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The Legalization Debate: Is there a Middle Ground?

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The legalization debate today is very different from when it began with the hearings for the Marijuana Tax Act of 1937 that effectively made it illegal through high taxation. In the 17 years prior to the act, only seven articles were listed in the Reader's Guide to Periodic Literature and the main concerns expressed at the time were that a) farmers would be inconvenienced by having to kill a plant that grew wild in many parts of the country, b) domestic hemp industries would be damaged, c) paint and varnish companies would have to find a new source of oil (then obtained from hemp seeds) and d) impact of having to remove hemp from bird seed on "singing birds" (Bonnie & Whitebread, 1970). Most of the information presented against marijuana was hearsay about how it turned people into murderers and would be used by the underworld to enslave youth, or it was tinged with anti-Hispanic tones about migrant workers (Sloman, 1979). In the ensuing years there has been a near continuous and highly polarized debate concerning marijuana. Policy arguments have and often continue to be framed at the extremes of draconian prohibition/criminalization on the one side and unfettered legalization/miracle cure plant promotion on the other. Today, marijuana is both the most commonly-used illicit drug (suggesting many people do not agree with or care about the risks) and the illegal drug most likely to be mentioned in arrests, emergency room admissions and autopsy reports (suggesting that it is not the harmless substance proclaimed by its proponents). In this chapter we will attempt to contrast the major arguments being made by both sides and explore whether there is any middle ground in the continuing debate over the legal status of marijuana in the United States.

Themes Around Which the Debate and this Article are Organized.

Even a cursory review of marijuana policy discussions leads to the conclusion that this is a debate of extremes: soft versus hard drugs, good versus bad drugs, supply reduction versus demand reduction, miracle drug versus carcinogenic, prohibition versus legalization. It is also apparent that the debate is often conducted with code words that say as much about issues of social class, race, gender, generation, and institutional self-interest than about drugs and drug policies. Complicating matters further, both sides of the debate consider the status quo unacceptable and seem to use some of the same data to reach radically different conclusions. Table 1 provides a summary of some of the main themes in the debate and highlights some of the arguments being made on both sides. The chapter is organized according to these themes, and in each section we attempt to summarize the argument on each side and then present our

understanding of the middle ground. Taking all of the information together, the final section summarizes the implications for policy makers and presents our recommendations.

Table 1. Summary of Main Themes in the Marijuana Legalization Debate

	Common Proponent Arguments	Common Opponent Arguments
Right to Use	• Individuals should have the right to decide whether to use marijuana just like cigarettes or alcohol. • There is a large minority that has and continues to use marijuana and should be allowed to do so as long as they are not harming others.	• Most addictive substances are not legal because they hurt the individual and society -- particularly adolescents.
Alternative Uses	• Marijuana may have important medicinal value and/or help relieve symptoms during chemotherapy. • Hemp can be grown for commercial use with such a low THC level as to have minimal illicit value. • Hemp could be a commercially viable alternative to tobacco for small farmers.	• Alternative and more effective drugs exist for the same purpose. • There are alternative fibers for the same purpose. • The commercial market for hemp is small. • Hemp might be diverted to the illegal product of marijuana.
Consequence of Use	• There are no to minimal consequences of marijuana use. • Many of the consequences that do exist are artifacts of the current laws (e.g., possession). • Marijuana use is not associated with property crime or violence and is thus more like alcohol and tobacco than like cocaine or heroin. • Dismiss claims of consequences as “myths” or propaganda.	• Increasing marijuana use is associated with increasing rates of dependence on marijuana, tobacco, alcohol and other drugs, particularly among adolescents. • Increasing rates of marijuana use are associated with a wide range of other legal, social, emotional, and health problems. • Marijuana is a known carcinogen and can exacerbate or lead to lung conditions.

Effectiveness of Regulation	• Current interdiction, incarceration, prevention and treatment policies do not work. • Prohibition did not work.	• Current policies are not perfect, but do work. • Prohibition was very effective.
Cost to Society	• Legalization would save enforcement, court and prison costs. • Legalization could be used to generate another sin tax.	• Real costs to society would be in terms of increased rates of dependence and their associated psychological, family and vocational problems. • Other legal costs from increased DUI (from alcohol and/or marijuana), and fights may consume savings. • Cost to adolescents is particularly high.

