The Fallacy of a One Size Fits All Cannabis Policy

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Abstract

Although the cannabis plant is one of the oldest herbal products currently in use, the policies and research surrounding its use and associated risks and benefits have been points of contention throughout its modern lifespan. Cannabis has been seen as a revered botanical medicine, a demon substance sure to ruin modern society, and an alternative to Western-born pharmaceutical drugs and treatments. Over time, the debate concerning cannabis has been driven by morality, science, politics, economics and social control. Given its multiple uses (textiles, medicine, and relaxation), developing one policy to encompass these uses in a responsible way remains elusive. This paper seeks to explain why a "one size fits all" regulatory framework is not sufficient for cannabis. Antiquated notions of the effectiveness of botanical medicines compared with pharmaceutical drugs and the difference between curative (curing a diseased state) and palliative (addressing the symptoms associated with a diseased state) treatments have muddied the cannabis policy waters. Efforts to regulate the raw plant alongside cannabinoid-based medications have resulted in a regulatory roadblock, often framing doctors as gatekeepers. I propose that in order to move past this roadblock and to maximize the benefits of the cannabis plant for both curative and palliative treatments of conditions such as substance dependence, the plant and the cannabinoid-based medications must part ways and seek their own, individual regulatory destiny.

Keywords: cannabis, marijuana, public policy, pharmaceuticalization, drug war

Although the cannabis plant is one of the oldest herbal products currently in use, the policies and research surrounding its use and associated risks and benefits have been points of contention throughout its modern lifespan. Cannabis has been seen as a revered botanical medicine, a demon substance sure to ruin modern society, and an alternative to Western-born pharmaceutical drugs and treatments. At the heart of many of these policy and societal shifts was the US government. Decisions made by legislators are influenced by a myriad of exter-

nal and internal sources. Available empirical evidence, pressure from special interest groups, personal moral beliefs and experiences, political party obligations, and constituents' opinions all shape how policy is written. As can be expected with many sources of influence, disagreements and conflicts often impede the process of developing sound policy. Policy makers often disagree among themselves as to what makes a policy appropriate and successful (Kingdon, 1995). When moral beliefs and perceived deviant behavior are involved, the policy making process becomes even more vulnerable to special interests and policy makers' personal agendas. The drug laws in the United States illustrate this conflict (Duster, 1970).

The cannabis plant has been a part of American culture in some way since the country's inception. Before the United States gained independence from Great Britain, laws regarding hemp (a nonpsychoactive variety of the cannabis plant) were passed in the colonies, the first in Virginia in 1619. This law required farmers to grow the hemp plant so that the fiber could be used for paper, rope, and clothing and the seeds for food (Schlosser, 2003). Mexican migrant workers introduced cannabis to America as a means of relaxation during the turn of the century. The plant had been brought to Mexico by the Spaniards as it was colonized (U.S. Department of Justice, 1972). Over time, the debate concerning cannabis has been driven by morality, science, politics, economics and social control. Given its multiple uses (textiles, medicine, and relaxation), developing one policy to encompass these uses in a responsible way remains elusive. In the context of the political history of cannabis in the United States, the reasons behind volatile and often misdirected arguments and policies concerning cannabis become apparent. As will be shown, the early decisions made in the US regarding drug policy were rooted in moral philosophy. These beliefs would influence the future of all illicit drugs, including cannabis, stalling development of cannabinoid-based medications and access to the raw plant. Disagreement still runs high within the cannabis industry as to which regulatory path to take. I argue that one path alone simply will not do.

This paper seeks to explain why a "one size fits all" regulatory framework is not sufficient for cannabis. Antiquated notions of the effectiveness of botanical medicines compared with pharmaceutical drugs and the difference between curative (curing a diseased state) and palliative (addressing the symptoms associated with a diseased state) treatments have muddied the cannabis policy waters. Efforts to regulate the raw plant alongside cannabinoid-based medications have resulted in a regulatory roadblock, often framing doctors as gatekeepers. I propose that in order to move past this roadblock and to maximize the benefits of the cannabis plant for both curative and palliative treatments of conditions such as substance dependence, the plant and the cannabinoid-based medications must part ways and seek their own, individual regulatory destiny.

