

# Debating the Question of Medical Marijuana

**Charles F. Levinthal**  
Professor  
Department of Psychology

One of the most intensely debated drug policy issues in recent years has concerned the question of medical marijuana (the legalized availability of marijuana when limited to the treatment of specific medical conditions). As a psychologist whose interests lie in the study of drug abuse and drug policy, I am frequently asked to voice my opinion. Unfortunately, answers to the question of medical marijuana do not come easily. The principal reason is that it is an issue that must be debated on more than simply a medical level. There are also significant economic, social and political considerations.

First of all, the question of medical marijuana must be examined in terms of the complex picture of present-day drug use and abuse in the United States. It is widely acknowledged that drug-related problems in our society arise from an enormous range of psychoactive substances, with vastly different biological, psychological, sociopolitical and historical profiles. Psychoactive effects can be obtained from legally available sources such as alcohol and tobacco, as well as

illicit sources such as heroin, cocaine, amphetamines and marijuana. Some abusable psychoactive drugs, such as lighter fluid or cleaning solvents, are readily accessible to the general public in the form of common household products. Drug problems can also arise from the misuse of FDA-approved medications (Oxycontin® and Ritalin® are examples) that have been developed to treat legitimate physical disorders. While there are advocates of drug legalization as a whole, the immense diversity in the character of drug use in our society makes their argument a very hard sell. Even when debates on drug policy concentrate on one particular drug and a specific circumstance of legality (such as with the medicalization of marijuana), considerations need to be made in the context of the larger picture of drug use in the United States.

We also need to recognize that, even if it is desirable to make a change in drug policy or one aspect of it, the change itself will be successful only if it is feasible to implement it. Indeed, it can be argued that a particular drug policy should be based as much upon its practicality as its desirability. Would it be feasible, for example, to provide medical marijuana to patients at an affordable price without changing the presently illegal status of marijuana itself? How would commercial sources of medical marijuana be differentiated from sources presently existing for illicit marijuana? What would be the economic impact on the pharmaceutical industry?

Ultimately, we cannot ignore the symbolic implications of any change in national drug policy, including the medicalization of marijuana. The kind of drug policy we have in America, in the eyes of many people, is a political statement of what kind of country we wish to live in. The sociopolitical implications cannot be ignored. As sociologist Erich Goode has expressed in his book *Between Politics and Reason: The Drug Legalization Debate* (1997),

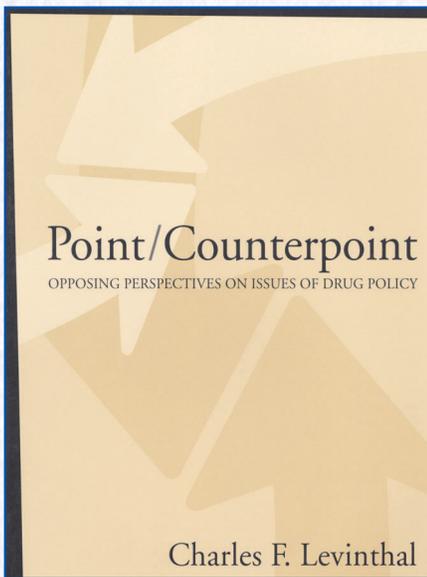
“Regardless of whether it reduces crime or not, does endorsing methadone maintenance clinics for all addicts who wish to enroll tell you the society is too “soft” on drugs? . . . Does the term “legalization” sound like an endorsement of drug use to

you? The balancing act between ideology and fact will continue to dog us throughout any exploration of the issue of drug policy.”

## A brief history of medical marijuana

As with many psychoactive substances, the medicinal benefits of marijuana have been noted for thousands of years. The first direct reference to cannabis (the name for the hemp plant, the leaves of which constitute marijuana) dates back to 2737 B.C.E. in the writings of the mythical Chinese emperor Shen Nung, which focused upon its powers as a medication for rheumatism, gout, malaria, and strangely enough, absent-mindedness. Mention was made of its intoxicating properties, but the medicinal possibilities were evidently considered more important. In 1964, a major step toward understanding the effects on the brain of marijuana and other cannabis products on the brain was the isolation and identification of THC (delta-9-tetrahydrocannabinol) as the chief active ingredient that produces cannabis-induced psychoactive effects.