Right to Use

One of the most fundamental concepts for the proponents of legalization is the idea that individuals should have the right to decide whether to use marijuana just like cigarettes or alcohol. Most recognize that this right would have to be linked to the idea that they are not harming others and that there would have to be some kind of regulation parallel to existing DUI laws and restricted smoking areas due to secondhand smoke. A key piece of information used in this debate is that marijuana has and continues to be the most commonly-used illicit substance in America. In 1996, for instance, 32% of Americans in the household population (50% of those aged 25 to 34) had used marijuana in their lifetime and 5% (6% of those aged 26 to 34) had used it in the past month (OAS, 1997). By way of comparison, the lifetime and past- month rates of using all other illicit drugs (e.g., cocaine, crack, hallucinogens, inhalants, prescription drugs and opioids) were only 18% and 3% respectively. Moreover, the American public perceived the risk of marijuana use as lower than alcohol for both occasional use (44% vs. 54%) and regular use (60% vs. 77%). In addition, preliminary data from the 1997 National Household Survey on Drug Abuse (NHSDA; OAS, 1998) show that the perceived risk of using marijuana has dropped to a 10-year low. Thus, the argument is being made that there is a large minority that has and continues to use marijuana and should be allowed to do so as long as they are not harming others. Moreover, following in the wake of successful referenda allowing limited legalization of marijuana in California and Arizona, there will undoubtably be more efforts in the 21 (mostly western) states that allow this sizable minority to propose voter-initiated referenda. While some will fail, this ad hoc approach to legalization is likely to be a major facet of the political landscape for the foreseeable future.

Opponents of legalization typically argue that most addictive substances are not legal because they hurt the individual and society - particularly adolescents. Moreover, marijuana is a gateway drug that often leads to other drug use and problems (Mustari et al., 1997; Johnson & Gerstein, 1998). The core of this argument is that use is likely to harm the individual or others and hinges largely on the remaining themes below.

While this issue can be informed by facts, the fundamental issue is a question of how the rights of the individual and society can be balanced. Clearly tobacco and alcohol are both harmful substances that we “chose” to keep/make legal in spite of the consequences. Similarly, we have enacted and repeated numerous safety laws based on what we as a society were willing to tolerate (e.g., 55 mph speed limits, mandatory seat belt laws, vagrancy laws). Thus,

we recognize that this is a “value” decision that society must make and that a large minority would like the right to do so. But unlike 60 years ago, this time we need to make a more informed and rational decision. This we have tried to do below.

Alternative Uses

Medical Use. Many of the current ballot initiatives focus less on the overall legalization of marijuana than the legalization of its use in the treatment of people with severe and/or terminal illnesses. Numerous anecdotal reports have been given suggesting that marijuana may be useful in treating nausea and/or stimulating appetite in those undergoing chemotherapy, with glaucoma, or being treated for AIDS. This movement has recently gained significant momentum from meta analyses showing that the application of marijuana’s active ingredient (delta - 9-tetrahydrocannabinol or THC) does appear to be useful in treating the nausea associated with cancer chemotherapy and in stimulating appetite (Voth & Schwartz, 1997).

The argument against the medical use historically has been founded on three principals. First, other drugs that do the same things are available. Second, marijuana is a carcinogen or at least a harmful substance. Third, there has been a lack of empirical studies evaluating marijuana use. While the latter increasingly is being addressed, it is important to note that these studies have produced very mixed results. The Voth & Schwartz (1987) article cited in favor of using pure THC also noted that they did NOT find evidence that the crude form of THC found in marijuana was sufficient to help with side effects and that both pure THC and crude marijuana acted like carcinogenic substances. Moreover, reports that marijuana might also be effective in relieving the side effects of HIV / AIDS treatments and improving appetite have not always held up under more rigorous preliminary examination (Whitfield, Bechtel, & Starich, 1997).

We believe that there is sufficient anecdotal and scientific evidence to support further research on the effectiveness of marijuana in the treatment of seriously and terminally ill patients. However, evidence on marijuana’s effectiveness and safety is very mixed, and problems have been reported. In particular, marijuana may cause a variety of respiratory problems and there is some evidence that it is a carcinogenic substance. While this is true of other medications for terminally or severely ill patients (e.g., azidothymidine or AZT), there are scores of examples where a rush to put substances into the market place led to significant negative consequences (e.g., amphetamine diet pills or thalidomide). The medical uses of marijuana and/or pure THC should be evaluated, but with the full set of safeguards expected of any new product (though probably under the fast track regulation given the severity of the conditions in question).