The discussion begins with an overview of the government definition of the safety and usefulness of cannabis via drug scheduling and the philosophical underpinnings of modern drug policy. The moral judgments placed on those who use substances regardless of the consequences of their use, and beliefs about what defines an "acceptable consequence" for substance use feed the political stalemate and result in cognitive dissonance among the public. Next the history of cannabis regulation in the US will be reviewed as cannabis begins its life as a medicine, is thrust back into the shadows as an illicit substance, and re-emerges as a promising alternative to modern pharmaceuticals. Finally, the argument for a

dual policy track will be presented in relationship to the use of cannabis as a treatment for substance dependence from a palliative and curative standpoint. Data on the use of cannabis for this purpose will be discussed, as will implications for the future of cannabis policy.

Cannabis: Conventional Medicine, Scourge on Society, or Both?

To understand the barriers to moving past prohibition when it comes to cannabis, it is important to look at the impact of how the government defines the medical value and safety of cannabis and the current philosophical framework about drug use. Since cannabis arrived in the United States, society has toggled with the belief that it is a recreational, curative and therapeutic agent in the context of a regulatory framework that makes these attributes mutually exclusive. Drug schedules place psychoactive substances in various categories according to their accepted medical use, perceived risk of abuse and dangerousness (Department of Justice, 1970). Schedule I is the most restrictive category, set aside for substances with a high risk of dependence and no proven medical benefit. Cannabis is currently a Schedule I substance. Due to their perceived danger, there are heavy restrictions on the use of Schedule I substances in research. The investigation into how cannabis can be utilized for curative and palliative purposes has been slowed by the Schedule I restriction in two ways. First, this restriction has slowed research into the components of the plant and its development into a pharmaceutical drug by interrupting the normal progression of botanical to medicinal discovery. In some ways we are picking up where we left off in 1937 when cannabis was reclassified from medical to recreational. Second, cannabis was labeled as having "no medical value" and placed into Schedule I before any controlled efficacy studies had been done, and after people had been using it as a medicine for thousands of years. Several lawsuits have been filed challenging the Schedule I status of cannabis; however, the federal government has not yielded on this issue (Americans for Safe Access [AFSA], 2012). Meanwhile, in lieu of clinical research on cannabis use in humans, it was gaining a reputation among users in greater society as being fairly benign and fun to use, which lent support to its recreational descriptor, but left the curative and palliative uses behind. In addition to the Schedule I status being a barrier to appropriate regulation, the philosophical viewpoint associated with drug use in general has influenced the lack of acceptance of cannabis as a palliative and curative agent.

Drug policies in the US are rooted in deontological theory, which focuses on the innate morality of actions themselves, regardless of their consequences (Darwell, 2002). Deontological theories often find their way into so-called "victimless crime" policies. These policies, revolving around unacceptable private behavior, only consider the behavior itself, regardless of the consequences. If a person uses drugs, even if the only negative consequence is to them alone, deontics would view the drug use as inherently wrong and would therefore encourage policies prohibiting drug use. Another aspect of Deontological policy is that the context in which the behavior occurs is not taken into consideration (Haydar, 2002). On the other side of the coin is consequentialist theory. Consequentialist theory can be described as focusing on the consequences of a person's actions when deciding whether to intervene. Society holds a belief that possession and use of substances deemed illicit are inherently wrong regardless of the consequences. Therefore, drug policies are centered on prohibiting access to illicit substances regardless of the consequences of their use. It is assumed that all illicit drug use is problematic and that it is not possible to be a responsible drug user. This false assumption has led to another, that prohibition is the same thing as control. The belief