Not surprisingly, the psychoactive potencies of various forms of cannabis are directly tied to THC concentration, from marijuana (usually the crushed leaves and stems of the cannabis plant) having a THC concentration of one to seven percent to hashish (the sticky resin of the cannabis plant) having a THC concentration of eight to 14 percent. However, THC is only one of more than 80 separate chemical compounds (called cannabinoids) in the cannabis plant. Therefore, an important question is whether medical benefits are gained from ingesting THC or other cannabinoid alone without smoking marijuana itself or whether we require the smoking of marijuana in its natural state, thus ingesting not only THC but all the other cannabinoids as well. Since 1985, two FDA-approved prescription drugs containing THC alone or a variation of it have been available in capsule form. Dronabinol (brand name: Marinol®) is essentially THC in a sesame oil suspension; nabilone (brand name: Cesamet®) is



Charles F. Levinthal's *Point/Counterpoint* published in by Allyn & Bacon.

a synthetic variation of THC. Government officials will argue that the availability of these medications meets their obligation on the question of medical marijuana. Others argue that THC alone is not as effective from a medicinal point of view than whole marijuana, and somehow the naturally-occurring combination of cannabinoids in the cannabis plant represent the essential therapeutic agent for medicinal purposes.

In the United States, anti-marijuana sentiment since the early 1930s, exemplified by the present-day cult classic film *Reefer Madness* (1936), has made it difficult to conduct objective appraisals of the clinical applications of THC ingestion or marijuana smoking. In the last 20 years or so, however, this stance has softened, allowing for some medical research. During this period of time, there were three clinical areas seen as worth exploring: the treatment of glaucoma, the treatment of asthma, and the treatment of debilitating nausea. It is now apparent that marijuana does not hold a significant advantage over available FDA-approved medications for glaucoma or asthma, but the area of nausea treatment is a different matter, and it is this specific medical application that presently is the focus of efforts to medicalize marijuana use.

Chemotherapy in the course of cancer treatment frequently produces an extreme and debilitating nausea (emesis), lack of appetite and loss of body weight; symptoms that are clearly counterproductive in helping the individual contend with an ongoing fight against cancer. AIDS patients suffer from similar symptoms, as are those patients diagnosed with the gastrointestinal condition called Crohn's disease. In these circumstances, standard antiemetic (antivomiting) medications are often ineffective. Therefore, the possible benefits of smoking marijuana and consuming it in its entirety over taking THC as a pill for antiemetic purposes need to be considered.

Despite the fact that Marinol® and Cesamet® are presently in use, U.S. federal authorities have refused to reclassify marijuana itself or any other cannabis product from a Schedule I category to a less restrictive Schedule II category. To put this in perspective, the Comprehensive Drug Abuse Prevention and Control Act of 1970 established five "schedules" of

controlled substances, defining the governmental judgment on the character of various drugs and restrictions to their availability. Schedule I drugs are defined as having the highest potential for abuse and no accepted medical use (examples include heroin and its analogues, LSD, mescaline, as well as marijuana and other cannabis products). Schedule II controlled substances (examples are morphine, cocaine, codeine, and amphetamines) are defined as having high potential for abuse and some accepted medical use, though use may lead to severe physical or psychological dependence. At the other end of the spectrum are the least restricted Schedule V drugs (examples include prescription cough medicines not containing codeine and laxatives). In the late 1980s, fewer than a dozen medical patients were approved to receive marijuana for symptomatic relief, despite its Schedule I status, as part of a "compassionate-use" federal program. The entire procedure for reviewing new applications to this program was canceled in 1992.

