

Cannabis and Medical Practice—1970

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In the time of the Chinese emperor, Shen Nung, about 2700 B.C., Cannabis was mentioned as a subject of controversy; this state of affairs has continued ever since (Grinspoon, 1969). It will be remembered that with alcohol, another controversial self-administered substance known to have toxic effects, the imposition of a large tax on gin in the 18th century (a social measure, not a medical one) is said to have greatly reduced the social problem of drunkenness; while the imposition of a recent more drastic social measure, American Prohibition, not only failed to reduce the problem of alcohol, but led to new and unforeseen social complications including general disrespect for law and the growth of a large and powerful criminal underworld.

These experiences are relevant to the present subject. The great increase in the use of Cannabis in recent years must be due to social forces rather than biological ones, but the experience with alcohol suggests that control is not a simple matter of passing a law, even a socially sophisticated one. And while a solution is being sought we doctors, even though our training is largely in biology, must still give some sort of answer to our patients, and to our patients' parents. At the same time biologically based science, pharmacology in the broadest sense, must prepare the way for social policy.

Some Definitions

Cannabis sativa (Indian Hemp) is the plant. Marihuana ("grass", "pot", etc) is a shredded mixture of the leaves and upper stem; it is usually rather weak and loses potency with storage. Hashish ("hash") is the resin prepared from the flowering tops of specially cultivated female plants, and is much more powerful. Tetrahydrocannabinols (THC) are a family of substances found in extracts of the resin, one or more of which are effective in producing the Cannabis effect.

Physical dependence, the occurrence of physical symptoms upon withdrawal, has not been shown with Cannabis, but psychological dependence, a strong desire to continue use, has. Tolerance probably does not occur.

Some Fears

This agent, new to our society, is spreading into the developed North and West of the world from the undeveloped South and East. It is naturally feared and resented, and for many reasons. As a new and additionally unwelcome interference with man's supposedly highest possession, his rational powers—and we have enough challenge to our (could it cause?) reason already. It is feared because it accompanies a marked change in the manners and behaviour, especially the sexual behaviour, of the young. Perhaps it is feared because it is unconsciously identified with the blackness, the coloured races as an agent of their influence. Or because it produces the introspection and dreamy inactivity of the East as opposed to the extroverted facilitation of the wheels of commerce produced by Western man's favourite drug – alcohol. And then there are Marco Polo's wild stories of the Assassins, or the U.S. Bureau of

Narcotics equally wild stories of murders, rapes and violence while under its influence. And it is feared because it has been said to be the first step on the slippery slope to heroin.

The Experience

What do we really know about it? First of all is it real? Does it have any pharmacological effect at all? These must seem like very naive questions; but why in the laboratory does the novice smoker often experience nothing at all, or certainly nothing that he expected, while the experienced smoker of identical cigarettes in the same study claims to be “high”? Weil et al (1968) and Myers and Caldwell (1969) both remarked on this. Does this lack of effect occur because the eager novice burns his leaf or resin too fast, or because he does not inhale deeply enough? Is it because he is so apprehensive about the effects of this much publicised substance that he can feel nothing but anxiety? **Or** is it because the Cannabis available to experimenters is very weak having lost activity in storage. Probably poor material and poor technique both contribute.

What does the experienced user in fact feel? Baudelaire is often quoted in this regard. He wrote in 1858 in ‘the Poem of Hashish’; *‘The first of . . . (the effects of the drug) is a sort of irrelevant and irresistible hilarity. Attacks of causeless mirth, of which you are almost ashamed, repeat themselves at frequent intervals, carrying across periods of stupor during which you try in vain to pull yourself together. The simplest words, the most trivial ideas, assume a new and strange guise; you are actually astonished at having hitherto found them so simple. Incongruous and unforeseeable resemblances and comparisons, interminable hours of punning on words, rough sketches for farces, continually spout from your brain. The daemon has you enthralled . . . (But) . . . Soon the coherence of your ideas become so vague, the conducting filaments between your fancies become so thin, that only your accomplices can understand you’.*

This kind of description is pretty exciting to young people. Baudelaire must surely have been experimenting something real. Can we, a hundred years later, say anything more precise about what it was?

Attempts at Measuring Activity

The active ingredients of Cannabis resin are probably the Tetrahydrocannabinols – THC for short. Unfortunately the resin contains a whole family of these substances, about eighty have been described, and it is not clear which of them are active. A particular member of the family, Δ^9 THC, has been suggested to be the substance causing the mental effect but it is not clear whether it is the only active agent. Δ^1 THC has also been proposed, as has Δ^6 THC. The chemical assay of these THC derivatives is complex and their stability is in doubt. And it is not clear whether they are more effective when smoked or eaten.

How can one define ‘activity’. THC is active in doing what? In producing the sensations of Baudelaire? Pleasurable perhaps but extremely subjective and next to impossible to measure. More scientifically perhaps one could measure the smallest amount of the active ingredient which makes an individual feel he is ‘high’ or ‘stoned’ (the subjective experience of users). This may perhaps be slightly less crude but is almost equally difficult to define. Alternatively one could be very conservative and measure merely the effect of THC on heart rate (it increases it). But then can one have any confidence that the increase in heart rate has any relationships to subjective sensations.

