notion that smoking pot killed a student's motivation to work.

Early studies had pointed to an "anti-motivational factor" that led to dropping out of college and work as a leading bad effect of marijuana smoking.

But Dr. Glen D. Mellinger, in his studies of Berkeley students, concluded that the dropouts were poorly motivated even before they began using marijuana — and the poor motivation may have led to drug use instead of the other way around.

The studies failed, however, to settle a recent controversy over whether marijuana smoking reduces the amount of the male sex hormone testosterone, as originally

reported by Dr. Robert C. Kolodny of the Reproductive Biology Research Foundation in St. Louis.

A comparison of 84 Costa Rican marijuana users with 156 nonusers by a team of doctors headed by W. J. Coggins of the University of Florida turned up no differences in testosterone levels. But Cohen's studies at UCLA backed Kolodny's findings.

Studies of long-term users concentrated on Costa Rica, Greece and Jamaica because there are no groups in the United States who have used marijuana — and no other drug — as consistently over long periods of time. Marijuana use in this country is widespread and growing; Dr. Thomas Bryant of the Drug Abuse Council estimated the number of users at 29 million, and 12 million smoke irregularly.

In many foreign countries — especially Jamaica — the marijuana used is as much as 10 times more powerful than that available here. Many of the foreign users smoke as many as 25 marijuana cigarettes a day — far more than regular users in America consume.

Nonetheless, studies showed little if any harm from the marijuana smoking. Fink called the poisonous effects of marijuana, as shown in the studies, "trivial at best."

The results of the conference studies were not universally accepted. Dr. Gabriel G. Nahas of Columbia University's College of Physicians and Surgeons, a strong opponent of marijuana use, challenged many of the findings as inconclusive.

In Costa Rica, the University of Florida team headed by Coggins concluded after complete physical examinations of 84 users and 156 nonusers that there was no

difference in the health of the two groups. Another team — Drs. Paul Satz and Jack M. Fletcher of the University of Florida and Louis W. Sutker of the University of Victoria — found after giving 17 psychological and brain function tests to 41 users that "chronic marijuana use is not associated with permanent or irreversible impairment in higher brain functions or intelligence."

Despite the extremely high potency of the marijuana and hashish, Dornbush found that Greek users suffered some impairment when asked to perform complex tasks while smoking. But they could do simple jobs without trouble.

A team of Greek doctors, giving physicals to 60 marijuana users compared with 64 nonusers, also found no difference in the health of the two groups.

In studying the health of American users, Cohen kept 28 men who used marijuana in the UCLA hospital and studied their reactions. He found the lowered testosterone levels and Dr. Donald P. Tashkin, an associate, reported "a mild but significant" narrowing of the passages to the lung probably due to irritation from smoking marijuana.

AMERICAN ACADEMY OF PEDIATRICS

Committee on Drugs

Effects of Marihuana on Man

The Committee on Drugs has reviewed the pharmacology of marihuana with special emphasis on effects in man because of the enormous impact of this drug on society. Much of modern day society's reaction to and attitudes about this psychoactive agent does not reflect its pharmacology, and it is only recently that pertinent biologic facts about marihuana have become known. The Committee reports these facts here, in part, to inform the Academy membership of these facts and, in part, to provide a perspective with which to consider the various societal controls (*i.e.*, laws) on the use of marihuana.

COMPOSITION

Marihuana is a mixture of leaves and flowering tops of the plant *Cannabis sativa L.* It contains approximately 1% Δ -9-tetrahydrocannabinol (THC), the principal psychoactive substance in marihuana. Street preparations tend to vary in Δ -9-THC content; the range is 0% to 5%. An average marihuana cigarette contains 500 mg of marihuana and, therefore, about 5 mg of Δ -9-THC. Hashish, usually used in Eastern (Asiatic) countries and in North Africa, is the resinous substance of the flowers and leaves of *Cannabis sativa L.* in which Δ -9-THC is found. Hashish contains 5% to 15% Δ -9-THC and is usually smoked as a mixture of the resin and tobacco. Generally, marihuana cigarettes do not contain tobacco, although some street preparations do.

USERS

In considering adverse effects of marihuana, it is important to appreciate some pertinent epidemiologic facts. It is estimated that 24,000,000 Americans have tried marihuana at least once

and that there are 8,300,000 current users in this country.¹ Approximately 70% of adults and youth (12 through 17 years) who were found by the National Commission on Marihuana and Drug Abuse¹ to use marihuana used it so infrequently as to be considered experimental users. Individuals in this category have used marihuana at least once (most of them) but no more than once a month. Almost 20% of adult and youthful users take marihuana more than once per month, but no more than ten times a month (intermittent users). About 7% of the adults and youths surveyed indicated that they use marihuana more than ten times per month but less often than once daily (moderate users). Finally, about 4% of adults and youths who ever used marihuana use it more than once per day and are considered heavy users. A small fraction of these are extremely heavy users, and are almost continually intoxicated from smoking marihuana with a relatively high Δ -9-THC content many times a day.

BASIC PHARMACOLOGICAL CONSIDERATIONS

The main psychoactive ingredient of marihuana is Δ -9-THC. The isolation and recognition of this substance, the ability to assay for it quantitatively in natural materials, and its synthesis have allowed more precise psychopharmacologic studies of marihuana. Delta-9-THC is rarely available for use outside of a research setting. Delta-8-THC is another psychoactive substance in cannabis but usually occurs in negligible concentrations. Other neutral and acidic cannabinoids are found in cannabis, but they probably exert little biologic effect. However, they may

modify the effects of Δ -9-THC and thus confound the comparison of the actions of purified preparations of this compound with those of cannabis.

Smoking marijuana is a most effective route of administration, although the amount of Δ -9-THC absorbed into the bloodstream from the lungs varies considerably among smokers. Psychoactive and physiologic effects appear in two to three minutes, sometimes less, after smoking. The peak effect occurs in 10 to 20 minutes, and the duration is about 90 to 120 minutes after smoking a single cigarette (approximately 5 mg of Δ -9-THC). The pharmacologic effects of Δ -9-THC are delayed when administration is oral. Onset is usually 30 to 60 minutes after ingestion; peak effects occur in two to three hours, and the effects last for three to five hours. It requires approximately three times more marijuana or Δ -9-THC when administration is oral to obtain effects equivalent to those from smoking.

Studies with Δ -9-THC tagged with carbon 14 have provided information on its pharmacokinetics and metabolism in man. For instance, it has been found that THC is almost completely metabolized²; less than 1% is recovered unchanged in urine or feces, regardless of the route of administration. Animal and *in vitro* studies indicate that nonspecific hepatic microsomal oxidases rapidly transform Δ -9-THC into 11-hydroxy-THC (11-OH-THC).³ This metabolite is psychoactive, being as potent as Δ -9-THC. 11-OH-THC is further rapidly metabolized to the inactive 8, 11-dihydroxy-THC. A good correlation exists between the time course of pharmacologic effects and plasma levels of Δ -9-THC and its immediate metabolites. Peak effects and blood levels were noted 10 to 30 minutes after smoking and about three hours after oral administration. It is not clear whether the parent compound or psychoactive metabolites were most psychoactively effective because the blood levels were determined by measuring radioactivity (reflecting unchanged Δ -9-THC and metabolites), administered initially as carbon 14 tagged Δ -9-THC.

Once Δ -9-THC is absorbed, there is an initial rapid decline of plasma Δ -9-THC concentration in about two hours.⁴ Δ -9-THC is transported in the lipoprotein fraction of plasma while the more polar 11-OH-THC is bound to albumin. After the initial two hours, Δ -9-THC disappears from the plasma at a slower rate for several days. The different rates of disappearance of Δ -9-THC from the plasma suggest rapid uptake and slow release by certain tissues. In the rat, Δ -9-THC is accumulated in fat much more than in any other tissue and persists for two weeks.

The initial distribution of Δ -9-THC is probably a function of vascularity and lipid content of the various organs. Thus, in rats, lung, salivary glands, jejunum, kidney, adrenals, muscle, liver, and testis (in decreasing order of concentrations of Δ -9-THC and metabolites) are the most prominent tissues for the early distribution.⁵ Brain levels of Δ -9-THC (and metabolites) persist for as long as seven days, and at that time concentrations are as high or higher than for other organs. Studies on the distribution in monkey brain indicate that there is an early concentration of radioactivity in gray matter, especially of the visual and frontal cortex.⁶ This radioactivity may reflect the more polar metabolites of THC. A later phase of organ distribution probably reflects excretion of the cannabinoids; some 60 minutes after administration of Δ -9-THC, relatively high concentrations (of radioactivity) are found in liver, bile, the gastrointestinal tract, kidneys, and bladder.³ Of interest is the fact that there is enterohepatic cycling of the metabolic products of Δ -9-THC. Δ -9-THC crosses the placental barrier in pregnant animals, and sizeable concentrations are found in the fetus.⁷ Effects on viability of the fetus are under investigation.

Δ -9-THC metabolites are principally excreted in the urine and feces. Radioactive metabolites persist in urine and feces for days after administration of a single large dose. The use of cannabis appears to be detectable for a longer period than that of alcohol.

The physiologic responses to the administration of Δ -9-THC or marijuana include a dose-dependent increase in heart rate.⁸ Pretreatment with propranolol (a β -adrenergic blocking agent) has been reported to inhibit the effect of Δ -9-THC on heart rate.⁹ Another response to Δ -9-THC is conjunctival reddening, irrespective of route of administration (smoking or ingestion). It has been noted that Δ -9-THC may effect a decrease in intraocular pressure. There are no evident changes in body temperature, respiratory rate, or deep tendon reflexes after administration of marijuana or Δ -9-THC. Pupillary size is affected almost imperceptibly; a decrease can be recorded by careful measurement.¹⁰ Δ -9-THC does not usually affect fasting blood sugar levels or plasma levels of free fatty acids.

Physiological and biochemical measurements are being used to document the neurologic effects of cannabis in man and animals. Electroencephalographic changes, detected by computer rather than visual analysis, have been reported in volunteers who smoked marijuana in high or low doses and placebo cigarettes. The principal

changes noted were an increase in the percent of alpha time with decreased theta and beta bands.¹¹ Young chronic users of marihuana, when acutely intoxicated, showed a decreased auditory-evoked EEG response.¹² Studies on biogenic amines and neurotransmitter substances in the brain of experimental animals administered Δ -9-THC seem most promising in understanding the mechanism of action of cannabis. Effects on serotonin and catecholamine concentration in localized brain areas are being studied. The technique of autoradiography has been used to detect accumulations of radioactive Δ -9-THC or metabolites in specific brain areas at the time of maximal behavioral activity in the monkey.⁶ The lateral geniculate nuclei, the amygdala, the hippocampus, and the inferior and superior colliculi accumulated the labeled compounds at the peak of behavioral activity. Relatively large concentrations were also found in the cerebellum.