that eliminating all drug use is possible prevents the belief that allowing drug use under highly regulated conditions is acceptable, even if that model is more likely to prevent negative consequences than a model of prohibition and punishment. Once cannabis was placed in the category of illicit substances rather than herbal medicines, its use was wrong regardless of the consequences and the mounting evidence of its medical potential. Once it was legally deemed to have no medical value, it was very hard to justify changing that, regardless of the research on the health and social consequences associated with cannabis that have since emerged, because in a deontological framework consequences are irrelevant. Furthermore, it is extremely taboo to suggest that cannabis, a drug placed in the most restrictive category, could be a treatment for a drug such as cocaine, which is placed in a lower schedule. However, even while cannabis is a Schedule I substance, the National Institute on Drug Abuse (NIDA) is funding research on the role of cannabinoids in treating a myriad of conditions, including addiction. This duality confuses the public, the industry and those who seek to regulate it. It also distracts from the development of practical applications for cannabis in practice. The movement of cannabis from a medicine to a prohibited substance and back again has only added to the public confusion over its proper regulation.

From Botanical Medicine to Illicit Substance and Back Again

Between the mid 1800's and the mid 1900's, cannabis would see itself going from one of the most common medicines to being regarded as one of the most dangerous substances known, to a place where it is believed to be both. The following discussion traces the use of cannabis as a medicine, its re-classification as an illicit substance and its rediscovery as a therapeutic agent.

Cannabis as a medicine.

Before the first Federal cannabis law, the Marihuana Tax Act, was passed in 1937, several major pharmaceutical companies, including Eli Lilly and Bristol-Myers Squibb produced medicines with cannabis in the ingredient list. During the Tax Act hearings the president of the American Medical Association, Dr. William Woodward, opposed the Act under fear that it would stand in the way of cannabis's medical uses (Marijuana Policy Project, 2003). Between the years of 1840 and 1900, more than 100 journal articles were published in American and European medical journals on the therapeutic uses of cannabis (AFSA, 2012). A dosing guide for doctors published in 1907, says of cannabis,

> Specific cannabis is an agent to control pain, and secure rest and for these purposes when opium would be objectionable. Unlike the latter, it causes no loss of appetite, nor arrest of secretion and the skin retains its normal condition under use. (Bell, 1907, p. 85)

Interestingly, that edition was published one year after the Pure Food and Drug Act of 1906, which marked the beginning of the end for many elixir medications, as the act included strict labeling requirements (Pure Food and Drug Act, 1906). Along with the Food and Drug Act, views of cannabis were also shifting as reports increased about the cannabis plant being brought into the US by Mexican immigrants. This cannabis, it was noted, was dangerous and caused Mexicans to exhibit ruthless behavior (Bonnie & Whitebread, 1974). The duality of cannabis was born.

Cannabis as an illicit drug.

While cannabis continued to be found in a myriad of medicines, its use in the raw form was starting to gain attention. Previously, opium and coca, from which cocaine is derived, had been subject to regulation through the Harrison Narcotics Act of 1914 (Harrison Act, 1914). But cannabis was not yet well known in the United States at this time outside of its medicinal uses. According to Walton (1938), the history of national cannabis policy in the United States can be traced back to Mrs. Elizabeth Bass, a Supervisor for the Federal Narcotics Bureau for the district covering Indiana, Illinois and Wisconsin in the mid 1920's. In a report filed with the Bureau, Mrs. Bass asserted that the number of fines given out for cannabis had grown by four times between the years of 1926 and 1927. This report sparked an investigation into the sudden increase in cannabis use by the Department of Pharmacology at the University of Chicago.

The investigation traced the origin of cannabis in the US to parts of Texas and New Orleans, where Mexican migrant workers had brought cannabis as it is known today into the country at the turn of the century (Bureau of Immigration, 1915-1930). In addition, cannabis was being exported from Havana, Tampico and Vera-Cruz (Walton, 1938). The states that saw the largest influx of Mexican immigrants during this time also became the first states to adopt anti-cannabis laws. The first state cannabis laws were passed by the Louisiana state legislature in 1927 against "loco-weed," the cannabis flowers that were dried, rolled into a cigarette and smoked, mostly by Mexican migrant workers (Walton, 1938). The use of cannabis was normalized in the Mexican culture, and many men suddenly found themselves at risk for massive fines and jail time. The conflict of how to classify cannabis had begun.