### Recent developments on medical marijuana

Despite official opposition from federal authorities, advocacy for medical marijuana has grown considerably in the last few years. In 1999, the Institute of Medicine (IOM), a branch of the National Academy of Sciences, conducted a study requested by the White House Office of National Drug Control Policy (ONDCP). Its report concluded that, while not recommending marijuana for long-term use, short-term use appeared to be suitable for treating certain physical conditions, particularly "debilitating symptoms," when patients failed to respond well to traditional medications. By 2000, nine U.S. states (Alaska, Arizona, California, Colorado, Hawaii, Maine, Nevada, Oregon and Washington) had voted by public referenda to allow marijuana smoking for the relief of pain and discomfort, when prescribed by a physician. In 2001, Canada officially approved the medicinal use of marijuana. It is now legal for Canadian patients to grow and smoke marijuana if their symptoms have been certified by a physician as warranting this treatment. It is also permitted, under these circumstances, to request marijuana

na, free of charge, from government-operated cannabis farms in Manitoba. At the same time, the U.S. government has recently (and somewhat quietly) eased restrictions on the availability of high-grade marijuana for research studies on its effectiveness as a medical treatment. In the past, only low-grade marijuana had been available, a level of cannabis quality that has carried the derogatory designation "ditch weed."

In November 2002, voters in Nevada will consider a referendum eliminating penalties for possessing up to three ounces of marijuana for any reason and directing the state legislature to treat marijuana much like tobacco products and alcohol, through a regulatory system that would oversee how marijuana is grown, distributed and sold, with tax revenue generated in the process. It should be noted that the Nevada initiative (to be effective no earlier than 2004, following another state vote) goes beyond the medical marijuana issue, arguing for a regulated form of marijuana legalization. The proposal includes prohibitions against advertising of any kind, selling marijuana to anyone under 21, or selling it in any public place such as schools or parks. Major newspapers in the state have endorsed the referendum, with one prominent editorial in July 2002 calling it "a promising first step" toward ending "the needless harassment of individuals who peacefully and privately use marijuana." Most state officials, however, have opposed it or remain neutral. In a poll conducted this July, 44 percent of Nevadan voters favored the initiative, 46 percent were opposed and 10 percent were undecided, with a margin of error of four percentage points.

### The federal response to medical marijuana advocacy

The official stance of the U.S. federal government is that marijuana is justifiably a Schedule I controlled substance and established federal penalties for its sale and possession for whatever purpose must stand. In 2000, the U.S. Supreme Court in *United States v. Oakland Cannabis Buyers' Cooperative*, invoked legal precedent with respect to jurisdiction over commerce and ruled against the legitimacy of marijuana "buyers clubs" in

California, organizations that had been operating following the passing of its 1996 referendum on medical marijuana. The Supreme Court had previously issued decisions establishing that intrastate commerce could be exempt from the federal interference unless that activity substantially affected interstate commerce. In this case, the court based their decision, in part, on the judgment that a restriction of medical marijuana to intrastate commerce could not be guaranteed. Some legal scholars have since argued that the court should reconsider its judgment on this point, but whether it will do so remains uncertain.

Drug abuse professionals in the federal government have long viewed the acceptance of medical marijuana as a "Trojan horse" for marijuana legalization, pointing out that marijuana legalization could cascade to drug legalization in general. It can only be speculated that the 2002 Nevada referendum has done little to reduce their fears in this regard. On a congressional level, 36 members of the House of Representatives introduced in August 2002 a bipartisan bill to allow any state to permit marijuana use for medical purposes if they choose to do so, thus eliminating any conflict with federal opposition on this issue (though its illegal status for non-medical purposes would remain). It is not likely that any further action on this bill will begin until after the

November 2002 elections. Considering the ramifications of this change in drug policy, the political situation with respect to medical marijuana will remain in flux for some time.

### Medical and health concerns on medical marijuana

When pressed about the question of medical marijuana on strictly medical grounds, the ONDCP defers to sections of the 1999 Institute of Medicine report, extracting statements that support their position and ignoring others that do not. A central issue raised in the report is the fact that marijuana is smoked and consequently inhaled into the lungs. One problem is that the customary delivery system for marijuana cannot be dissociated from health problems associated with smoking. The second problem is that no presently approved medication has ever been administered in this way. Not surprisingly, the government has placed great emphasis on the potential health risks of marijuana smoking.