PSYCHOLOGICAL EFFECTS

The subjective effects of marihuana have been reported by many sources. Common and characteristic subjective effects in nonlaboratory settings have repeatedly indicated that the perception of the external environment is changed in all sensory modalities. Visual imagery is more vivid than usual; the subject sees forms and meaningful patterns in ambiguous visual material. There is an awareness of subtle qualities of sound rhythms, purity, and distinctness. Touch, taste, and smell are subjectively enhanced. Time perception seems changed; subjects report slowing down or stopping of time. Marihuana seems to potentiate social interaction; however, high doses tend to remove the user from the group, perhaps because of the enhanced psychoactive effects. Other typical components of the marihuana high are a feeling of lightness of the limbs, uncontrollable laughter without provocation, and difficulties in remembering from moment to moment the thread of what is being said in a conversation.

Almost invariably users report a pleasant, positive, emotional state. The temporarily overwhelming negative emotional state, known as "freakout," occurs infrequently in about 20% of experienced marihuana users.¹³ Almost always this state can be handled by reassurance and support. "Freakouts" may occur more frequently in new users, especially with potent preparations.

The attitude and expectations of the subject determine the subjective response of using marihuana. Even with experienced users,¹⁴ a placebo effect is common, especially in double-blind studies. Apparently, this reflects a learned set of expectations in the user. The interpersonal situ-

ation also is a determinant of the subjective response to marihuana. There is a greater variety of subjective symptoms when marihuana is smoked in a group setting. Sedative effects seem to predominate when the same subject smokes alone.

Marihuana and Δ -9-THC affect motor and mental performance in a dose-dependent manner, especially when dosage is carefully controlled. Motor performance (on various standardized tests) deteriorates with the dose of marihuana administered by smoking. Testing of mental performance has shown dose-related impairment of verbal output, counting, and color discrimination.¹⁵ Short-term memory seems to be the mental faculty most significantly affected by marihuana. Moderate amounts of marihuana seem not to interfere with the information retrieval component of this mental faculty but more likely with initial learning, thus affecting the acquisition process involved in the storage of information.¹⁶

Comparative studies of the effects of marihuana, alcohol, and other drugs on mental and motor performance are especially interesting. Delta-9-THC in doses of 2.5 to 5 mg (the content of one half to one marihuana cigarette) provided the same performance decrements as three bottles of beer or 3 oz of 100-proof whiskey taken one half hour before testing (equivalent to a blood alcohol level of 0.05%). When alcohol (first) and marihuana (second) were consumed together, an additive decrement on mental and motor performance was noted.¹⁷

There is a significant effect of smoking experience on mental and motor test performance. In general, individuals with more experience seem to score better than those with little or no smoking experience after administration of standardized doses of marihuana.¹⁸

Of particular importance is the effect of marihuana on driver performance. A significant dose-related increase in brake time has been found after ingestion of marihuana.¹⁹ An increased amount of time is required for recovery from glare when driving at night.²⁰ This effect lasted for several hours after smoking marihuana. It was not related to pupillary size. Sedation and effects of marihuana which increase complex visual reaction time and variability in performance because of occasional lapses of attention would be expected to impair driving performance.

TOLERANCE

It is now generally agreed that physical dependence on cannabis comparable to that for the opiates, alcohol, and barbiturates does not exist (*i.e.*, withdrawal from the drug is not followed by

a characteristic abstinence syndrome). On the other hand, tolerance to cannabis has been conclusively demonstrated in several species of animals and probably develops in man with prolonged use of potent preparations. When increasing drug doses are required to obtain the same degree of effect in an individual, tolerance has developed. The concept of tolerance should be restricted to a specific action of a drug rather than to all the effects of the drug. Dispositional tolerance refers to changes in absorption, distribution, metabolism, and excretion which result in a decreased intensity and duration of contact between the drug and its target tissue. Any change in the target tissue which makes it less sensitive to the same dose of the drug results in functional tolerance.

Tolerance, probably dispositional tolerance, to various pharmacologic and behavioral actions of marihuana and Δ -9-THC occurs in a number of animal species (pigeons, rats, dogs, mice, monkeys, and chimpanzees).²¹ This tolerance develops rapidly and is long-lasting. Hundredfold increases over the initially effective dose produce little effect in tolerant animals of some species. Cross tolerance for various effects has been demonstrated between Δ -9-THC and Δ -8-THC, but not LSD, morphine, and mescaline. Tolerance to the behavioral actions of THC may result from the animal learning to adapt to effects of the drug (a type of functional tolerance). However, there is clear evidence for metabolic tolerance as shown by an increase in the lethal dose during the course of tolerance development. SKF-525-A, an inhibitor of hepatic microsomal enzymes which interferes with THC metabolism, has been shown to possess a blocking action on tolerance in laboratory animals.²¹ Animals develop tolerance to some effects of THC but not others. Thus, differential tolerance is an important consideration for interpreting the results of various studies dealing with the development of tolerance.

A number of reports from Asian and Middle Eastern populations describe the daily use of enormous amounts of cannabis by chronic users.²² That tolerance has developed for psychoactive effects is suggested by the fact that the quantities consumed produce dysphoria in less experienced users but do not interfere with the usual daily activities of some chronic, heavy users. Smokers in these Eastern groups have increased the initial daily consumption some five to six times over a 20- to 30-year period to achieve the same degree of psychological effect.

The development of tolerance has been studied and compared in long-term, intermittent, and

moderate marihuana users given free access to the drug over a 21-day period.²³ The investigators concluded that tolerance developed for the depressant and some physiological (pulse rate) and psychological effects (impaired recent memory, time estimation, and psychomotor coordination) of cannabis and that the duration of the desired high shortened with continuing exposure to the drug. Other more recent studies have tended to confirm one or more of these observations.

Of special interest have been reports suggesting "reverse tolerance" for marihuana. The basic observation has been that of a novice smoker requiring more marihuana initially to achieve psychological effects than after his first few trials with the drug. It is as if an individual has to acquire the ability to perceive the desired effects of the intoxicated state. Supporting this phenomenon are observations of experienced users becoming high after receiving the same amount of Δ -9-THC or marihuana which was psychologically ineffective for naive subjects. Behavioral factors seem to account for such increased sensitivity.

ADVERSE PHYSICAL EFFECTS

Interest in and debate over the adverse effects of marihuana have stemmed from legal prohibitions and have raised questions concerning the appropriate stance of society and, in turn, the law with regard to this drug. Any consideration of the pharmacology of cannabis should include information concerning acute and chronic physical toxicity and psychiatric illness. In general, manifestations of acute physical toxicity are minimal, even with administration of large doses. Death from overdose has rarely been reported, and critical analysis of reports of fatality make it possible to conclude that definite incrimination of marihuana is lacking in most instances. For instance, although a cannabis metabolite was found in the urine of one victim recently reported to have succumbed from an overdose of marihuana, no cannabis was found in body tissues.²⁴ Large amounts of cannabis were found in the room of the victim, and no other cause of death was apparent. Acute toxicity studies in animals and human case reports all indicate a high ratio of lethal to effective dose for marihuana; this ratio is more favorable than for alcohol and barbiturates.

Uneventful recovery from coma following overdose with hashish (nine to ten large pipefuls were smoked) has been reported.²⁵ The most commonly reported physical reactions to marihuana are nausea, vomiting, and dizziness. These manifestations tend to occur most often in inexperienced smokers or with oral administration.

The intravenous administration of street preparations of marihuana has resulted in severe toxicity.²⁶ Hypotension, chills, fever, leukocytosis, hepatosplenomegaly, and anuria have been reported following intravenous administration, which results in injection of insoluble particles and perhaps bacteria into the bloodstream.

Reports of chronic, physical effects of marihuana must be judged from the perspective of the population group under scrutiny. Heavy, long-term patterns of marihuana use in Eastern (Asiatic) populations have not yet been matched in Western groups where only small numbers of chronic users have been observed. Populations associated with heavy, chronic use of cannabis differ from Western groups in such important variables as nutritional status, patterns of disease, and perhaps in the potency of the cannabis preparation (*e.g.*, hashish in the East, marihuana in the West).

In view of the usual route of administration of cannabis preparations, it is not surprising to encounter a relatively large number of reports dealing with the respiratory tracts of chronic users. High frequencies of chronic bronchitis have been encountered in heavy, long-term users from Eastern populations.²⁷ Because mixtures of cannabis and tobacco are smoked in these populations, disentangling the respiratory effects of each of these agents poses a difficult problem. A group of 22 American soldiers in West Germany who smoked huge quantities of hashish (100 gm or more monthly) for 6 to 15 months exhibited a high frequency of upper and lower respiratory complaints: bronchitis, sinusitis, asthma, and nasopharyngitis. Twenty-one of the 22 soldiers also smoked tobacco.²⁸ Five of nine patients with bronchitis were studied for pulmonary function and showed mild obstructive changes which improved on diminished hashish exposure, irrespective of tobacco smoking. It is difficult to relate these findings to the usual chronic user of marihuana in the United States because enormous amounts of a preparation containing about five times as much THC as in marihuana were smoked by soldiers. The clinical observations seemed to implicate hashish; but, it is not clear what level, if any, of marihuana exposure can affect pulmonary physiology. An attempt to define a pathologic effect on the lungs of marihuana smokers was undertaken by Mann *et al.*²⁹ who studied structure and function of alveolar macrophages obtained by pulmonary lavage from heavy users (3 to 20 cigarettes per day for at least one year). These investigators demonstrated no differences in phagocytic capacity (for *Candida albi-*

cans) of macrophages from marihuana or tobacco smokers and nonsmokers. Twenty-five percent fewer macrophages were recovered from the lungs of marihuana smokers as compared to recovery from nonsmokers (other studies have shown recovery of increased numbers of pulmonary macrophages from tobacco smokers than from nonsmokers). The investigators concluded that macrophages, a primary pulmonary defense against inhaled organisms and particles, were apparently replaced by other cell types. Thus, this finding may be reflected in the clinical respiratory picture described here for chronic and heavy exposure to cannabis preparations. Although there is little information on the respiratory status of intermittent and moderate users, the respiratory tract may be a potential target for adverse effects of long-term cannabis use. The information on pulmonary effects must be weighed, and tar from marihuana cigarette smoke has a carcinogenic effect on mouse skin similar to cigarette tobacco tar.³⁰

A high frequency of obliterative arteritis involving the lower extremities has been reported for young Moroccan males who are heavy cannabis users. Unfortunately, this is a clinical report and there are no control data.³¹ There is no definite evidence that long-term use of cannabis causes liver dysfunction.