New state laws written in the early 1930's effectively placed social controls on the Mexican population in Texas, opening the doors for white laborers to control the agricultural job market (Taylor, 1931). Feeling pressured by the competition for jobs in the agricultural field, the white population sought out a way to control this new source of American labor (Sterling, 1999). This was similar to the earliest state narcotic laws in the late 1800's, attempting to control opium smoking by Chinese immigrants (Trebach & Inciardi, 1993). The supposed effect that cannabis had on the temperament of the Mexican immigrant—maniacal rage and sexual impulsivity—as stated during anti-cannabis hearings in Utah, Texas, Montana, Colorado and New Mexico in the mid 1930's (Bonnie & Whitebread, 1974). Adding to this was the plethora of police officers and federal employees who were now without jobs because of the end of prohibition of alcohol. The entire workforce that formerly enforced the prohibition of alcohol were now unemployed. Instead of adding to the Depression Era unemployment problem, a new illicit vice, cannabis use, was created to replace alcohol (Earlywine, 2002). This propaganda concerning who uses illicit substances, including cannabis, remains a technique for preventing drug use, further solidifying cannabis' place among "dangerous" illicit substances.

Besides Texas a major cannabis importation business was growing in the port of New Orleans. Ships would come up from Mexico and sell the cannabis on board in America for five times what the cargo cost at its origin. The interest in New Orleans was said to be because of the widespread cannabis use among the "native population," which at this time was composed of jazz musicians and people of color (Walton, 1938). Racial undertones exist in many attempts, past and present, to regulate illicit substances.

The first federal law against cannabis, the Marihuana Tax Act, was developed by Harry Anslinger, the Director of the Federal Bureau of Narcotics. One of the purposes of the

law was to aid in enforcing the Uniform Narcotics Act of 1932. Before cannabis was included in the Uniform Narcotics Act, there were no federal cannabis laws in the United States. However, by 1931, 22 states had enacted some type of cannabis restriction (Bonnie & Whitebread, 1974). To gain support for his law, Anslinger publicly proclaimed the dangers of cannabis use and touted cannabis as a dangerous narcotic that "enslaved" youth and aroused violence (Anslinger & Cooper, 1937). Before Anslinger decided that cannabis needed to be eradicated from American society, few Americans had even heard of the ancient plant (Bonnie & Whitebread, 1974; Speaker, 2001). When Anslinger decided that cannabis had to be eliminated, he knew that the success of his campaign largely rested in the hands of the American public. In order to gain the support of the public, Anslinger began a smear campaign against cannabis that portrayed the drug as an evil menace that caused a homicidal-like reaction in its users. Some argue that it was this campaign that ruined any chance of seeing the drug issue as anything but black and white, good and evil (Wisotsky, 1990). Anslinger may not have known it at the time, but his efforts were slowly removing cannabis from the realm of medicine, where it had existed for thousands of years, and placing it in a category of dangerous substances that need to be prohibited for the greater good. Anslinger began his campaign against cannabis by publishing *Marijuana: Assassin of Youth* in 1937. The report began with the tale of a young woman who committed suicide by leaping to her death as a result of smoking cannabis. Anslinger also told stories of others who had committed atrocious crimes while under the influence of cannabis. One such story involved a young man from Los Angeles:

> Suddenly, for no reason, he decided that someone had threatened to kill him and that his life…was in danger. Wildly he looked about him. The only person in sight was an aged bootblack (shoe shine). Drug-crazed nerve centers conjured the innocent old shoe-shiner into a destroying monster. Mad with fright, the addict hurried to his room and got a gun. He killed the old man, and then later, babbled his grief over what had been wanton uncontrolled murder. That's Cannabis! (Anslinger & Cooper, 1937, p. 153)

To add to the fear that he was instilling in the American public, Anslinger also made it clear that cannabis would make men rape young girls (Anslinger, 1937).