Commercial Use. The second alternative use that is often proposed is the legalization of hemp - a generic name for marijuana plants including those with such low THC levels as to have minimal illicit value. Hemp was one of the first plants cultivated by humans and has been used to make fabric and paper for over 10,000 years. It was grown by Presidents Washington and Jefferson, was a royally- and then federally-mandated crop during the 17th and 18th centuries and was a federally-subsidized crop in the U.S. as recently as World War II. The U.S. government, however, has not issued a permit for growing hemp in 40 years (http://thehia.org/public/hempfacts.html)

Proponents of reissuing permits or deregulating commercial hemp use (summarized here from Roulac, 1997 and http://thehia.org/public/hempfacts.html) “"assert” that hemp has many uses and one of the highest crop values per acre. Hemp seeds are one of the highest sources of essential fatty acids, complete protein (more of the digestible form than soy beans), and B-vitamins, and contain 35% dietary fiber. Its bark produces one of the longest natural soft fibers which is longer, stronger and more absorbent than cotton fiber, and also provides better insulation than cotton. It is important to note that, while almost half of the agricultural chemicals used in the U.S. are applied to cotton; hemp is asserted to grow well without herbicides, fungicides, or pesticides. If true, hemp would be a more sustainable and less polluting source of fiber for paper, would actually be more resistant to yellowing and decomposition, and is able to be recycled more often. Because of its high value per acre and many uses, hemp could be one

of the few products that small family tobacco farmers switch to (in fact many switched to tobacco because hemp was removed from the market). The list of facts about hemp goes on and on like the ad for the hemp industry that it is.

While relatively small, commercial hemp production is on the rise and many countries have lifted previous bans in the past five years. Countries where commercial production is underway or being established include: Australia, Austria, Canada, Chile, China, Denmark, Egypt, Finland, France, Germany, Great Britain, Hungary, India, Japan, Netherlands, Poland, Portugal, Romania, Russia, Slovenia, Spain, Switzerland, Thailand, and the Ukraine (http://thehia.org/public/hempfacts.html). A major reason that production bans are being lifted is because hemp is a cash crop with one of the highest dollar value yields in agriculture: $750-$1,250 per acre for the fiber and another $300 to $487 for the seeds (www.pbmo.net/oxhemp/commo.html). It may also play an important role in efforts by the Robert Wood Johnson Foundation and several southeastern states to find alternative cash groups for small struggling family-owned tobacco farms (Reaves & Purcell, 1996). These families may be locked into tobacco farming because few other crops can pay the ~$3600/acre gross of tobacco. Though this gross yield is much higher, the planting costs for tobacco are about $2,000 per acre and 5 to 10 times higher than those for hemp.

The arguments against commercialization tend to focus on two issues. The first is that the world hemp market has been relatively small for the past 20 years. Some have argued that the high cost per acre might actually work to keep down the demand even if it was commercialized (Bennett, McDougal, & Roques, 1995). While the Hemp Taxation Act of 1933 did put an end to the industry, production of hemp had already fallen off to less than 200 acres in the whole U.S. in the preceding five years because it could not compete with other less expensive crops (e.g, cotton, flax, pulpwood) and/or cheap imports from overseas. When the Japanese overran the Philippines early in World War II, the U.S. military did have 146,000 acres planted (primary for marine rope), but this production died out after the war when hemp was replaced by stronger and less expensive nylon cord. Countries like Mexico that tried to keep their small hemp farmers going actually had to subsidize it (like the U.S. does with tobacco farms) because it was not commercially competitive with other products and/or hemp produced less expensively in some African or South American countries.

A second issue is that marijuana (with a high THC content) could potentially be grown under the guise of being hemp because the plants are almost indistinguishable to the naked eye. This point is not in dispute by anyone and it is relatively clear that the ulterior motive of many people wishing to reintroduce commercial hemp is, indeed, to either get a foot in the door of full legalization and/or provide cover for growing hemp that contains a meaningful level of THC. Opponents maintain that commercialization of hemp is unnecessary because of the available alternatives, and that commercialization has enormous potential to create legitimacy and/or new sources of marijuana at a time when marijuana use is already on the rise.

Like the medication debate, many of the claims about the commercial value of hemp are just that -- claims. If even partially true, hemp could indeed prove to be a valuable commodity. We have significant concerns about its true commercial viability and feel these claims may be grossly overstated. With increased production, the cost of hemp will come down unless there is an increase in demand. It is unclear from where these new markets would come without significant public or private commitments to research and development, and even with these commitments, it is still unclear if costs could be brought down sufficiently to make the products commercially viable alternatives to well-established natural and synthetic alternatives. In terms of public funds, policymakers need to weigh some of the potential advantages (e.g., a replacement crop for small tobacco farmers, a less polluting crop) against the certainty that at least some of the hemp would be diverted into plants with a higher THC level for marijuana use. We believe that agricultural researchers and companies should be allowed to further explore the properties and commercial value of hemp, but that this development needs to be monitored and any commercial production taxed at a sufficient rate to cover the costs of a testing/monitoring program to minimize diversion.