Of note is the claim by British physicians that regular use of cannabis produces cerebral atrophy in young adults.³² These physicians reported evidence of ventricular dilatation by air encephalography in ten young adult males who used marihuana consistently for 3 to 11 years; other drugs (amphetamines, LSD) were also used, but reportedly less frequently. Normal values for ventricular measurements were obtained from age-matched patients with normal air encephalographic examinations and follow-up confirmation of a neurologically normal state. There was no attempt to control for exposure to marihuana and other psychoactive agents. This clinical observation is not enough to prove that long-term use of marihuana predisposes to or results in cerebral atrophy. There are variables other than marihuana which also must be controlled (*e.g.*, the role of the other psychoactive drugs). The reliability of the histories of drug abuse given by the subjects of this study is questionable. Carefully controlled studies are needed to substantiate this clinical report.

The effects of long-term use have been studied in a small sample of cannabis users in Jamaica.³³ Thirty long-term smokers of ganja (3% THC, on average, usually smoked with tobacco) and 30

matched nonusers were selected for intensive hospital investigation. The ganja smokers in this study had used the drug for a mean duration of 17.5 years. No significant differences were found between users and controls for neurologic and EEG abnormalities, liver function tests, abnormal chest x-rays, and chromosomal aberrations. Ganja smokers, 90% of whom also smoked tobacco, showed significantly higher hemoglobin concentrations and hematocrits than did nonusers (19 of 30 nonusers smoked tobacco). These differences may reflect the effects of chronic ganja and/or tobacco smoking on the lungs of users; the hematological changes may be related to functional hypoxia. However, the results of pulmonary function tests did not differ between ganja smokers and nonusers.

New findings concerning the possible adverse effects of chronic intensive marihuana use (at least four days a week for a minimum of six months) on the endocrine system have recently been reported.³⁴ Plasma testosterone levels were found to be significantly depressed in 20 marihuana smokers. More significantly, a suggestion of a dose-related response was noted in that there was an inverse relationship between amount of marihuana used and plasma testosterone concentration. The depressed plasma hormone levels were raised to normal concentrations on cessation of marihuana smoking or by administration of human chorionic gonadotropin; these observations suggest central suppression of testicular secretion of androgen. Oligospermia was noted in approximately one third of the marihuana users. The authors concluded that their findings raise an area of serious concern, but still do not answer specifically the question of safety in the use of marihuana.

MUTAGENESIS AND TERATOGENESIS

Results of studies seeking evidence of chromosomal abnormalities in peripheral blood lymphocytes of marihuana smokers are inconclusive. Two studies have suggested that abnormalities do not occur, at least for "light" marihuana users (one to two cigarettes per month or less)³⁵ and a small group of smokers including both light and heavy users.³⁶ Neither study would detect a low frequency of chromosomal abnormalities in heavy marihuana users. A more recent study has shown increased chromosome breakage in marihuana users.³⁷

Another aspect of this recent study, dealing with the effect of chronic marihuana smoking on cell-mediated immunity, exemplifies the application of newer knowledge and techniques to

learning about the effects of this drug in man.³⁷ Mixed lymphocyte culture (MLC) and phytohemagglutinin (PHA) responsiveness of the lymphocytes of 51 individuals who smoked marihuana at least once a week for at least one year was investigated; no other drugs were used by these subjects. MLC and PHA responsiveness reflects the status of cell-mediated immunity in man. Eighty-one healthy volunteers were used as controls, and the results of these tests were also compared to data from groups of patients with impaired cellular immunity (e.g., patients with uremia or malignancy and those receiving immunosuppressive therapy). The results of this study indicated that the mean response of the lymphocytes of marihuana smokers to allogenic cells (MLC) or PHA was significantly less than that of the control group and about the same as for the patients exhibiting impaired cellular immunity.

The basis for the depressed MLC and PHA responses of the marihuana smokers' lymphocytes is unknown. The investigators suggest that DNA synthesis is impaired, but their own summarized evidence for this hypothesis—chromosome breaks, micronuclei, and a decreased number of cells synthesizing DNA in studies on four marihuana smokers—was not presented in a form permitting analysis. The data on chromosome breaks are controversial because, as indicated here, other groups have failed to find an increased frequency of chromosome damage among marihuana users. Unless this finding is consistent among different laboratories, extrapolation to mutagenesis and teratogenesis is extremely tenuous.

The design of this investigation suffers from flaws common to many other studies on adverse effects of marihuana. The assumption that marihuana is the only variable differentiating the control and study groups cannot be accepted. Variables correlated with marihuana smoking are unexamined in this (and other) studies, even though one or more of these may be depressing the MLC and PHA responses. Evidence of a "dose-response" relationship which demonstrates increasing frequency of chromosomal aberrations and increasing impaired MLC and PHA responses with increasing marihuana exposure should be sought. Although this type of evidence would not completely rule out the etiologic significance of other correlated variables, it would tend to suggest a causal role of marihuana.

The evidence is minimal for incriminating marihuana as a teratogen in man. The three clinical case reports of children born with birth defects to mothers who used marihuana³⁸⁻⁴⁰ can hardly be used as such evidence; multiple drugs

were used by the mothers and there is relatively high frequency of birth defects in the general population. If marihuana were a human teratogen, we might expect more than three clinical case reports of association because of the large number of users in this country. However, it is extremely difficult to demonstrate cause-and-effect relationships for mutagens and teratogens in man so animal studies can provide useful information. Indeed, reports of congenital malformations in offspring and decreased litter size in various experimental animals exposed to (usually extremely large doses of) cannabis, certainly indicate that avoidance of exposure to marihuana during pregnancy would be wise.

ADVERSE PSYCHOLOGICAL EFFECTS

Perhaps one of society's greatest concerns with marihuana has been its possible relationship to mental illness. Clinical observations provide most of the information on this relationship; unfortunately, critically devised and analytic epidemiologic studies utilizing control groups and well-founded frequency data are lacking. In addition to the pharmacologic properties and dose received of a psychoactive drug, the psychologic state of the individual and the setting in which the drug is taken are two important variables which determine effect. Adverse psychologic effects may be dependent on these two variables and make it difficult to isolate the role of the psychoactive agent. Much of the information on cannabis-related mental illness originates in developing nations where the relatively low standards of medical care have resulted in low priorities for dealing with mental illness, few well-trained psychiatrists, and poor facilities for dealing with psychiatric disorders. Careful diagnosis and evaluation of the mentally ill patient is probably lacking. Chronic illness in these countries, especially infectious diseases and malnutrition, may affect mental function. Data from these countries on the frequency of mental illness among users and nonusers of marihuana are unavailable. Thus, there are reasons for using caution in relating much of the seemingly relevant information to Western populations.

If lack of critical information hampers delineation of a cause-and-effect relationship between marihuana and mental illness, the nonspecificity of the adverse psychologic reaction(s) attributed to cannabis does not improve the chances for critical analysis. For instance, there are no specific manifestations which distinguish between cannabis psychosis, an acute toxic state which occurs after heavy use, and other types of toxic psy-

choses. There is an acute onset of confusion, visual and/or auditory hallucinations, paranoid ideas and excitation or aggressive behavior; this state is self-limited (days to a few weeks). The diagnosis has given important weighting to a history of heavy cannabis intake, a situation which could lead to a biased inflation of the frequency of cannabis-induced psychosis. The similarity among cases reported from Eastern populations as cannabis psychosis may suggest that this is a diagnostic entity; however, this says nothing about the role of the psychoactive agent.

Administration of relatively large doses of Δ -9-THC isolated from cannabis can produce acute toxic psychosis and hallucinations in a controlled setting.⁴¹ Thus, it is not surprising to find various reports of toxic psychologic reactions following use of marihuana in Western populations. Smith and Mehl of the Haight-Ashbury Clinic (San Francisco)⁴² believe that the ingestion of large amounts of drugs, inexperience of the user, and personality factors predispose to such reactions which are manifested by panic, fear, depersonalization, confusion, disorientation, depression, and paranoid ideas.⁴³ Among case reports associating panic reactions and psychotic states with use of marihuana, other factors (possibly) predisposing to the mental disturbance can often be found—a severe degree of stress, schizophrenia in the patient or his family, and preexisting psychopathology.⁴⁴ Again, the host and the setting in which cannabis is taken are significant in understanding the etiology of these adverse reactions. The use of marihuana, especially heavy use, apparently can precipitate adverse psychologic effects, from mild reactions to psychotic episodes. Host and situational factors appear to contribute to many of these adverse effects. Fortunately, the psychotic episodes tend to be self-limited and of short duration if marihuana use is terminated.

A consideration of the frequency of toxic psychologic reactions associated with marihuana use soon indicates the poor quality of the data on which such estimates are based, even in Western populations. The reports of widespread cannabis use in American soldiers in Viet Nam suggested that a useful source of data was available.⁴⁵ This source provided an estimate of five cases per 45,000 troops per month of (acute onset) psychosis associated with a history of marihuana use. (The authors reporting this estimate indicated the presence of predisposing personality factors.) Of course, such an estimate provides no indication of the risk to a marihuana user of developing a psychosis because the actual number of such users among American troops in Viet Nam was

not reported; the estimate was based on the total American military population. Other similar estimates, from the student health service at Yale (11 cases per 8,500 students for the 1968-1969 academic year)⁴³ and from Los Angeles County Hospital (nine admissions resulting from the use of marihuana out of 700,000 admissions during the period from 1961 to 1969—most of these patients were admitted after intravenous injection of marihuana),²⁷ are again uninformative.