During the hearings for the Marihuana Tax Act, Anslinger relied on three pieces of evidence to prove the harmfulness of cannabis. First, Anslinger used the aforementioned newspaper stories asserting the maniacal tendencies of those high on cannabis. Second, Eugene Stanley, District Attorney of New Orleans, presented a study claiming cannabis's prevalence among the Louisiana prison population. The study, conducted by the Indian Hemp Drugs Commission, looked at the prevalence of cannabis use among the New Orleans prison population. The report itself was written by two New Orleans police officers and was not based on an empirically sound survey (Bonnie & Whitebread, 1974). Third, Temple University Pharmacologist James Munch presented a poorly designed empirical study testing the effects of cannabis on dogs. Although Dr. Munch concluded that cannabis caused degeneration in the dogs' brains, he also stated that only 1 in 300 dogs were sensitive to the cannabis. Furthermore, the study was never able to link the dog results to humans (The Marihuana Tax Act, 1937). The Marihuana Tax Act passed through Congress in 1937.

State legislators like Mrs. Bass now had the support of the Federal Bureau of Narcotics in their fight to control cannabis. The language of the Marihuana Tax Act is similar to the Harrison Act which controlled opium and cocaine. It requires anyone importing, selling or growing cannabis to pay an occupational tax and register with the Internal Revenue Service. Just like the Harrison Act, the Marihuana Tax Act made it unlawful to possess cannabis without a permit, or to transfer possession to someone without the proper papers (Harrison Act, 1914; Marihuana Tax Act, 1937). The first federal sentence handed down in New Orleans after the Cannabis Tax Act was passed occurred in the spring of 1938. Although the federal law was passed, penalties for cannabis varied across the states. By the end of 1937, nearly every state had a penalty for cannabis (Walton, 1938).

The media helped develop this societal fear surrounding cannabis. In 1937 a movie entitled "Reefer Madness" (originally titled "Tell Your Children") was released with the purpose of instilling Anslinger's anti-cannabis message into mainstream society. The movie begins during a PTA meeting where a high school principal is warning parents of the dangers of cannabis. The movie then tells a tale of a young man who is lured into an apartment where cannabis is being smoked. After he himself is intoxicated, he's framed for the murder of his girlfriend. The movie ends with the real killer (and regular cannabis smoker) being committed to an institution due to insanity brought on by smoking cannabis (*Reefer Madness*, 1937). Many newspapers wrote about the secrecy of the drug subculture by using the slang terms for cannabis in their articles and writing about secret "reefer parties" that were going on, furthering the division between mainstream drug use, such as alcohol or nicotine, and cannabis use (Chicago Tribune, 1929; Montana Standard, 1929; Rocky Mountain News, 1931, as cited in Bonnie & Whitehead, 1974).

This propaganda campaign was extremely successful, and cannabis use fell out of favor with the general population. However, resurgence occurred in the 1960's when the number of youth who used cannabis increased as young people protested against the Vietnam War (Goldstein, 1966). In 1965, 46% of new cannabis smokers were under eighteen, and 797,000 Americans used cannabis for the first time. That number rose to just over 3 million in 1971, with 46% of them minors. By 1976, 3.6 million Americans tried cannabis for the first time and 63% of them were under 18 years of age (Substance Abuse and Mental Health Services Administration, 2002). In a report released by the U.S. Department of Justice in 1972, the number of people who had tried cannabis in the U.S. in mid-1971 was estimated at 9% of the population over 11 years of age. Of this 9%, it was estimated that 3% used on a daily basis.

The response from policy makers was to describe the increase in use as an "epidemic." This led to the Rockefeller Drug Laws in the state of New York in 1973, which called for extremely long sentences for drug offenders. The new laws made life sentences a possibility for those found guilty of drug possession. Although the laws focused on hard drugs such as heroin and cocaine, the wording of the law also included hashish (resin oil from the cannabis plant) and strong varieties of cannabis. This meant that a person could go to prison for life for selling cannabis (Coughlin, 1993).

The Controlled Substances Act of 1970 had outlined a method for classifying the dangerousness of a drug so that sentences could be constructed accordingly. This was done through a system that called for drugs to be classified as "schedules". As previously mentioned, illicit drugs were scheduled based on their perceived harmfulness, addictive properties, and their potential as medicine. Cannabis was then and is currently a Schedule I

drug. A Schedule I drug is considered to have a high potential for abuse, no accepted medical use, and is deemed too dangerous to use even if under medical supervision. Another aspect is that scheduling limits research funds for drugs that are Schedule I, making clinical trials on medical cannabis difficult (Controlled Substances Act, 1970).