Consequence of Use

Proponents of legalization often explicitly state (or imply) that a) there are no to minimal consequences of moderate marijuana use, b) the problems are no worse than those related to alcohol use, c) many of the consequences that do exist are artifacts of the current laws (e.g., possession), and d) marijuana is not a "hard drug" like cocaine or heroin because it is not associated with property crime, dependence, or health or emotional consequences. Proponents rarely offer more than anecdotal evidence and/or circular claims to support their positions; rather, they often try to argue against "Myths" or propaganda put out by the "opponents" and or the government (e.g., Zimmer & Morgan, 1997, http://www.visi.com/-gm/infocanv/myths.html).

Opponents argue that there is an extensive litany of evils that result from marijuana use and that it is a gateway to heavier drug use. While they are quick to give lists of problems they assert are caused by marijuana, they also primarily rely on anecdotal evidence or circular claims and focus on disproving the "myths" and propaganda of the opponents (vs proving their own point).

Unfortunately both sides often do a poor job of proving their own points or fairly weighing the evidence and instead simply cite their position in an ideological mantra. Complicating matters further, there is clear evidence the government did originally misrepresented the evidence it had against marijuana (Bonnie & Whitebread, 1970) and has repeatedly exaggerated problems (e.g., refer madness's marijuana will make you murder, marijuana will clog up your arteries, marijuana will give you breasts). In a day and age when marijuana use is common, such exaggerated claims are only useful for a short time before they back fire. Now the government's (and many research) statements are routinely dismissed by the proponents even when they are well ground and, conversely, some government officials seem very reluctant to critically questioning the basis the opponent's assertions.

So what do we know? Since it would be both illegal and unethical to randomly assign people to smoke marijuana, much of the evidence concerning its consequences is correlational. This said, there is substantial correlational evidence from large representative samples of an extensive array of negative consequences that vary proportionately with the frequency of use. For instance, among people who have used marijuana in the past year, 40% reported one or more symptoms of dependence (indicating a need for treatment) in the National Household Survey on Drug Use (NHSDA; OAS, 1995). Among those who used 12 or more times in a year, 60% reported one or more of these symptoms. These rates are very comparable to those associated with 12+ days during the past year of using cocaine (26% and 62%) and alcohol (22% and 68%) -- though lower than those associated with tobacco (59% and 76%) (OAS, 1997). Moreover, Table 2 uses data from the NHSDA to show that the relationship between age of onset and having one or more symptoms of dependence as an adult varies significantly by age. Relative to people who start using as adults, those who start using marijuana between the ages of 15-17 are twice as likely to report a symptom of dependence as an adult; those who start under the age of 15 are six times as likely to report one or more symptoms. Note that in both cases this is a significantly higher rate of risk among adolescents than has sparked recent debate about tobacco and alcohol use (also shown in Table 1) and are very large effects in the field of public health.

Probability and Relative Risk of Having 1 or More Substance Disorder Symptoms as an Adult Based on Age of First Use

Substance Used	Age of First Use of Substance (of lifetime users) *					
	Under 15		15-17		18+	
	1+Sx	Odds	1+Sx	Odds	1+ Sx	Odds
Lifetime Tobacco Users (N=10887)	26%	2.00	20%	1.54	13%	1.00
Lifetime Alcohol Users (N=12795)	27%	3.92	15%	2.12	7%	1.00
Lifetime Marijuana Users (N=5847)	24%	5.71	9%	2.16	4%	1.00

There is also substantial evidence that marijuana use is highly correlated with a wide range of other problems. Using data from the NHSDA again, we found that 14 out of 15 adolescents who used marijuana also used alcohol. Those who used marijuana/alcohol weekly were much more likely than non-users in the past year to have had problems related to committing a crime (69 percent vs. 17 percent), attention deficit/hyperactivity/conduct disorder (57 percent vs. 4 percent), being involved in a major fight (47 percent vs. 11 percent), shoplifting (41 percent vs. 4 percent), being admitted to an emergency room (33 percent vs. 17 percent), committing a theft (33 percent vs. 4 percent), selling drugs (31 % vs. 0%), damaging property (31 percent vs. 3 percent), dropping out of school (25 percent vs. 6 percent), being arrested (23% vs. 1 %), and/or being on probation (16 percent vs. 1 percent) (McGeary, Dennis, French, & Titus, 1998). This is very much like other hard drugs and goes well beyond simple possession. Moreover, increases in problems are almost all directly proportional to the frequency of use -- with low-frequency users having more problems that non-users but less than high-frequency users. Finally, marijuana is also a respiratory irritant and carcinogen, particularly when combined synergistically with tobacco use as is commonly done and delivers more than tar to the lungs cigarettes (Roth, Arora, Barsky, Kleerup, Simmons, & Tashkin, 1998; Voth & Schwartz, 1997; Van Hoozen & Cross, 1997 c.f. Sidney, et al., 1997).