The recurrence of psychoactive effects when not under the influence of marihuana has been described by the term "flashback."⁴⁶ Euphoria, anxiety, or hallucinations may be features of the flashback, often depending on the psychologic manifestations of previous (especially recent) intoxications. These recurrences are intermittent, usually occur within days to a few weeks after using marihuana, and tend to disappear with time. Although flashbacks have been reported in individuals who have used only marihuana, these phenomena seem to occur more frequently in individuals who have used hallucinogenic drugs previously. The repetition during marihuana intoxication of hallucinations previously experienced with our psychoactive drugs is another phenomenon, perhaps related psychopharmacologically to flashbacks, which has been reported. The basis for these types of recurrent phenomena are poorly understood.

The amotivational syndrome refers to the loss of conventional motivation and to preoccupation with drug-taking and its subculture. The regular long-term use of marihuana may produce this syndrome (the marihuana hypothesis).⁴⁷ Individuals who are constantly and chronically intoxicated cannot be expected to show conventional levels of motivation, although their desire to remain in the intoxicated state will motivate them to obtain sufficient amounts of the drug. Such individuals have been the subjects of reports from countries where the most potent preparations of cannabis are used. A less severe form of this syndrome may be manifest in this country in youths who are dropping out of school and refusing to prepare themselves for traditional adult roles and in young adults who, after a number of years of regular marihuana use, show subtle personality changes as indicated by diminished drive, lessened ambition, loss of effectiveness, apathy, and introversion.⁴⁸ An important issue appears to be the role of marihuana in the etiology of the amotivational syndrome.

There is no objective evidence for or against the hypothesis that the amotivational syndrome results from organic brain changes brought about

by chronic use of large amounts of cannabis. Pre-existing personality traits of heavy marihuana users which attract them to the drug must be considered in the etiology and pathogenesis of the behavior complex known as the amotivational syndrome. The emphasis in our present day society on reexamining traditional values and roles, which correlates with youthful rebellion and interest in "dropping-out," indicates that interaction of the drug and social variables must also be considered in any examination of the amotivational syndrome. In the absence of data which provide insight into this possible adverse effect, an hypothesis equally suitable to the marihuana hypothesis is that psychosocial variables bring individuals into the counterculture, one of whose characteristics is use of cannabis.

CONCLUSIONS

Various adverse effects have been attributed to marihuana and other cannabis preparations. Most of these claims cannot be well substantiated because they are based on uncontrolled observations, improperly controlled studies, studies with small sample sizes, and retrospective analyses. Comparative studies of users and nonusers purporting to demonstrate physiologic or psychological adverse reactions usually fail to differentiate between a marihuana effect and effects of other variables correlated with the use of this drug. Demonstration of a specific adverse effect of marihuana (by studying users before and after abstaining from the drug) and of a dose-response relationship may tend to overcome this flaw in comparative studies.

Repeated clinical observations, properly executed investigations, and controlled animal studies are now documenting certain adverse effects of marihuana. Present knowledge indicates that, except for the effects of long-term smoking of potent cannabis preparations on the upper and lower respiratory tract, acute and chronic physical toxicity is rather low in man. The clinical significance of altered MLC and PHA responses and depressed plasma testosterone levels of marihuana users remains to be demonstrated. Animal studies indicating a teratogenic potential for cannabis are sufficient to recommend avoidance of exposure to marihuana by women who are or may become pregnant.

Observations on psychologic and physiologic effects of marihuana indicated that, as with alcohol and other psychoactive drugs, individuals who are "high" should not drive. Use of marihuana, especially heavy use, can precipitate adverse psychologic reactions. Host and situational

factors appear to contribute to many of these adverse effects.

Tolerance to cannabis develops with prolonged use of potent preparations. A relationship between marihuana tolerance and adverse effects is not evident.

The biomedical aspects of the use of marihuana are being monitored, and we can expect more information on its adverse effects. As more information becomes available, the Committee on Drugs will bring it to the attention of the Academy membership.

The Committee on Drugs continues to adhere to its conclusion stated in 1971.⁴⁹ Namely, that there should be no criminal penalties for simple possession and use of marihuana. When adequate methods for detecting concentrations of cannabis in the body (blood, urine, etc.) become available, the Committee would favor appropriate legal penalties for driving while intoxicated by marihuana.

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MARIJUANA: THE HEALTH QUESTIONS

Is marijuana as damaging as recent reports make it appear?

By Edward M. Brecher and the Editors of Consumer Reports

Over the past year the news media have carried many stories warning that smoking marijuana produces severely damaging effects on the human body. CU has followed these news accounts with great interest. In our special publication, "Licit and Illicit Drugs," published in 1972, we presented an exhaustive study of the scientific, social, and legal evidence through the end of 1971. Based on the evidence then available, we recommended that marijuana should be regulated rather than prohibited, that all persons currently imprisoned for marijuana possession or for sharing marijuana with friends should be released, and that past offenses of these kinds should be erased from the legal records. The time has come to take a fresh look at the alleged dangers of marijuana.

THE SCIENTIFIC CASE AGAINST MARIJUANA

Many of the recent allegations concerning the effects of marijuana on health have appeared in reputable scientific journals. Here, in summary, is the case against marijuana recently presented to the public.

Edward M. Brecher, an award-winning science writer and investigative reporter, has been a frequent contributor to CONSUMER REPORTS since 1938. He was a principal collaborator on "The Consumers Union Report on Smoking and the Public Interest" (1963), which foreshadowed the U.S. Surgeon General's report of 1964; and he was the senior author of "Licit and Illicit Drugs," the CU report cited by the American Library Association as one of 43 books "of outstanding merit" in 1972.

1. Smoking marijuana damages the brain irreversibly and ages it prematurely.

In December 1971, the late Dr. A. M. G. Campbell and his associates reported in a leading British medical journal, *The Lancet*, on X-ray studies of the brains of 10 chronic marijuana smokers. Compared to a group of nonsmokers of the same age, the marijuana group reportedly showed "evidence of cerebral atrophy"—that is, a wasting away of brain tissue.

Such X-ray studies, called air encephalograms, can be painful and hazardous, and no other research group has yet ventured to repeat the Campbell study. Several studies involving other techniques, however, are often cited in support of Dr. Campbell's findings. At the Tulane University School of Medicine, for example, Dr. Robert G. Heath implanted electrodes deep in the brains of six rhesus monkeys and recorded the monkeys' brain waves before, during, and after heavy exposure to marijuana smoke. In monkeys, as in humans, temporary changes in brain-wave patterns are normal with almost any change in the body or its environment. But persistent changes are cause for concern. Dr. Heath reported that after his monkeys were subjected to marijuana smoke in large doses daily for months, the changes became persistent; they could be observed as long as five days after marijuana exposure was discontinued. Further, an autopsy report on two of Dr. Heath's monkeys indicated "structural alteration of cells in the septal region of the brain." The alterations

were said to be "minimal," visible only under a microscope. "Our previous experience with similar conditions," Dr. Heath stated, "would lead us to assume that this chronic smoking of marijuana has probably produced irreversible changes in brain function."

Dr. Campbell's 10 patients and Dr. Heath's two monkeys provide the only direct evidence of possible brain damage to date. Indirect evidence, however, comes from Drs. Harold Kolansky and William Moore, psychiatrists at the University of Pennsylvania School of Medicine and the Institute of the Philadelphia Association for Psychoanalysis. Drs. Kolansky and Moore are convinced, on the basis of their observations of marijuana-smoking patients, that chronic smoking produces "a specific and separate clinical syndrome," or pattern of behavior, which has been called "the amotivational syndrome." The hallmarks of this syndrome are said to be "disturbed awareness of the self, apathy, confusion, and poor reality testing." Other signs are sleep disturbances, memory defects, and impairment of the time sense.

"Many of those we examined," Dr. Kolansky said, "were physically thin and often appeared so tired that they simulated the weariness and resignation of some of the aged. All appeared older than their chronological age. . . ." These observations, the Philadelphia psychiatrists concluded, "seemed to imply some form of organic change" in the brains of chronic marijuana smokers.

2. Smoking marijuana lowers the body's resistance to infectious diseases and cancer.

The human body has several defenses against infectious diseases, foreign protein substances, and possibly even against some types of cancer. One of these immunological defenses is provided by the "T-lymphocytes"—certain white blood cells derived from the thymus gland. When viruses or some other foreign substances invade the body, the T-lymphocytes multiply very rapidly and attack the invaders. This is an important aspect of the "immune response."

Dr. Gabriel G. Nahas and his associates at Columbia University's College of Physicians and Surgeons reported in Science in February 1974 that the immune response of marijuana smokers is impaired. The Nahas group based its conclusion on a complex series of laboratory procedures. They removed some T-lymphocytes from the blood of 34 marijuana smokers, allowed the cells to multiply in laboratory cultures for 72 hours, and then exposed them to pooled donor lymphocytes or to a specific chemical—either of which normally evokes the immune response in those cells.

Under these circumstances, the T-lymphocytes of the marijuana smokers assimilated less thymidine (an important cell building block) from the culture solution than did those of the nonsmokers. This result suggested that the cells from the smokers were not multiplying normally.

Dr. Nahas interprets this finding to mean that the immune response of the T-lymphocytes of marijuana smokers is impaired. In this respect, he states, they resemble the T-lymphocytes of some patients with cancer or kidney disease. He concludes that marijuana smokers lack an essential means of defense against infectious diseases and cancer.

In October 1974, Dr. Sudhir Gupta and his associates at Roosevelt and St. Luke's Hospitals in New York City re-

ported related findings in The New England Journal of Medicine. Using a procedure that tests the response of T-lymphocytes to sheep red blood cells, they observed that the reaction of T-lymphocytes from marijuana smokers was weaker than the reaction of T-lymphocytes from nonsmokers. They concluded that marijuana might induce a reduction of T-lymphocyte function in man.