Some other problems; should the subject be tested in a clean, white, aseptic laboratory with everyone in white coats; or in a groovy smoky ‘pad’ with vivid posters, dim lights and sitar music so loud it comes up through the floor? (Technically, how should one control ‘psychological set’?) Or in some in-between place? Should the subject be told what he is smoking or should one attempt double-blind technique? Finally should the activity be tested

on a novice, even one trained to fully inhale tobacco, or on an enthusiast who from his past experience knows what to expect?

Thus the experimental study of Cannabis is full of pitfalls. It is not known precisely what substances are being studied nor is there a good end point to allow accurate assay of the strength of any preparation pure or crude; and little is known of technical matters like dose-responsive curves, absorption fate in the body and so on. Much animal work is needed.

Short Term Effects

Nevertheless Cannabis is here; we doctors cannot ignore it especially since some of us have found that our young patients often display more knowledge of the subject than we do, an alarming and unsatisfactory state of affairs.

From the evidence so far one must conclude that ordinary doses in the laboratory (a social 'high') do not lead either to short-term improvement or short-term interference with a number of complex functions of skill and dexterity. Specifically not interfered with are tests of vigilance (the Continuous Performance Test) or concentration (the Digit Symbol Substitution Test) used by Weil et al (1968); tests of visual and auditory acuity used by Caldwell et al (1969); or tests of driving skill used by Crancer et al (1969). Ordinary social doses in fact seem to do little that is dramatic but a night's heavy smoking might well do more, for instance with driving. Possibly these negative results were because weak preparations were being tested.

Long Term Effects

There are no experimental studies of longer term usage of Cannabis where subjects were compared in detail to controls. The clinical or anecdotal studies that have been done such as that of the Indian Hemp Commission in the 1890's (Wooton Report, 1968) or the report of the expert committee of the Mayor of New York in the 1930's where large numbers of users were examined, these studies found no significant or major physical or psychological effects. But again there has been no modern studies of this nature using modern techniques; and after all it took several hundred years for the relationship between tobacco and cancer of the lung to become apparent. Conjunctivitis occurs even when preparations are eaten, and bronchitis may be produced (Anon, 1920). One must conclude that Cannabis has neither been cleared of producing physical and psychological damage, nor indicted as doing these.

Long Term Behavioural Changes

The laboratory and the white coat are not the only scientific ways to approach the problem. Cannabis has been known for four thousand years. Surely this vast experience has produced some consistent and useful knowledge of long term use? A number of investigators, particularly Egyptian and Moroccan, have reported a 'Cannabis psychosis' and also social decay and loss of ambition in habitual users. In the United States the police have tended to see Cannabis as having a close connection with crime, particularly crimes of violence.

The Cannabis psychosis reports do not stand close scrutiny. This agent does not seem to produce a major mental illness although individuals with a pre-existing illness may well smoke it. The cause and effect relationship of drug and psychosis is much easier to demonstrate with alcohol than with Cannabis – as the users constantly point out. Similarly the relationship between Cannabis and crimes of violence seems quite indirect. In the United States the drug has for many years been used by minority groups who also have high crime rates; but this association does not prove cause and effect. Rather both behaviours, crime and Cannabis smoking, are likely to stem from a common cause – poverty, social deprivation, alienation, etc. (Grinspoon, 1969). A study of crime and Cannabis use in Nigeria by Asuni came to this conclusion also (Asuni, 1964).

The association between Cannabis smoking and loss of ambition, slothfulness and apathy seems to have more substance. This has been noted in North Africa, Egypt, Persia and in the United States. Here the problem is, which is the cart and which is the horse; which came first, slothfulness and apathy, or Cannabis smoking. Robins and Murphy (1969) of St. Louis in the United States attempted a long term study of this. They examined a large group of male Negro slum dwellers in their 30's many of whom had used Cannabis during adolescence. Those who had used Cannabis in adolescence were compared to controls from the same environment who had not. It was found that compared to the controls those who had used Cannabis in adolescence were less likely to have graduated from school, more likely to be unemployed, more likely to be problem drinkers (slothfulness and apathy), and more likely to have been arrested for burglary or other crime against property (presumably a common way of life for the unemployed drinking slum dweller). But as the authors admit they cannot prove that Cannabis *caused* these effects since it is certainly possible that they occurred because the individuals who chose to smoke Cannabis were more dependent and less able to cope with life to begin with. The other side of the coin is that this study produced no evidence that Cannabis is harmless and certainly none that it improves functioning. No one has ever demonstrated this in any study.

Cannabis and Heroin

Finally there is the question of the slippery slope to heroin. Many heroin and cocaine users in the U.S. started on Cannabis, and when it did not give them much, progressed to harder and stronger drugs. In practice in the U.S.A. one sees many such individuals, often adolescents of the middle class, taking cocaine, mescaline and heroin. But as with Cannabis and crime, an association does not prove cause and effect. The heroin users also tried alcohol, tobacco and coca-cola before progressing; yet these are not blamed as causative. So the descent from Cannabis to heroin, while possible, has not been proved.