Several of the supposed "myths" about marijuana use have been addressed with empirical studies, including: a) marijuana, tobacco and alcohol do appear to be one (of several) gateways to heavier drug use (Johnson & Gerstein, 1998; Mustari et al., 1997); b) marijuana causes measurable physiological, cognitive, emotional and social impairment (Lundqvist, 1995; Millsaps et al., 1994; Pope & Yurgelun-Todd, 1996; Roffman & Stephens, 1997; Solowij, 1995; Solowij et al., 1995a&b), c) THC is fat soluble, trapped in body fat/tissues and released slowly over time (Chaing & Hawks, 1986; Leighty, Fentiman & Foltz, 1976), and d) marijuana use is now the most commonly mentioned substance among adolescents entering treatment, being seen in emergencies rooms, and/or receiving autopsies (OAS, 1995; 1997). Though there is no evidence yet of a specific toxic effect of accumulating THC in the body, it is associated with continuing physiological impairment that has been documented to persist up to six months after the last use among initially heavy users (Solowij, 1995; Solowij et al., 1995a&b). While there are some mixed findings (endemic to observational research), most research to date suggests that more frequent and/or longer marijuana use is likely to lead to dependence and a wide host of

major individual, family and social problems. While proponents may still prefer to legalize marijuana, they need to recognize that it is an addictive substance and that legalization is likely to lead to increased use and to exacerbate a wide range of problems. This is important because many proponents (e.g., Zimmer & Morgan, 1997; http://www.visi.com/-grp/infocanv/myths.html) continue to cling to the belief that all of the problems are little more than propaganda - willingly dismissing correlational evidence much as smokers did throughout the 1960s and 70s.

Effectiveness of Regulations

The proponents of legalization argue that the continued high use and acceptance of marijuana in spite of increased enforcement and penalties is prima facie evidence of the failure of current regulations. They frequently say that America's experiment with alcohol prohibition was an abject failure and cite data showing little or no change in the rates of alcohol use or problems in the years right before and after prohibition "ended." These proponents also focus on claims that prohibition only serves to increase corruption (e.g., Carter, 1992; Nadelmann, 1991, 1992) and these points lead many to say or predict that the other drug prohibition movements will prove to be a failure. They call either for outright deregulation or a shift back to state and local regulations that were more typical until about 60 years ago. Others note that prevalence data is predicted much less by changes in regulation than by changes in "perceived risk" (Harrison, Backenheimer & Inciardi, 1995).

Conversely, opponents of legalization will argue that the continued high use and acceptance of marijuana is prima facie evidence of the need to redouble our prevention, treatment and legal efforts to combat it. They argue that while people "chose" to repeal prohibition, it was actually very effective and cite data from the years right before and after prohibition was "introduced" to bolster their claims (Burnham, 1993; Moore, 1992a). They also acknowledge the role of "perceived risk" and/or "parental pressure" as a protective factor against use (e.g., Mustari et al., 1997).

Such counter claims are among the most perplexing in this debate since both sides are nominally citing the same data. The incidence of marijuana use today is higher than any other illegal substance and rising back toward prior records from the late 1970s (and exceeding them for 8th graders) (Dennis & McGeary, in press; OAS, 1998; http://www.isr.umich.edu/src/mtfL). The current high prevalence rates are like the proverbial glass of water filled to the middle - both half empty and half full. Whether this is cause for deregulation or tighter regulation goes back to the question of where to place the balance between individual freedom and consequences to society.

Regarding the interpretation of the historical effectiveness of prohibition, we believe the problem here is two-fold. First, the proponents and opponents of regulations are looking at different periods of time. Second, we believe that both regulation and prevalence change in response to public opinion (i.e., their correlation is indirect or even spurious over short periods of time). Let's start by looking at alcohol consumption from 1710 to 1975 using per capita alcohol consumption data from Rorabaugh (1976; 1979). Alcohol use actually peaked at a mean annual consumption of 3.1 to 3.7 gallons per person between 1770-1830, fell off to 1.0 to 1.4 gallons between 1840-1900 and then rose again to 1.6 to 1.7 in the 15 years leading up to prohibition. During prohibition the rates dropped off to .6 gallons per person then went back to around 1.1 gallons after it was repealed and rose gradually again to 2.0 in 1975. Thus, the initial passage of prohibition, which coincided with massive public displeasure with the rising rates of alcohol use (as evidenced by passing the prohibition amendment itself in 2/3rds of the states) did in fact precede a large decline in alcohol use. It also proceeded major declines in the number of people seeking treatment for alcoholism and/or alcohol-induced medical disorders (Moore, 1992), as well as the demise of several major treatment organization and prevention movements (White, 1998). Conversely, in the period leading up to the repeal of prohibition, which coincided with increased public tolerance (as evidenced by the prohibition's repeal via an amendment), use and medical problems had slowly crept back up to their pre-prohibition rates and the laws were often going unenforced; consequently, there was little subsequent change when the actual