3. Smoking marijuana increases the likelihood of birth defects and of hereditary diseases.

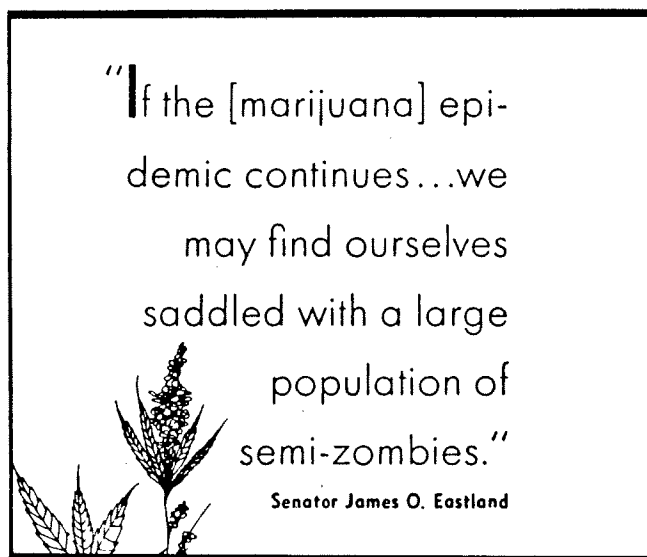
Most normal human cells have 46 chromosomes. Each chromosome carries numerous genes, or units of DNA (deoxyribonucleic acid), which govern the manufacture of proteins within the cell and regulate many of the cell's other functions. Sperm cells and ova each contain only 23 chromosomes; these are of particular importance, for they carry the DNA "genetic code" from parents to offspring.

Back in 1967, reports began to appear alleging that the drug LSD damages chromosomes. Subsequent careful studies failed to confirm this allegation, and the earlier reports are now generally discredited.

Among those who reported that LSD does not damage chromosomes was Dr. Morton Stenchever of the University of Utah College of Medicine. In January 1974, however, Dr. Stenchever and his associates reported in the American Journal of Obstetrics and Gynecology that they had found a somewhat elevated proportion of damaged chromosomes in the lymphocytes of 49 marijuana smokers, including some who smoked marijuana only twice a week or less.

Another chromosome study, not published at this writing, was described at hearings of the U.S. Senate Subcommittee on Internal Security last May. Dr. Akira Morishima, an associate of Dr. Nahas, told the subcommittee that he had compared 956 lymphocytes from marijuana smokers with 954 from nonsmokers. More than 30 per cent of the lymphocytes from smokers contained fewer than 31 chromosomes instead of the usual 46. Among lymphocytes from nonsmokers, only about 10 per cent contained so few chromosomes.

"Since lymphocytes constitute an essential component of



cellular immunity and chromosomes are basic units of inheritance at the cellular level," Dr. Morishima told the Senate subcommittee, "it seems logical to anticipate potential danger in [the] immune defense system, development of cancer . . . , genetic mutation and birth defects."

In the Nahas experiment, it will be recalled, T-lymphocytes failed to multiply rapidly when challenged with foreign substances. The *reason* they failed to multiply, Dr. Nahas declares, was that they could not manufacture enough DNA. Dr. Morishima similarly attributes his finding of too few chromosomes to a defect in DNA manufacture.

4. Smoking marijuana causes precancerous changes in the lung cells and other lung damage.

Damage to lung cells from marijuana smoke has been reported by Drs. Cecile and Rudolph Leuchtenberger of Switzerland and also by Dr. Forest S. Tennant, whose studies were performed while he was a medical officer stationed with the U.S. Armed Forces in Europe. In addition, some clinical studies suggest that those who smoke large amounts of marijuana for long periods may be more likely to develop chronic bronchitis or other conditions indicating lung-cell damage than those who do not.

Dr. Cecile Leuchtenberger's work, however, goes far beyond lung-cell damage. She grew lung cells of human origin in her laboratory and subjected them to repeated whiffs of marijuana smoke. Under these conditions, she found damage to chromosomes, changes in the number of chromosomes, and changes in DNA manufacture—which she interpreted as suggesting precancerous changes. She also reported abnormal sperm cells in mice exposed to marijuana. Thus, Dr. Leuchtenberger alleges five different kinds of marijuana damage—more than any other scientist to date.

5. Smoking marijuana may lead to sterility, impotence, or both, among men.

Testosterone is the most potent male sex hormone. The concentration of testosterone in the blood of a human male can be readily measured. In April 1974, Dr. Robert C. Kolodny and his associates at the Reproductive Biology Research Foundation in St. Louis (the Masters-Johnson sex research center) reported in *The New England Journal of Medicine* that they had studied testosterone blood levels of 20 frequent marijuana smokers and 20 nonsmokers. The levels in the marijuana smokers, though within normal limits, were lower than the levels in the nonsmokers. And the levels in subjects who smoked 10 or more marijuana cigarettes per week were lower than the levels of those who smoked only five to nine per week.

Six marijuana smokers had relatively low sperm counts and two complained of impotence; such effects might (or might not) be related to low testosterone levels. When one of the men who complained of impotence stopped smoking marijuana, he reported his potency had been restored.

SENATOR EASTLAND'S CONCLUSIONS

Many of the findings reviewed above were nationally publicized last spring at hearings of the Senate Internal Security Subcommittee, chaired by Senator James O. Eastland of Mississippi. Senator Eastland drew these personal conclusions from the testimony:

"(1) If the cannabis [marijuana] epidemic continues to spread . . . we may find ourselves saddled with a large population of semi-zombies—of young people acutely afflicted by the amotivational syndrome. . . .

"(2) We may also find ourselves saddled with a partial generation of young people—people in their teens and early twenties—suffering from irreversible brain damage. . . .

"(3) The millions of junior high school and grade school children who are today using marijuana may produce another partial generation of teen-agers who have never matured, either intellectually or physically, because of hormonal deficiency and a deficiency in cell-production during the critical period of puberty. . . . We may witness the phenomenon of a generation of young people who have begun to grow old before they have even matured.

"(4) . . . There is the possibility . . . that we may develop a large population of youthful respiratory cripples. And there is the possibility—which can only be confirmed by epidemiological studies—that marijuana smokers are producing far more than their quota of malformed and genetically damaged children. . . ."

If the scientific reports of adverse marijuana effects are well-founded, there can of course be no possible objection to their then being widely publicized through Congressional hearings, news accounts, or other means. The truth about marijuana should be known. But if the reports are poorly founded, that fact needs to be reported, too. For such misinformation serves only to frighten the public unnecessarily, especially the millions of marijuana smokers, former smokers, and their families—many of whom may now be waiting in dread for brain damage, cancer, and other predicted disasters to strike themselves or their loved ones. Accordingly, it may prove useful for CU to review recent medical evidence overlooked—or ignored—by the Eastland subcommittee and by the press that covered the hearings.

THE JAMAICA STUDY

Back in 1970, when CU's "Licit and Illicit Drugs" was still in the research stage, a different but almost equally horrifying collection of marijuana hazards was being publicized. Yet many marijuana smokers appeared to remain in good health and in good spirits, just as they do today. Perhaps, we reasoned, it is too early to gauge the true effects of marijuana smoking in the United States or Canada.

But what of other countries where marijuana has been a daily custom for generations? If dire adverse effects existed, they would surely be readily visible there, observable without air encephalograms, implanted electrodes, or other sophisticated laboratory procedures. Scientists dispatched to such countries would not have to *predict* the long-term consequences of marijuana use; they could readily see and measure those effects.

The same idea, of course, occurred to others, including administrators at the National Institute of Mental Health. They commissioned the Research Institute for the Study of Man to study marijuana effects on the island of Jamaica. For decades, Jamaicans have smoked marijuana much stronger than that smoked in the United States.

Although the Jamaica report was completed nearly three years ago, it has still not been published in the United

States. Indeed, CU was unable to obtain a copy from the Government agencies concerned. An edition in English was finally scheduled to be published last month (February) by Mouton, a Dutch firm in The Hague. The report, titled "Ganja in Jamaica," is by Drs. Vera Rubin and Lambros Comitas, director and associate director, respectively, of the Research Institute for the Study of Man.

In Jamaica, the report explains, marijuana is called "ganja" and is used in many ways. It is smoked, brewed as a tea, chewed, and used in cooking. In rural areas especially, it is an important element of folk medicine and superstition. "Children are introduced to ganja quite early," the Jamaica report notes, "first as a medicament in 'bush tea' or in a crude method of vaporizing, where adults blow smoke at an infant with respiratory congestion." Increasing doses of marijuana tea throughout infancy are recommended as a prophylaxis against disease. Schoolboys are urged to smoke marijuana to "help them study," to "improve memory," and to "help pass examinations." This widespread use of marijuana is found both among farmers and villagers and among residents of the slums of Kingston, Jamaica's capital.

The Jamaica study was launched in June 1970, when six anthropologists were sent into the field—five into rural districts and the sixth into an urban slum neighborhood. They found heavy ganja smoking common among the poor, despite severe legal penalties (not less than 18 months' imprisonment with hard labor for a first offense).

One of the anthropologists, Dr. Joseph H. Schaeffer, studied the effects of marijuana on ability and willingness to work. He recorded in detail how much work both smokers and nonsmokers did in a sample week and how much metabolic energy they expended while at work. In general, Dr. Schaeffer found that field laborers actually performed more motions and expended more energy after smoking marijuana than before. But they appeared to accomplish less when on marijuana—weeding a smaller patch of crops in an hour, for example. Dr. Schaeffer also reported, however, that marijuana use in group labor situations tended to increase the social cohesiveness of the workers. While it may have decreased overall efficiency, it appeared to make the prospect of long hours in the field more palatable and increase the laborers' willingness to work.

The Jamaica report calls this the "motivational syndrome"—as distinguished from the "amotivational syndrome" described by other psychiatrists.

Following this and other field studies, the Jamaica research team brought 30 male marijuana smokers and 30 nonsmokers to University Hospital at the University of the West Indies for six days of intensive medical examinations. The 60 subjects ranged in age from 23 to 53; the average age was 34. All but one of the marijuana smokers had first smoked before the age of 20; they had been smoking marijuana for 17.5 years, on the average (the range was from 7 to 37 years). They did not smoke marijuana while in the hospital.

But it was the frequency with which they smoked that will startle American readers. To qualify as a "heavy" smoker in the Jamaica study, one had to smoke at least eight "spliffs" (ganja cigarettes) a day. In the U.S., a

"heavy" smoker is often defined as one who smokes more than seven marijuana cigarettes a *week*. And the typical Jamaican spliff is more potent than the typical North American marijuana "joint." Thus, Jamaicans smoke considerably heavier doses than their American counterparts, even though the latter tend to inhale more deeply than Jamaicans.

The 30 control subjects were matched with the ganja smokers for age and socio-economic status. It was, however, impossible to enlist enough working class males in the right age bracket who had never once used marijuana. Accordingly, the control group was composed of 12 men who had never smoked ganja plus 18 confirmed nonsmokers who had smoked only occasionally in the past. All but three of the ganja smokers and all but 11 of the controls also smoked tobacco cigarettes. (Tobacco is also sometimes mixed with ganja in spliffs to make a "better smoke.")