It is more likely as Seevers (1968) suggests that a certain percentage of the population, perhaps five per cent, are susceptible to psychoactive agents and once exposed drug-taking comes to dominate their lives. If they meet an unscrupulous 'pusher' who is marketing both heroin and Cannabis then progression from one to the other is likely. From this point of view Cannabis is one more hazard in the path of young people as they grow from childhood dependence on someone or something, to adult independence and self sufficiency. Most will overcome this hazard, just as most will overcome the even more common hazard of alcohol. A few will almost certainly fail to overcome it. But if Cannabis leads to evil 'friendships' that encourage trying heroin the tragic grip of physical dependence will prove too strong for most young people. One reflects that a modern Fagin would probably use heroin to bind Oliver Twist to him for ever and might well begin the process with Cannabis as bait.

The Doctor's Role

The acute reaction to Cannabis usually requires little treatment and passes off in a few hours; anxiety may be seen but the episode often ends with sleep. A severe psychosis with anxiety suggests use of more powerful drugs such as LSD; a psychosis lasting more than 24 hours also suggests a pre-existing mental illness. Chlorpromazine is appropriate for either state.

Episodes of recurrent anxiety even when not taking the drug ('flash-backs') are certainly seen with LSD and may occur with Cannabis.

Patients and their parents should be told the truth about the long-term; that Cannabis is *not* the same as other drugs, being weaker than LSD and without the physically addicting properties of opiate or alcohol; that little is known about its long term effects, but that world-wide experience suggests apathy and disinterest as a common consequence; that Cannabis available illegally is often adulterated with everything from meadow grass to mescaline; and that if the apathy and the psychological dependence are interfering with ordinary functioning (such as school), they should probably be treated like alcohol dependence—initial in-patient group therapy, lectures under psychiatric direction, with later outpatient follow-up. Note that

if the doctor is to be looked on as an authority on the subject what he says must be believable to the patient; scare tactics do the opposite.

The Future

What should be done? Neither easy extreme is sensible. Society cannot be totally permissive and make drugs like Cannabis, about which we know so little and which are an additional hazard to maturity, cheap and easily available. Serious problems would certainly result, particularly from experiments of juveniles and the influx of a large mob of international enthusiasts. Nor can society be totally rigid and impose major penalties for Cannabis use when it permits the use of alcohol, a drug of proven danger. The side-effects of such a ban, including especially a worsening in the respect with which adolescents hold authority, already occurring all over the world, would raise more problems than the drugs.

In the case of Cannabis social policy must for the moment steer a middle course. This will only be temporary until the results of further research are known. The general outlines of such a policy might be:—

- (1) Clear distinction in law between Cannabis and all other drugs.
- (2) Encouragement of research into all aspects of the problem.
- (3) No punitive measure for possession of small amounts of Cannabis since present evidence cannot demonstrate these are harmful.
- (4) Differential treatment of pushers as opposed to users particularly those pushing Cannabis to soften up their clients for future exploitation with hard drugs.
- (5) Medical (psychiatric) treatment for children, that is individuals younger than 15 or 16, who become involved; and consideration of treatment for those older individuals who are 'drop-outs' and devoting most of their failing energies to the pursuit of this and other drugs.
- (6) No final irrevocable legal decisions now. Rather wait a few years and see what problems, if any, are turned up in any part of the world by future experience and future research.

References

1. Anon: Marihuana, *Med. Lett. Drug. Ther.* 12: 33-35, 1970.
2. Asuni T. Socio-Psychiatric Problems of Cannabis in Nigeria. *Bull. Narcot.* 16: 17-28, 1964.
3. Baudelaire C. An Excerpt from the Seraphic Theatre. Republished in *The Marihuana Papers*. Ed. Solomon D. New York, 1966.
4. Caldwell D. F., Myers S.A., Domino E.F., and Merriam T. E. Auditory and Visual Threshold Effects of Marihuana in Man. *Percept. Motor Skills* 29, 755-759, 1969.
5. Cannabis: *Report of the Advisory Committee on Drug Dependence* (Wooton Report) London H.M.S.O. 1968.
6. Crancer A., Dille J. M., Delay J. C., Wallace J. E., and Haykin M.D. *Science*, 164: 851-54, 1969.
7. Grinspoon L. Marihuana. *Scientific American*, 221: 17-25, 1969.
8. The Marihuana Problem in the City of New York (the La Guardia Report) reprinted in *The Marihuana Papers*, *ibid.*
9. Robins L. N., and Murphy G. E., Long Term Complications of Adolescent Drug Use; A follow-up of Negro Men who began Drug Use Before Age 20. Paper presented at the 59th Annual Meeting of the American Psychopathological Association, New York, 1969.
10. Seevers, M. H., *J. Amer. Med. Ass.* 206: 1263-66, 1968.

11. Weil, T. T., Zinberg, N. E. and Nelsen, J. M. *Science*. 162: 1234-1242, 1968.