amendment was nominally repealed. Thus, the problem is that both groups only look at part of the picture and ignore how regulations are only effective when they are reflections of public opinion and being enforced. Since regulation, enforcement and prevalence typically change in response to public opinion, it is important to incorporate the latter into evaluations of regulations (e.g., looking back over longer periods of time, checking trends in public opinion, looking at the degree to which penalties or regulations are being enforced before they are "nominally" added/removed).

This three-way relationship between public opinion, legislation and use can also be seen in reviews specific to marijuana (e.g., Harrison, Backenheimer, & Inciardi, 1995; Inciardi, 1991). The initial rise in marijuana use began in the 1950s and 1960s and peaked between 1969 and 1972. During the latter period, marijuana was nominally put on the same schedule of drugs as heroin and LSD (Controlled Substances Act of 1970) but at the same time 42 states reduced penalties for marijuana possession and it was clearly part of the popular culture of the time. The second peak of use in the late 1970s followed a five-year period during which 11 states decriminalized possession of small amounts of marijuana for personal use and the Carter Administration was seriously discussing legalizing marijuana. This was followed by a barrage of anti drug laws and prevention campaigns and decreasing use in the 1980s. Extending this analysis into the 1990s, we are currently experiencing 12 year record prevalence rates and record incidence rates among 8th graders (http://www.isr.umich.edu/src/mtf/). Moreover, this coincides with decade long trend in which the general public is viewing marijuana as less and less harmful (OAS, 1998) and several states are again looking at decriminalizing some uses of marijuana.

Cost to Society

Proponents of legalization will typically argue that it would literally save the $3-10 billion dollars currently spent on interdiction, enforcement, court and prison costs and that legalization could be used to generate another sin tax that could serve to both regulate consumption and cover the additional costs of treatment (e.g., Friedman & Friedman, 1984; Nadelmann, 1991, 1992). Others focus on the role of drug prohibition in increasing violence, street crime, corruption, and generally supporting the underworld's illegal activity (e.g., Carter, 1992; Schwartz, 1987). Some also argue that the current widespread use of unregulated marijuana actually poses a heath threat because there are effectively no limits on concentration, additives or even the presence of pesticides. Finally, the cost to society of marijuana use is often compared with the much larger costs to society of alcohol and tobacco.

Opponents of legalization will generally concede that the cost of drug prohibition are great but argue that the costs of legalization are likely to be even greater (e.g, Bennet, 1992; Inciardi & McBride, 1991; Moore, 1992b; Wilson, 1992). They point out that during the period after the (re)legalization of alcohol in the U.S. and during the period of legalized heroin prescriptions in the United Kingdom, use of these substance did generally increase over a period of several years (note that analyses showing no effect are typically limited to short periods of time). Opponents say that like most products in the world, the demand for marijuana is likely to be elastic and increase if the cost decreases. (Note that if the taxes on it were set so high to hold the price constant, this would create a new black market and negate any gains from legalization). Further evidence of this phenomenon can be seen in the crack epidemic of the 1980s and early 1990s that was spurred on by costs as low as $5 per rock. Comparisons of the current cost to society of marijuana and alcohol are misleading since the former is currently illegal and the latter legal. This said, it is important to note that the estimated cost to society of alcohol abuse in 1990 was already several times higher that the criminal justice costs at $98.6 billion (Rice, 1993) and is now presumed to be even higher in 1998 dollars (National Advisory Council on Alcohol Abuse and Alcoholism Subcommittee on Health Services Research, 1998). Finally, the cost of adolescent alcohol use is particularly high as it comes at a critical time of development and is associated with a higher likelihood of ongoing problems as an adult (Dennis et al., 1998).