Summarizing the examination findings, the Jamaica report notes "no significant physical abnormality" in any of the controls or in 28 of the 30 ganja smokers. One ganja smoker had a long history of asthma; another had a little-understood nervous condition known as "Jamaican neuropathy," suspected of being an atypical form of neurosyphilis. "There is nothing to suggest that these disabilities were in any way related to the use of cannabis," the report states.

The marijuana smokers and controls were well matched in height as well as age, but the smokers weighed seven pounds less on the average—a difference, the report noted, that "might indicate that the chronic use of cannabis causes some suppression of appetite."

X-rays of the lungs were normal in both groups except for some scarring of the lungs in one of the subjects who did *not* smoke marijuana. Since smoking tobacco cigarettes impairs lung function, it was also necessary to discount that effect when gauging the effects of marijuana. At worst, the Jamaica findings suggest, impaired lung function is produced by inhaling smoke, whether tobacco or marijuana.

Since the marijuana smokers in the Jamaica study were also in many cases the children and grandchildren of persons who smoked marijuana, and since many of them were probably exposed to marijuana before birth as well as during infancy, childhood, adolescence, and adult life, the study of their chromosomes by Dr. Marigold J. Thorburn of the University of the West Indies is of no small interest. Briefly, the chromosomes of the marijuana smokers were in good condition. In fact, they showed slightly fewer abnormalities than were found in the control group, though the difference was not statistically significant.

In addition to these and other studies of physical health, both ganja smokers and controls were given thorough psychiatric examinations by Drs. Michael H. Beaubrun and Frank Knight, both psychiatrists. Only one ganja smoker and one control reported a history of past mental illness. Four ganja smokers and three controls had had alcohol problems sufficiently acute to interfere with work or social functioning. Two ganja smokers, however, "reported that they had been able to reduce their alcohol intake, and seemed to relate this to ganja use."

On the Eysenck personality test, the "extroversion

scores" were identical for ganja smokers and controls. The only man suffering from depression, as gauged by the Hamilton Ratings Scale for Depression, was not a marijuana smoker. Not a single smoker or control appeared to be schizophrenic on either of two rating scales.

The brain-wave recordings of both ganja smokers and controls were also compared. Significant differences were not found.

A battery of 19 psychological tests, designed to compare ganja smokers and nonsmokers on 47 measures, including 11 measures of intelligence, was administered in the Jamaica study. Smokers had not smoked marijuana for two days before the tests and did not smoke on the test day. The marijuana smokers scored better on 29 of the 47 measures—a statistically insignificant finding.

Drs. Beaubrun and Knight summed up as follows: "The data clearly indicate that the long-term marijuana use by these men did not produce demonstrable intellectual or ability deficits when they were without the drug for three days. There is no evidence in the results to suggest brain damage."

The psychiatrists also asked about regularity and continuity of employment and frequency and nature of job changes. No significant differences were found between marijuana smokers and controls. Thus, careful psychiatric examination showed no evidence that these Jamaicans were "semi-zombies" after having smoked very large quantities of very strong marijuana for an average of 17.5 years.

CONFLICT OF EVIDENCE

By far the greatest conflict of evidence on marijuana exists between the Jamaica study and the studies cited earlier. But there are also notable conflicts among the latter studies themselves. Here are some examples.

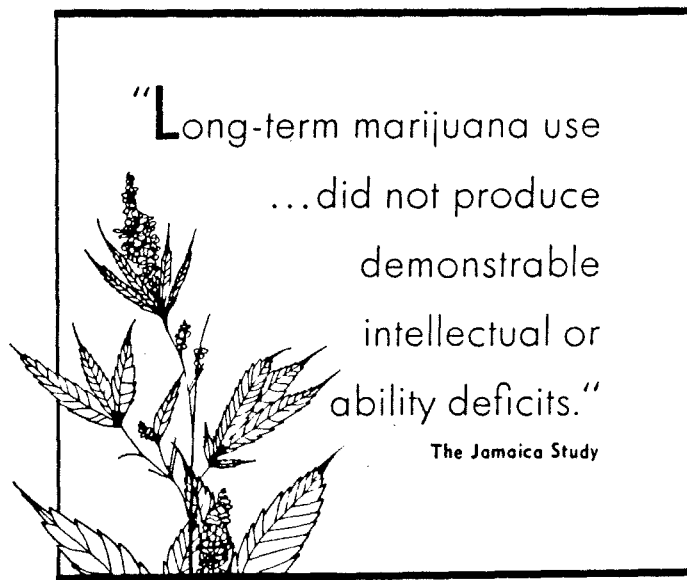
1. Brain damage. The Campbell report, it will be recalled, found evidence of brain damage in a group of marijuana smokers. But was the damage present before the patients started to smoke marijuana? If not, was it caused by marijuana, by some other drug, or by some nondrug factor, such as a blow on the head? Here is what Dr. Kolodny—the scientist who believes marijuana smoking lowers testosterone levels—has to say about the Campbell report:

Research in cannabis effects on humans has not always been performed or presented with objectivity. Many studies have been severely limited by indiscriminately including multiple drug users, thus frequently raising more questions than providing useful information. As an example of such research, I would like to comment briefly on the [Campbell] study entitled "Cerebral Atrophy in Young Cannabis Smokers. . . ." In the 10 cases reported, all 10 men had used LSD—many of them over 20 times—as well as cannabis, and 8 of the 10 had used amphetamines. One subject had a previous history of convulsions, four had significant head injuries, and a number had used sedatives, barbiturates, heroin, or morphine. On the basis of these facts, speculative connection between cannabis use and brain damage is highly suspect. Unfortunately, this type of report is typical of much of the research done in this field.

Next, consider this comment on the work of Dr. Heath, who reported brain-wave changes in rhesus monkeys exposed to marijuana smoke, by Dr. Julius Axelrod, who won a 1970 Nobel Prize for two studies, one of them concerned

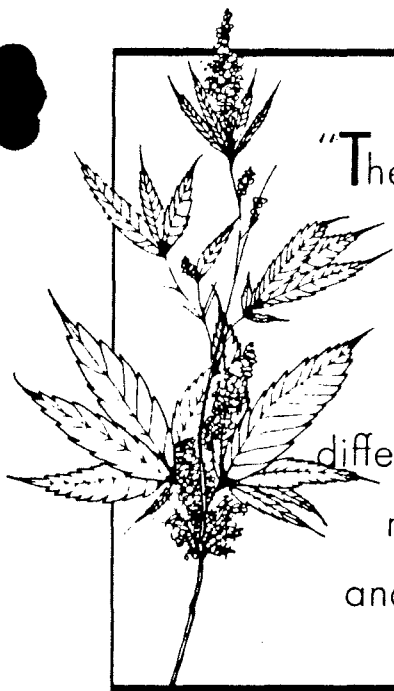
with the effects of drugs on the brain. Dr. Axelrod appeared as a witness before the Eastland subcommittee to warn against marijuana. Asked at the subcommittee hearings about Dr. Heath's experiments, Dr. Axelrod replied:

. . . One of the fundamental principles in pharmacology is the amount of a compound or drug that enters the body. You could take the most poisonous compound, and if you take too little, there is no effect. One may take a very supposedly safe compound, and if you give enough of it, it will cause toxic effects. This, I think, all pharmacologists recognize. I respect Dr. Heath; he is a fine neurologist; but the doses he has given for the acute effect, for example, would be equivalent to smoking 100 marijuana cigarettes, a very heavy dose of marijuana. And the amount he has given for the chronic effect represents smoking 30 marijuana cigarettes three times a day for a period of six months. [Even the heavy ganja smokers in the Jamaica study smoked only a fraction of this.] The results indicate that marijuana causes an irreversible damage to the brain. But the amounts used are so large that one wonders whether it's due to the large toxic amounts Dr. Heath has given. I think it would be a better experiment if he had done what is done in pharmacology, a dose-response [curve]: smaller amounts equivalent to that used by an occasional marijuana smoker and larger amounts used by a chronic smoker [would be given] to see what levels would produce these irreversible effects. I hope that this will be done.



Dr. Lester Grinspoon of the Harvard Medical School similarly points out that the monkeys in the Heath study did not smoke marijuana voluntarily but had the heavy doses forced into their lungs. Since the monkey lung is about 1/15th the size of a human lung, the concentration of marijuana in the monkey lung may have been 15 times as high as that of a comparable dose in the human lung. Allowing for this and other dosage disparities, Dr. Grinspoon notes, it is possible that Dr. Heath's monkeys were exposed to marijuana concentrations vastly greater than those experienced by the usual human smoker.

Nor have the brain-damage allegations of Drs. Kolansky and Moore gone unchallenged. At the University of Pennsylvania (with which Drs. Kolansky and Moore are associated), another team of researchers headed by Dr. Igor Grant



"The most sensitive
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Dr. Igor Grant

administered a neurological examination to 29 marijuana smokers and 29 nonsmoking controls, all of them medical students. In addition to the neurological functions usually tested, six measures specifically designed to reveal brain damage were used. The examiners did not know which examinees were marijuana smokers and which were nonsmokers. No difference was found between the two groups.

In addition, the Grant team administered a battery of neuropsychological tests designed to reveal brain damage. "We found no difference between marijuana smokers and nonsmokers on seven out of eight measures," Dr. Grant and his associates reported. "Marijuana smokers did not perform quite as well as nonsmokers . . . on one of the three subtests of the Tactual Performance Test." The team added, however, that "the absence of confirmatory findings in the other tests has led us to conclude that this one finding did not indicate a neuropsychological deficit among marijuana smokers." They summed up their findings in these terms:

A battery of the most sensitive neuropsychological tests now available could demonstrate essentially no difference between moderate users and nonusers of marijuana. These results agree with those of Mendelson and Meyer who employed similar tests with 10 casual and 10 heavy users.

Finally, the allegations of an "amotivational syndrome" and of brain damage are challenged by the findings of Dr. Norman Q. Brill and his associates at the University of California at Los Angeles School of Medicine. This group checked the college grades of 1380 UCLA undergraduates in 1970, then followed up on the same sample in 1971 (1133 students) and 1972 (901 students). Many of those who left college as well as those who stayed on were followed up.

Six groups of students could be discriminated during this study: those who had never smoked marijuana; those who began smoking during the study; those who increased use during the study; those whose usage remained stable throughout the study; those who decreased use; and those who quit marijuana altogether.