In general, there are ample opportunities for a selective reading of the conclusions of the IOM, because the report itself is quite complex and fails to make more than a grudgingly positive stand on the medical marijuana issue. No cost-benefit analyses are made or even entertained, despite the acknowledgment of the cir-

cumstances of patients who might be prime candidates for marijuana treatment.

Lester Grinspoon, author of *Marihuana Reconsidered* (1971) and an expanded edition of *Marihuana: The Forbidden Medicine* (1997), has noted that recommendations for medical marijuana were made only with severe limitations:

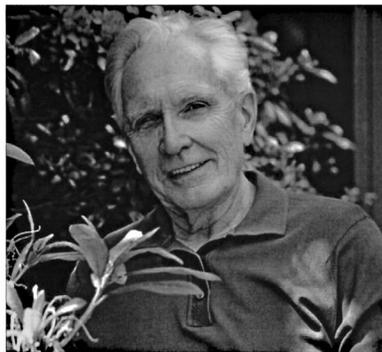
"The report's Recommendation Six would allow patients with what it calls "debilitating symptoms (such as intractable pain or vomiting)" to use smoked marijuana for only six months, and then only after all other approved medicines have failed. The treatment would have to be monitored with "an oversight strategy comparable to an institutional review board process" . . . The Institute of Medicine would have patients who find cannabis helpful when taken by inhalation wait for years until a means of delivering smoke-free cannabinoids is developed . . . [They] discuss marijuana as if it were a drug like thalidomide, with well-established serious toxicity (phocomelia) and limited clinical usefulness (leprosy). This is inappropriate for a drug with a long history, limited toxicity, unusual versatility, and easy availability."

### Economic concerns in medical marijuana

It should be noted that reclassification of marijuana to a Schedule II controlled substance, in and of itself, would be insufficient to allow its immediate availability as a prescription drug. By congressional mandate, all new Schedule II drugs must be first approved by the FDA in clinical trials, showing its safety and effectiveness for the purposes in which it would be prescribed. (It has been said that aspirin would have had difficulty passing the scrutiny of the present-day FDA standards, even if a patent on the drug were possible.) The current FDA approval procedure takes time and a substantial financial investment on the part of pharmaceutical companies, and it is unlikely that these companies would be willing to make the commitment toward research and development of a cannabis-based product. The challenges in isolating and developing specific cannabinoids or combinations of

## Walt could spend his final days in prison instead of a hospital.

Please join the effort to protect patients who need medical marijuana for serious illnesses.



Over 400 legislators, medical professionals, religious leaders, celebrities, and organizations on the local, state, and national levels have signed a letter to President Bush asking him to allow people with AIDS, cancer, and other serious illnesses to use medical marijuana if they have the approval of their physicians . . .

Dear President Bush:

Like most Americans, we believe that seriously ill people should not be

Currently, federal law confers a one-year prison sentence for possessing a small amount of marijuana for any reason — and no exception is made for medical use.

The legalization of marijuana for medicinal purposes is "an issue that must be debated on more than simply a medical level. There are significant economic, social and political considerations." Reproduced above is part of a recent advertisement published in *The New York Times* by the Coalition for Compassionate Access, an organization advocating the legalization of marijuana for persons suffering from cancer, AIDS and other serious illnesses.

cannabinoids as well as rapid-onset, non-smoked delivery systems (such as a nasal spray, nebulizer, skin patch, or suppository) would be considerable. As Grinspoon has commented:

“In the end, the commercial success of any cannabinoid product will depend on how vigorously the prohibition against marijuana is enforced. It is safe to predict that new analogs and extracts will cost much more than whole smoked marijuana even at the inflated prices imposed by the prohibition tariff [the increased cost of procuring marijuana due to its present illegal status]. I doubt that pharmaceutical companies would be interested in developing cannabinoid products if they had to compete with natural marijuana on a level playing field.”