Some of the issues raised by proponents are legitimate as drug prohibition does costs

billions of dollars each year, particularly as a result of state and federal drug laws that have resulted in record high drug-related arrests, court cases, and prison sentences (Inciardi, McBride, & Rivers, 1996). We can and probably should debate the relative merits of different allocations of these funds and look at their impact on the limited resources of our criminal justice system. However, these costs would not simply go away as a result of legalization for several reasons. First, there will be new regulatory costs to address the issues of quality and dosage as well as the likely prevention of underage use. Second, while many people are in drug court for charges related to marijuana use (31 %), the next most common substance related to the charges is actually "misuse" (e.g., DUI, fighting) of alcohol (27%). Even if marijuana was legalized, it would probably still result in many criminal justices costs because a) we are likely to pass laws holding people responsible for misusing it (e.g., DUI laws) and b) the correlation between increasing marijuana use and increasing alcohol use, fighting, behavior problems and a variety of illegal activities discussed above. Compounding matters further, we believe that it is naive to think that full legalization of marijuana (or even just decriminalization) would not lead to increased use. Additionally, general assumptions that marijuana has few direct health consequences needs to be reevaluated in light of the correlation between increased use, lung problems, attention problems, emergency room admissions and treatment admissions. While marijuana is not likely to result in an over dose, it is increasingly showing up in autopsies (particularly among adolescents) and is likely to be indirectly related to death (e.g., driving under the influence). Recent analyses we have done of the NHSDA data show that those reporting one or more symptoms of marijuana dependence are less likely to be working and, those who are working, work fewer hours (Bray, Zarkin, Dennis, & French, 1998). Thus, we believe that legalization may reduce some but not all criminal justice costs associated with marijuana use and that it is likely to dramatically increase other costs associated with health care and lost productivity.

Reprise, Implications and Recommendations

In reviewing the marijuana legalization debate we have concluded that whether or not marijuana should be legal is fundamentally a "choice" that needs to be made between individual liberty and societal costs -- and that this should be an "informed" choice. While many Americans have some first-hand experience with marijuana, there is a significant amount of confusion about its use, consequences and cost to society. Proponents and opponents of legalization make blanket statements that simply cannot both be true and in many cases even cite nominally the same data to support opposite conclusions. In our search for a middle ground we have tried to fairly review both sides and concluded that:

- There is sufficient anecdotal and scientific evidence to support further research on the effectiveness of marijuana in the treatment of seriously- and terminally-ill patients; however, we also believe that it is not a wonder drug/panacea, has significant potential to do harm and should be evaluated within the framework of existing guidelines for new drugs.
- If the claims about hemp's agricultural properties prove to be true, it may be an important crop, but there are major unanswered questions about these properties and the crops' commercial viability relative to alternative crops and synthetic products; while we believe that agricultural researchers and businesses should be allowed to explore these issues, any commercialization program should include a user fee to cover the cost of a THC monitoring protocol to prevent the likely diversion problem it will create.
- There is substantial correlational evidence that the increasing rate of marijuana use is associated with increasing rates of marijuana dependence, other drug use, behavior problems, cognitive problems, health problems and illegal activities (including those other than possession and dealing); Moreover, these problems are significantly worse for adolescents than adults; any discussion of legalization needs to address these issues and should continue exclusions for adolescent use.
- Regulations to control marijuana, alcohol and other drug use have primarily been

effective when they are reflections of public sentiment and enforced; looking over longer time periods and taking into account public sentiment and both federal and local regulation, we believe that regulations have reduced substance use but have not generally eliminated it.

- The current prohibition of marijuana is expensive, but legalization would not eliminate many of these costs and would increase other cost associated with misuse (e.g., DUI), substance abuse treatment, mental health treatment, health treatment, and result in a loss of workplace productivity; fundamentally we also believe legalization would increase demand and the number of active users.

Both sides have some valid point but also need to recognize some problems in their own argument and approach.

We believe that proponents will continue to argue for decriminalization and legalization of some or all uses of marijuana, but they need to recognize that it does indeed have negative consequences and will probably increase costs to society not reduce them. A serious effort in this vein needs to surpass libertarian issues and address practical questions about dose, quality, regulation, misuse legislation, etc. (See other chapters of this volume). Proponents must also recognize that large numbers of people are already dependent on marijuana and need treatment. Unfortunately, there are no major self-help groups (e.g., AA, CA, NA) or treatment modalities that focus on marijuana use and little research on the effectiveness of current approaches for other drugs apply to this more general population (Roffman & Stephens, 1997)

Opponents of legalization must come to terms with the fact that many of their past claims have indeed been exaggerated. While this might have worked in the 1930s when few people were familiar with marijuana, today the material that was used then is now viewed as “satire” by a more educated public (e.g., the movie Reefer Madness). Opponents also need to move away from general statements (e.g., just say no) or exaggerated claims and focus on the true consequences of marijuana use, much as is done with alcohol and tobacco. General prevention efforst would also be wise to shift from their narrow focus on harder drugs (e.g, heroin, cocaine, crack) that are rarely used, to marijuana -- which is used by more than twice as many people as all the other illegal drugs combined.