All six groups showed a steady improvement in college grades from year to year. The nonsmokers had the highest grades as freshmen but the lowest grades as seniors and graduate students; the differences were not statistically significant. Neither college grades nor other factors checked by the UCLA scientists supplied any evidence of brain damage or of an amotivational syndrome. "So far as we have been able to determine by this longitudinal study," the Brill group concluded, "the dire consequences that were predicted have not materialized."

2. Lowered resistance to disease. Dr. Nahas, it will be recalled, grew T-lymphocytes from marijuana smokers in laboratory cultures and then challenged them with foreign substances. He interpreted his results as indicating an impairment of the immune response among marijuana smokers—an impairment similar to that found in some cancer patients.

Among those alarmed by the Nahas findings were Dr. Melvin J. Silverstein and his associate, Ms. Phyllis J. Lessin, at the University of California at Los Angeles. Patients with this kind of defect in immunity, they noted in a recent issue of *Science*, "develop cancer at rates at least 80 times that of the general population." But was Dr. Nahas right in interpreting his results to mean a loss of immune response?

To check on the Nahas claim, Dr. Silverstein and Ms. Lessin took an approach that determines the immune response in the human body itself instead of in a test tube. They challenged chronic marijuana smokers with a foreign substance called DNCB (2,4-dinitrochlorobenzene). A small amount of DNCB was first rubbed on the skin to sensitize it; two weeks later, small doses of DNCB were injected into the skin. Under these circumstances, 96 per cent of all adults develop an immune reaction—a reddening of the skin around the test area and sometimes more severe skin changes. These changes can be graded from 1-plus (a minimum reaction) to 4-plus (a very severe reaction, including blistering).

When this test was run on 22 marijuana smokers, the results clearly indicated that their immune responses were intact and vigorous. All 22 showed a response to even a small (50-microgram) dose of DNCB, and in 21 of the 22 the response was severe (3-plus or 4-plus). Even with only a 25-microgram dose, 21 of the 22 showed an immune reaction, and 14 of the reactions were 3-plus or 4-plus. No resemblance was found to the immune reactions of a control group of cancer patients. Tests with other foreign substances confirmed this finding of a normal immune response in marijuana smokers.

"... There is no clinical or epidemiologic evidence to suggest that chronic marijuana users might be more prone to the development of neoplastic [cancerous] or infectious processes," Dr. Silverstein and Ms. Lessin noted. "Since responses were normal in the chronic marijuana users we tested, it would appear that chronic marijuana smoking does not produce a gross cellular immune defect that can be detected by skin testing."

3. Birth defects and hereditary disease. The Stenchever report that marijuana damages chromosomes, like earlier claims that LSD damages chromosomes, is being heavily challenged by contradictory evidence.

At the Institute for Medical Research in Camden, N.J.,

for example, Dr. Warren W. Nichols and his associates performed a well-controlled study of marijuana effects on chromosomes. They first checked the chromosomes of 24 occasional marijuana smokers and found them to be in good condition. They then gave their 24 subjects measured doses of marijuana daily for five or 12 days and checked their chromosomes again. No damage was detected.

Other investigators who have failed to find marijuana damage to chromosomes include Dr. Thorburn of the University of the West Indies (in the Jamaica study), Dr. Henry B. Pace and his associates at the University of Mississippi, and Dr. Richard L. Neu of the Upstate Medical Center, State University of New York. Animal studies have also failed to provide evidence of chromosome damage.

As for the Morishima report that the lymphocytes of marijuana smokers have fewer than the normal number of chromosomes, two difficulties should be noted.

First, all of the lymphocytes studied by Dr. Morishima and reported by him to the Eastland subcommittee came from just three marijuana smokers and three nonsmokers; this is an extremely modest base from which to anticipate, in Dr. Morishima's words, "potential danger in [the] immune defense system, development of cancer . . . genetic mutation and birth defects."

The second difficulty: if more than 30 per cent of the lymphocytes of chronic marijuana smokers contain fewer than 31 chromosomes instead of the normal 46, how could this gross lack of chromosomes have escaped the attention of Drs. Nichols, Stenchever, Thorburn, Pace, Neu, and others who have been intensively examining lymphocytes for chromosome breaks and other minor abnormalities?

4. Lung damage. Though the evidence to date is far from decisive, there is no reason to doubt that marijuana smoke, like tobacco smoke and other kinds of smoke, may damage human lung cells. *How much* damage remains an unanswered question. But the extent of damage is probably more closely related to the amount of smoke inhaled than to the type of smoke. Thus, it is hardly plausible at this stage of scientific knowledge to worry that someone who is smoking a pack of tobacco cigarettes a day—140 a week—may experience further lung damage by adding two or three marijuana cigarettes a week.

For very heavy users who smoke many marijuana cigarettes a week, of course, the risk of lung damage may be serious. Dr. David E. Smith of the University of California at San Francisco Medical School, who is also medical director of the Haight-Ashbury Free Clinic, has accordingly suggested that such users switch from marijuana smoking to other forms of marijuana consumption—such as drinking marijuana tea—to protect their lungs from smoke.

5. Sterility and impotence. Back in 1971, Dr. Kolodny and his associates at the Masters-Johnson sex research center in St. Louis reported that male homosexuals have lower testosterone levels than male heterosexuals. That report, like the Kolodny report on low testosterone levels in marijuana smokers, was widely circulated by the mass media. Within two or three years, however, three efforts to replicate the Kolodny finding failed, and it is now generally agreed that no significant difference exists between homosexual and

heterosexual testosterone levels. The Kolodny report on testosterone levels and marijuana is now experiencing a similar challenge.

In November 1974, Dr. Jack H. Mendelson and his associates at the Alcohol and Drug Abuse Research Center, Harvard Medical School-McLean Hospital, reported a carefully controlled study of marijuana effects on testosterone. Like the Kolodny study, the Mendelson study was published in *The New England Journal of Medicine*.

The Mendelson group selected for its study 27 young male marijuana smokers, some of them casual smokers and others heavy smokers who had consumed more than one marijuana cigarette a day for the past year and who had been smoking marijuana for an average of 5.6 years (range, three to nine years). All subjects were requested to refrain from marijuana smoking for two weeks and were then admitted for a 31-day stay in a locked hospital ward, where access to marijuana and other drugs was rigorously controlled.

During the first six days of the experiment, no marijuana was permitted. Testosterone levels were measured each morning. The average levels were in "the upper range of normal adult male levels." The heavy smokers had somewhat higher levels than the casual smokers, but the difference was not statistically significant.

During the next 21 days, the subjects were allowed to "earn" marijuana by performing a simple manual task. They were required to smoke this marijuana under observation to make sure it was really consumed. As the days rolled by, both the casual and the heavy marijuana smokers gradually increased their consumption, some of them to very high levels. Their testosterone levels did not fall. Under these carefully controlled conditions, the Mendelson group concluded, "high-dosage marijuana intake was not associated with suppression of testosterone levels. . . ."

THE PATTERN OF EVIDENCE

Out of all of these many studies (and others not reviewed here), a general pattern is beginning to emerge. When a research finding can be readily checked—either by repeating the experiment or by devising a better one—an allegation of adverse marijuana effects is relatively short-lived. No damage is found—and after a time the allegation is dropped (often to be replaced by allegations of some other kind of damage due to marijuana).

If the test procedure is difficult—like the air encephalograms that Dr. Campbell employed, or like Dr. Heath's work with electrodes implanted deep in the brain—independent repeat studies are not run in other laboratories. So these allegations of damage continue to be cited in the scientific literature and in the lay press. Then they, too, are eventually replaced by fresh allegations of marijuana damage.

After reviewing the voluminous evidence available up to January 1972, CU did not conclude in "Licit and Illicit Drugs" that marijuana was "harmless." On the contrary, we then pointed out, "no drug is safe or harmless to all people at all dosage levels or under all conditions of use." We see no need to withdraw or modify that conclusion.

We do, however, see a need to comment on the adverse legal and social consequences of misinformation about the health effects of marijuana. We shall do so next month.

MARIJUANA PENALTY REDUCTION

1. Except as authorized by law, every person who possesses not more than two avoirdupois ounces of cannabis shall be punished by imprisonment in the county jail for a period of not more than one year or by a fine of not more than five hundred (\$500.00) dollars, or by both such fine and imprisonment. Any person so convicted shall be imprisoned for no less than 30 days in the county jail and no judge or justice of the peace may suspend, or defer or set aside, the imposition of such sentence.

EXHIBIT J

The proceeding graph reflects only possession of marijuana cases for calendar year 1976.

Total number of cases: 151

Breakdown:

Prison sentenced:	9 or 6.7%
Probation sentenced:	142 or 93.3%
Quantity 1 ounce or less:	99 or 69%
Quantity Greater than 1 ounce:	43 or 31%

Disposition Profile by County

CLARK: 45 cases total -- 44 cases received probations
** 1 case received 1 day probation
1 case fined only

WASHOE: 61 cases total -- 58 cases received probation

All other Counties:

Prison:	5 cases
Probation:	40 cases

Revocation Information

(1) Revocation of probation occurred statewide in 1976, with reason being "new narcotic change" (approximately one (1) ounce of marijuana); this was Washoe County case.

A. A. Campos

R. A. CAMPOS

DETAILS OF PRISON COMMITMENTS

(WHERE OTHER COUNTS OR CHARGES WERE DISMISSED)

"0" Clark County

3 or approximately 33% Washoe County

Details of these three (3) cases:

1. One (1) Count: Sale of Narcotic and two (2) Counts Possession Dismissed
2. One (1) Count: Sale of Narcotic Dismissed
3. One (1) Count: Possession of Heroin, One (1) Count Possession of Methadone and One (1) Count Possession of Hashish Dismissed due to Plea Bargaining

3 or approximately 33% Nye County

Details of the three (3) cases:

1. One (1) Count: Assault with Deadly Weapon Dismissed
2. One (1) Count: Attempt to Sell Marijuana to a Person under age of 21 Dismissed
3. A large quantity of Narcotic was involved in the third (3rd) case.

2 or approximately 22% Esmeralda County

Details of these two (2) cases:

1. One (1) Count: Interstate Transportation and
One (1) Count: Contributing to the Delinquency of a Minor Dismissed
2. A large of quantity of narcotics (300 pounds) was involved in the second (2nd) case.