Although it seemed that the laws concerning cannabis were getting more stringent, there were also more liberal state laws that were starting to emerge. Less than two years after the Rockefeller laws were passed in 1973, Oregon became the first state to remove criminal penalties for the possession of small amounts of cannabis (Anderson, 1981). It was during this time as well that then President Richard Nixon declared the famous "War on Drugs" (Sterling, 1999). In 1971, the Nixon administration commissioned a group of researchers to write a report and make recommendations about the future of cannabis policy. The report, entitled *Marihuana: A signal of misunderstanding*, was released in 1972. This report made several suggestions for state and federal law concerning cannabis. On the federal level, the report suggested maintaining felony status for possession with the intent to distribute, as well as for cultivation, importation, and exportation. However, the report also concluded that private possession for personal use should not be an offense and public use should only be a misdemeanor. The state recommendations were similar, but added specifications for driving under the influence of cannabis and how penalties might vary for different amounts of cannabis seized in public (National Commission on Marihuana and Drug Abuse, 1972). Nixon rejected the report (Anderson, 1981). This response from Nixon was predicated by his assumption that soldiers returning from Vietnam would be addicted to heroin. Heroin use by soldiers in Vietnam had been publicized in the United States. Worried that the US would have to respond to a gigantic influx in heroin addiction once soldiers returned, Nixon planned for the worst and put priority into making sure that every returning addict had a treatment program available. What Nixon did not count on was that the heroin use by soldiers was highly situational and did not necessarily translate into a continuing addiction once they returned to the US. As a result, Nixon turned his attention to cannabis to justify the money and resources spent on heroin treatment. Cannabis became Nixon's symbol of rebellion and anti-war sentiment and he argued strongly that it was a dangerous drug. Therefore, accepting a report that questioned this opinion was not a possibility for Nixon (Massing, 1998).

States besides Oregon began to evaluate the pros and cons of their own cannabis laws. One such state was California, which, in May of 1974, produced a report written by the Honorable George Moscone and Senators Biddle, Beilenson and Marks entitled *Cannabis: Beyond Misunderstanding*. In this report, the Senators tried to decide what was best for California. The report states in general that although cannabis might possess some harmful qualities, this does not justify criminal punishment. The report further found that cannabis use is a private act and not a threat to the health of society. The argument for decriminalization seemed to achieve more support when President-elect Jimmy Carter stated in a message to Congress on August 2, 1977,

> Penalties against possession of a drug should not be more damaging to an individual than the use of the drug itself; and when they are, they should be changed. Nowhere is this more clear than in the laws against the possession of cannabis. (President's Message to Congress on Drug Abuse, 1979)

It seemed at this time as if cannabis prohibition might be coming to an end. However, in 1980 Ronald Reagan became President and the War on Drugs was revived and strengthened. More money than ever was allocated to the War, and most of it went to interdiction and law enforcement and not to treatment (Sterling, 1999). The Reagan administration spent $1.65 billion on the war on drugs in 1982 which rose to $6.66 billion by the end of his second term of office (Office of National Drug Control Policy, 1992). With mandatory minimum sentences for drug-related offenses and high budgets for interdiction as the main components of drug policy in the 1980's, the message sent to the public was that cannabis is a dangerous drug and society should be protected from it at all costs. However, during a hearing to determine whether cannabis should be moved from a Schedule I to a Schedule II drug, the Chief Administrative Law Judge for the DEA, Francis L. Young asserted,

> Cannabis, in its natural form, is one of the safest therapeutically active substances known. The provisions to the Controlled Substances Act permit and require the transfer of cannabis from Schedule I to Schedule II. It would be unreasonable, arbitrary and capricious for the DEA to continue to stand between those sufferers and the benefits of this substance. (U.S. Department of Justice, 1988, p. 57)

This stark contradiction between the reports coming out of Washington and the federal policy on cannabis would continue to muddy the policy waters for decades to come, as cannabis was about to re-enter the therapeutic scene in a big way.

A medicine once again.