According to the most recent national survey (OAS, 1998), by 1997 marijuana had been used one or more times by 33% of Americans over the age of 12 (~71.1 million people) with significant variation by age: 12% of those aged 12-15, 33% of those aged 16-17, 41 % of those aged 18-25, 48% of those aged 26 to 34, and 39% of those 35 or older. Moreover, about one out of seven of these lifetime marijuana users (-11.1 million people) have used marijuana in the past month, with virtually all of these past month marijuana users also using alcohol and one-third using other illegal drugs. In spite of the evidence reviewed above, people are increasingly viewing marijuana as less and less harmful. If they are to make an informed choice the debate must move away from its current ideological basis and do a more fearless appraisal of the actual evidence.

Both sides also need to be careful to look separate at the issues related to adolescent use and even the consequences of their debate. This is the third major period in which our nation has debated decriminalization and/or legalization: each time this has been associated with increased use and decreasing ages of first use. Parental ambivalence about marijuana use (common among baby boomers who feel hypocritical since they used) is statistically the equivalent of telling kids to “go for it.” Unfortunately, the consequences and cost of adolescent initiation (particularly among those under age 15) is significantly higher than it was for their parents (who did not generally start it until they were adults). Both policy makers and researchers also need to recognize the almost complete co-occurrence of alcohol use (and to a lesser extent tobacco use) among marijuana users. The effect of these two or three substances taken together may be very different than studies of just one of them taken alone and needs to be studied.

Conclusion

Robin Room (1978) has argued that social policies toward intractable problems -- and the ownership of intractable problems that flow from these policies -- are inherently unstable. That instability derives from an ever-changing status quo that everyone associated with the intractable problem finds unacceptable. This clearly describes the current debate over marijuana legalization. Marijuana is neither a wonder drug nor the root of all evil. It is widely used, has some viable uses, has some negative consequences and will have substantial costs to society whether it is legalized or not. As we move toward a period of local variation in regulations, the single most important thing we need to do is adopt what the late Donald Campbell (1969) referred to as "an experimental approach to social reform." This means that while strategies for problem resolution may vary in response to rigorous evaluations that determine precisely which policies and programs do and do not ameliorate the problem, a commitment to the seriousness of a particular problem must be unwavering. We suggest that the exploration of any alterations in drug control policy be based on the following foundation.

- The strategy option must be explicitly and meticulously defined, with particular focus on both the goals to which the policy is directed and the means by which those goals will be achieved. Its consideration must be weighed not in the abstract but in the details.
- Establish credible baseline data regarding cannabis use and personal and social consequences of cannabis use prior to policy implementation that will make it possible to measure changes that accrue from various policies and policy enforcement variations.
- Prior to its implementation, identify and measure those variables that could influence (confound) the outcome of the policy experiment.
- Implement systems of evaluation prior to policy implementation. We need to clearly define: "How will we know if this policy is or is not working? What measures will be used to evaluate the success or failure of the intervention?" Every effort should be made to protect data collection and evaluation from corruption by those whose personal or institutional interests are served or threatened by the policy.

As the dialogue regarding the need for any policy changes and the needed direction of those changes moves from narrow academic and policy circles to the mainstream citizenry (via referendum and increasing public attention), there is a growing need for more objective analysis of the facts. While government has a major role to play in this process, it also needs to recognize that its credibility has been compromised with many and needs to consider working with other arbitrators to facilitate a broader discussion (e.g., Robert Wood Johnson, 1998).

We believe that the general citizenry would be willing to tolerate legalization, if it perceived marijuana as something that only had direct effects on an individual, but would not be willing to tolerate it if it had direct effects on other individuals in terms of use (e.g., second-hand smoke) or misuse (e.g., DUI). Most people are willing to endorse medical or commercial research and we recommend this as long as it is well designed and controlled. But the willingness to fully legalize marijuana is likely to be significantly hampered by the growing body of evidence that it does have consequences for the individual (e.g, dependence, cognitive impairment, dropping out of school, emergency room admissions, other drug use), consequences for others (e.g., behavior problems, fighting, theft), and that while some criminal justice costs might go down, some will not and other costs to society are likely to rise (e.g., substance abuse treatment, health care, lost productivity). We, therefore, do not recommend that actual marijuana use be legalized until these issues are better understood and that active steps be taken to try to reverse the current tide of adolescent marijuana use. On the other hand, we do not believe that the punishment for using marijuana should be worse than its consequences. In the hysteria over cocaine, possession of ounce could lead to jail terms worse than for rape or murder. This is out of proportion and not very constructive for the several million people who already are addicted to marijuana. There needs to be balance here as well.

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