1 or approximately 11% Elko County

EXHIBIT K

Official Name	Slang Name(s)	Usual single adult dose	Duration of Action (hours)	Method of Taking	Legitimate medical uses (present and projected)	POTENTIAL FOR				Reasons drug is sought (drug effects and social factors)	Short-term effects (psychological, pharmacological, social) (3)	Long-term effects (psychological, pharmacological, social)	Form of legal regulation and control (4)
						Psychological Dependence	Tolerance (leading to increased dosage)	Physical Dependence	Overall Abuse and Toxicity (2)				
ALCOHOL Whisky, gin, beer, wine	Booze Hooch Suds	1/2 oz. gin or whisky, 12 oz. beer	2-4	Swallowing Liquid	Rare. Sometimes used as a sedative (for tension).	High	Yes	Yes	High	To relax. To escape from tensions, problems and inhibitions. To get "high" (euphoria). Seeking manhood or rebelling (particularly those under 21). Social custom and conformity. Massive advertising and promotion. Ready availability.	CNS (6) depressant. Relaxation (sedation). Euphoria. Drowsiness. Impaired judgment, reaction time, coordination and emotional control. Frequent aggressive behavior and driving accidents.	Diversion of energy and money from more creative and productive pursuits. Habituation. Possible obesity with chronic excessive use. Irreversible damage to brain and liver, addiction with severe withdrawal illness. (D.T.S.) with heavy use. Many deaths.	Available and advertised without limit in many forms with only minimal regulation by age (21, or 18), hours of sale, location, taxation, ban on bootlegging and driving laws. Some "black market" for those under age and those evading taxes. Minimal penalties.
CAFFEINE Coffee, tea, Coca-Cola No-Doz, Afc	Java	1-2 cups 1 bottle	2-4	Swallowing Liquid	Mild stimulant. Treatment of some forms of coma.	Moderate	Yes	No	Very Minimal	For a "pick-up" or stimulation. "Taking a Break". Social custom and low cost. Advertising. Ready availability.	CNS (6) stimulant. Increased alertness. Reduction of fatigue.	Sometimes insomnia, restlessness, or gastric irritation. Habituation.	Available and advertised without limit with no regulation for children or adults.
NICOTINE (and coal tar) Cigarettes, cigars	Fags, Nails	1-2 cigarettes	1-2	Smoking (inhalation)	None used as an insecticide.	High	Yes	No	High	"Taking a Break". Social custom. Advertising. Ready availability.	CNS stimulant. Relaxation (or distraction) from the process of smoking.	Lung (and other) cancer, heart and blood vessel disease, cough, etc. Higher infant mortality. Many deaths. Habituation. Diversion of energy and money. Air pollution. Fags.	Available and advertised without limit with only minimal regulation by age, taxation, and labeling of packages.
SEDATIVES Alcohol—see above Barbiturates Amytal Nembutal Seconal Phenobarbital Doriden (Glutealimide) Chloral hydrate Miltown, Equanil (Meprobramate)	Downers Barbs Blue Devils Yellow jackets, Dolls Red devils Phennies Goolers	50-100 mg. 500 mg. 500 mg. 400 mg.	4	Swallowing pills or capsules	Treatment of insomnia and tension. Induction of anesthesia.	High	Yes	Yes	High	To relax or sleep. To get "high" (euphoria). Widely prescribed by physicians, both for specific and nonspecific complaints. General climate encouraging taking pills for everything.	CNS depressants. Sleep induction. Relaxation (sedation). Sometimes euphoria. Drowsiness. Impaired judgment, reaction time, coordination and emotional control. Relief of anxiety-tension. Muscle relaxation.	Irritability, weight loss, addiction with severe withdrawal illness (like D.T.S.). Diversion of energy and money. Habituation, addiction.	Available in large amounts by ordinary medical prescription which can be repeatedly refilled or can be obtained from more than one physician. Widely advertised & "delisted" to M.D.s & pharmacists. Other manufacturing, sale or possession prohibited under federal drug abuse & similar state (pan-gersus) drug laws. Moderate penalties. Widespread illicit traffic.
STIMULANTS Caffeine—see above Nicotine—see above Amphetamines Benzdrine Methedrine Dexedrine Preludin Cocaine	Uppers Pop Pills, Wake-ups Bennies, cartwheels Crystal, speed, Meth Oxies or Xmas trees (spansules)	2.5-5.0 mg. Variable	4	Swallowing pills, capsules or injecting in vein, sniffing or injecting.	Treatment of anxiety, depression, fatigue, narcosis, alcoholism, neurosis, psychosomatic disorders and vomiting. Anesthesia of the eye and throat.	High	Yes	No	High	For stimulation and relief of fatigue. To get "high" (euphoria). General climate encouraging taking pills for everything.	CNS stimulants. Increased alertness, reduction of fatigue, loss of appetite, insomnia, often euphoria.	Restlessness, irritability, weight loss, toxic psychosis (mainly paranoid). Diversion of energy and money. Habituation. Extreme irritability, toxic psychosis.	Amphetamines, same as Sedatives above. Cocaine, same as Narcotics below.
TRANQUILIZERS Librium (Chlordiazepoxide) Phenothiazines Thorazine Compazine Stelazine Reserpine (Rauwolfia)		5-10 mg. 10-25 mg. 10 mg. 2 mg. 1 mg.	4-6	Swallowing pills or capsules	Treatment of anxiety, tension, alcoholism, neurosis, psychosomatic disorders and vomiting.	Minimal	No	No	Minimal	Medical (including psychiatric) treatment of anxiety or tension states, alcoholism, psychoses, and other disorders.	Selective CNS depressants. Relaxation, relief of anxiety-tension. Suppression of hallucinations or delusions, improved functioning.	Sometime drowsiness, dryness of mouth, blurring of vision, skin rash, tremor. Occasionally jaundice, agranulocytosis, or death.	Same as Sedatives above, except not usually included under the special federal or state drug laws. Negligible illicit traffic.
MARIJUANA Cannabis Sativa (S)	Pot, grass, tea, weed, stuff, hash, joint, reefers	Variable—1 cigarette or pipe, or 1 drink or cake (India)	4	Smoking (inhalation) Swallowing	Treatment of depression, tension, loss of appetite, and high blood pressure.	Moderate	No	No	Minimal to Moderate	To get "high" (euphoria). As an escape. To relax. To socialize. To conform to various sub-cultures which sanction its use. For rebellion. Attraction of behavior labeled as deviant. Availability.	Relaxation, euphoria, increased appetite, some alteration of time perception, possible impairment of judgment and coordination. Mixed CNS depressant-stimulant.	Usually none. Possible diversion of energy and money. Habituation. Occasional acute panic reactions.	Unavailable (although permissible for ordinary medical prescription. Possession, sale, and cultivation prohibited by state and federal narcotic or marijuana laws. Severe penalties. Widespread illicit traffic.
NARCOTICS (Opiates, analgesics) Opium Heroin Morphine Codeine Parcodan Demerol Methadone Cough syrups (Cheracol, Nycondan, Romilar, etc.)	Op Horse, H, Smack, Shit, Junk Dolly	10-12 "pipes" (Asia) Variable—bag or paper w. 5-10% heroin 15 mg. 30 mg. 1 tablet 50-100 mg. 2-4 oz. (for euphoria)	4	Smoking (inhalation) Injecting in muscle or vein, Swallowing	Treatment of severe pain, diarrhea, and cough.	High	Yes	Yes	High	To get "high" (euphoria). As an escape. To avoid withdrawal symptoms. As a substitute for aggressive and sexual drives which cause anxiety. To conform to various sub-cultures which sanction use. For rebellion.	CNS depressants. Sedation, euphoria, relief of pain, impaired intellectual functioning and coordination.	Constipation, loss of appetite and weight, temporary impotency or sterility. Habituation, addiction with unpleasant and painful withdrawal illness.	Available (except heroin) by special (narcotics) medical prescriptions. Some available by ordinary prescription or over-the-counter. Other manufacturing, sale, or possession prohibited under state and federal narcotic laws. Severe penalties. Extensive illicit traffic.
HALLUCINOGENS LSD Psilocybin S.T.P. D.M.T. Mescaline (Peyote)	Acid, sugar cubes, trip Mushrooms Cactus	150 micrograms 25 mg. 5 mg. 350 mg.	10-12 6-8 12-14	Swallowing liquid, capsule, pill (or sugar cube) Smoking Chewing plant	Experimental study of mind and brain function. Enhancement of creativity and problem solving. Treatment of alcoholism, mental illness, and the dying person. (Chemical warfare)	Minimal	Yes (rare)	No	Moderate	Curiosity created by recent widespread publicity. Seeking for meaning and consciousness—expansion. Rebellion. Attraction of behavior recently labeled as deviant. Availability.	Production of visual imagery, increased sensory awareness, anxiety, nausea, impaired coordination; sometimes consciousness-expansion.	Usually none. Sometimes precipitates or intensifies an already existing psychosis; more commonly can produce a panic reaction.	Available only to a few medical researchers (or to members of the Native American Church). Other manufacturing, sale, or possession prohibited by state dangerous drug or federal drug abuse laws. Moderate penalties. Extensive illicit traffic.
ANTIDEPRESSANTS Ritalin Dibenzapines Tofranil, Elavil MAO inhibitors (Nardil, Parnate)		10 mg. 25 mg., 10 mg. 15 mg., 10 mg.	4-6	Swallowing pills or capsules	Treatment of moderate to severe depression.	Minimal	No	No	Minimal	Medical (including psychiatric) treatment of depression.	Relief of depression (elevation of mood), stimulation.	Basically the same as Tranquilizers above.	Same as Tranquilizers above.
MISCELLANEOUS Glue, gasoline & solvents Amyl nitrite Antihistamines Nutmeg Nonprescription "sedatives" (Compoz) Catnip Nitrous Oxide		Variable 1-2 ampules 25-50 mg. Variable	2	Inhalation Swallowing	None except for antihistamines used for allergy and amyl nitrite for fainting.	Minimal to Moderate	Not known	No	Moderate to High	Curiosity. To get "high" (euphoria) without seeking. Ready availability.	When used for mind-alteration generally produces a "high" (euphoria) with impaired coordination and judgment.	Variable—some of the substances are seriously damage the liver or kidney and some produce hallucinations.	Generally easily available. Some require prescriptions. In several states glue banned for those under 21.

(SEE BACK FOR FOOTNOTES)