### Medical marijuana in the context of marijuana legalization

Significant economic issues make it difficult to consider the possibility of legally available medical marijuana independently of legal availability of marijuana itself. An appropriate metaphor for present-day options surrounding medical marijuana may not be a “Trojan horse” (borrowing the expression of law enforcement officials), but rather a “Catch-22.” The federal government may be the only reasonable source of funds for the development of medical cannabinoid products and non-smoking delivery systems for them. Cannabis itself is unpatentable, thus making it unattractive to private pharmaceutical companies. The long-standing hostility on the part of the government with regard to cannabis in general makes it unlikely that the government would be helpful in underwriting the substantial development costs of any medicine based upon it. Besides, it is an open question whether any future cannabinoid product, no matter how sophisticated its composition or how safe its route of administration, would effectively surpass natural marijuana as a medicinal agent.

We are left with an alternative, though it is a change that would not be easy to accomplish either on a political

or social level. Congressional action could reclassify marijuana as a Schedule II controlled substance but exempt it from FDA-approval requirements. In doing so, we would avoid the problems of what Grinspoon has called the “pharmaceuticalization of marijuana.” However, we would still face a number of practical issues. Where would sufficient quantities of medical marijuana be grown and could these areas be sufficiently protected from people seeking marijuana for “non-medical” reasons? Would it be fair for a physician now to be the gate-keeper on such a controversial treatment? How would they make intelligent judgments about whether it was appropriate to prescribe smoked marijuana and in what dosage levels, in the absence of controlled research studies concerning safety and effectiveness? Would medical insurance cover the costs to the patient, and, if so, how would the price of medical marijuana be established? How would the positive urine test results conducted in the workplace (or schools) of individuals who are smoking marijuana for medicinal reasons be effectively distinguished from those who are not?

Perhaps, some of these problems can be resolved. We already have medically useful Schedule II controlled substances, such as morphine (used as an analgesic) and cocaine (used as a local anesthetic) that have retained their illicit status in the United States when used outside a specific medical application. However, the biopsychosocial profile of marijuana is clearly different from that of morphine or cocaine, and the major advocates of medical marijuana are seeking far greater access to it than we presently have to other Schedule II drugs. Most significantly, if there remains major practical obstacles in the securing of medical marijuana, in the absence of marijuana legalization, some patients may face a difficult dilemma. Having failed to achieve reasonable access to a legalized form of medical treatment, they might choose to abandon the legal system in favor of the black market and retreat back (in Grinspoon’s words) “to their own gardens and closets.”



Charles Levinthal earned an A.B. *summa cum laude* in psychology from the University of Cincinnati, and an M.A. and Ph.D. in experimental psychology from the University of Michigan. He teaches undergraduate courses in introductory psychology, fundamental perspectives in psychology, statistics, and biopsychology, as well as graduate courses in cognition/perception and neural bases of behavior.

Professor Levinthal is the author of eight books, including three editions of a biopsychology textbook *Introduction to Physiological Psychology* (Prentice-Hall, 1979, 1983, 1990), a general-audience book on brain endorphins, *Messengers of Paradise: Opiates and the Brain* (Anchor Press/Doubleday, 1988; Spanish and Japanese translations, 1989 and 1991), three editions of a health/physical education/psychology textbook, *Drugs, Behavior, and Modern Society* (Allyn and Bacon, 1996, 1999, 2002) and *Point/Counterpoint: Opposing Perspectives on Issues of Drug Policy* (Allyn and Bacon, 2003).

His research has ranged from work on Pavlovian conditioning in animals to hemispheric differences in human cognitive activity. More recently, Professor Levinthal has focused on the role of phonological processing in reading fluency. In 1987, he presented the Hofstra University Distinguished Faculty Lecture, “*Messengers of Paradise: The role of endorphins in brain evolution.*”

Professor Levinthal’s professional accomplishments have been featured in *Who’s Who in America*, *Who’s Who in the Biobehavioral Sciences*, *Who’s Who in the Frontiers of Science and Technology*, *American Men and Women of Science*, among other professional publications.

Professor Levinthal is a charter member of the Hofstra chapter of Phi Beta Kappa and currently serves as president of the chapter. He has served as co-director of the Applied Research and Evaluation in the Psychology Ph.D. Program (1978–1986) and director of Undergraduate Studies in Psychology (1987–1999). He is an associate editor for the *Journal of Drug Education and Awareness* and serves as the neuropsychology editor for the *Journal of Polymorphous Perversity*, a journal of humor in psychology. -SK