Modern US medical cannabis distribution began in 1976 through the Investigational New Drug (IND) compassionate access research program. Robert Randall had been diagnosed with glaucoma and found cannabis to be helpful in relieving intraocular pressure. Claiming medical necessity, Randall went to court over his right to use cannabis since, in his and his physician's opinion, available medical treatments had not been successful. Randall won the case and became the first federal medical cannabis user in 1978 (Russo et al., 2002). This federal program accepted seriously ill participants and gave them access to up to nine pounds of cannabis per year. The application process was complicated and only 6 patients were accepted into the program between 1976 and 1988. However, as HIV continued to spread across the US in the 1980's, the compassionate access program began receiving high volumes of applications from AIDS patients. In 1989 alone, 34 new patients were granted access into the program. In 1991 the program was suspended due to the contradiction between access to medical cannabis and the Presidential stance on drug prevention. A year later the program was discontinued. Today, four patients from the compassionate access program remain. They continue to get medical cannabis from the federal government (AFSA, 2012).

The adaptation of cannabis into the pharmaceutical market as a medicine used to treat the symptoms of a variety of ailments has muddied the cannabis debate. Some of the illnesses and conditions where cannabis has been shown to be beneficial are: nausea and vomiting, muscle spasticity, eye pressure due to glaucoma, wasting syndrome associated with HIV/ AIDS, muscle tremors, migraine headaches, depression, seizures, insomnia and chronic pain (Chang et al., 1979; Clifford, 1983; Crawford & Merritt, 1979; Foltin et al., 1986; Grinspoon

& Bakalar, 1995; Malec et al., 1982).

The use of medical cannabis went from the small IND program to state level policy when California became the first state to legalize cannabis for medical purposes in 1996. Between the years of 1996 and 2012, eighteen states plus Washington DC passed legislation allowing cannabis to be used for medical reasons (National Organization for the Reform of Cannabis Laws, 2012). The Federal government, however, did not accept the return of cannabis into a medical context. The legal battle over medical cannabis began in 1996 when, even after California voters approved medical cannabis, the federal government threatened to revoke the medical licenses of any physician who recommended cannabis to their patients. AIDS specialist Dr. Marcus Conant led a group of doctors and patients in a lawsuit against the federal government claiming that this violated the First Amendment. The case was eventually brought before the 9th Circuit Court of Appeals where the doctors won. The court ruled that doctors could not be punished for recommending cannabis to their patients or discussing its possible benefits with them. What doctors could not do was to help patients obtain cannabis (Conant v. Walters, 309 F. 3d 629 Court of Appeals, 9th Circuit, 2002). Now that doctors were protected, patients sought the same from the government. Angel Raich sued Attorney General John Ashcroft in 2003, seeking an injunction against future arrests or prosecutions. The case was again brought before the 9th District Court of Appeals where the court ruled that in states where it had been approved it was legal for medical cannabis patients and caregivers to grow and possess cannabis as long as it was not transferred over state lines. The federal government appealed that decision and won (Gonzales v. Raich (03-1454), 545 U.S. 1, 2005).

Despite the barriers put in place by the government to prevent cannabis research, several initiatives have furthered the scientific understanding of cannabis. First, since being formally recognized as a scientific research society in 1991, the International Cannabinoid Research Society has seen its membership grow from 50 in 1991 to nearly 500 in 2012 (International Cannabinoid Research Society [ICRS], 2012). Second, the International Association for Cannabis as Medicine was founded in 2000. This association publishes a bi-weekly newsletter and bulletin. Furthermore, the association has been working with Haworth Publishing for the past 10 years publishing a peer-reviewed journal, *Journal of Cannabis Therapeutics*. Finally, universities are becoming involved in the investigation of cannabis. In 2001, the University of California founded the Center for Medicinal Cannabis Research (AFSA, 2012), and in 2012, Humboldt State University founded the Humboldt Institute for Interdisciplinary Marijuana Research.

Unfortunately, even as the scientific evidence of the medical benefits of cannabis is mounting, cannabis remains a Schedule I substance which, by definition, has no accepted medical benefit. This classification has served to prohibit research with human beings using the whole plant. Instead, much of the research has been relegated to animal models with synthetic cannabinoids. However, a shift in how consumers view health care has opened a door for the raw cannabis plant—that of herbal and dietary supplement in the realm of Complementary and Alternative Medicine. Modern cannabis therapeutics returns to the use of the plant as a natural remedy.

Complementary and Alternative Medicine (CAM) can be defined as a group of health and medical practices used in conjunction with (complementary) or instead of (alternative) conventional health and medical practices (National Center for Complementary and Alterna-

tive Medicine [NCCAM], 2012). Examples of CAM include the use of medicinal herbs and plants such as Echinacea, physical treatments such as acupuncture and mindfulness practice such as meditation. For chronic pain related conditions the use of complementary treatments, such as acupuncture in conjunction with conventional medications for pain can be more effective than conventional treatments alone. Additionally, for those individuals currently prescribed multiple medications, concerns over chemical dependence and the mounting costs of medications have led some to seek out alternatives to more conventional methods (Abrams, Couey, Shade, Kelly, & Benowitz, 2011). A 2008 survey conducted by the National Center for Complementary and Alternative Medicine reveals that 38% of US adults report using CAM treatments The most commonly reported CAM treatments were the use of natural mineral and vitamin products, followed by deep breathing and meditation. The most common ailment for which CAM was used was chronic pain. This is also the most common reason for medical cannabis use (Artus, Croft & Lewis, 2007). Raw cannabis is more in line with the herbs and plants utilized through CAM than it is with the conventional medications they complement and replace. However, cannabis in its raw form is only one incarnation of it as a modern day therapeutic agent. Conventional medications utilizing synthetic and natural cannabinoids have begun to emerge. The phytocannabinoid based medication Sativex was developed by GW Pharmaceuticals, a UK based company. Sativex delivers a dose of cannabinoids via a mouth spray and has been approved to treat MS. It is in Phase III Clinical Trials as a treatment for cancer and it is being investigated as a treatment for metabolic disorders, epilepsy and psychiatric conditions. Sativex is approved for use in the UK, Canada, New Zealand and Spain, with approval pending in Germany, Italy, Sweden, Denmark, Austria and the Czech Republic (GW Pharmaceuticals, 2012).

The medications being developed by GW Pharmaceuticals and others are different than the use of the raw plant material because they contain combinations of cannabinoids at extremely high doses manipulated by scientists to produce a specific physiological reaction. The raw plant, on the other hand, has more of a breadth vs. depth effect, blanketing the system with a dose of cannabinoids driven by the strain of cannabis ingested. The effect of this type of ingestion tends to be palliative rather than curative, which is the ultimate goal in the development of cannabinoid-based pharmaceuticals. This emerging duality calls into question the applicability of a single regulatory track for cannabis. While the raw plant will never meet with criteria for FDA approval, the clinical applications for cannabinoid-based pharmaceuticals will negate them from being properly regulated and distributed by the herbal and dietary supplement industry and dispensaries. So, how can policies maximize the benefits of both the palliative and curative properties of cannabis? Can we create a regulatory framework that appreciates and addresses this duality? I believe we can, but first we must recognize the difference between the use of the raw plant and the use of cannabinoid-based medications.

Moving Forward by Moving Apart

The duality of cannabis as herb and cannabis as cure is slowly tearing the issue apart. On one side there is cannabis as wellness, whether it is for therapeutic or recreational purposes. This herbal supplement model is supported by those in the medical cannabis industry who view the use of the cannabis plant in its many forms (flowers, oils, fibers) as vital for maintaining a healthy balance within the body and for the health of the planet. This

model most relates to the growing use of CAM. Individuals looking for alternatives to pharmaceutical drugs (from Oxycontin to Tylenol) are turning to acupuncture, chiropractic work, and herbal supplements such as cannabis. On the other side there is cannabis as a cure. The discovery of the endocannabinoid system in the 1990's fueled research into the role of cannabinoids in the regulation of almost every bodily system. Pre-clinical research with animal models shows that cannabinoids such as THC and CBD have the potential to mitigate diseases such as cancer, HIV, Alzheimer's, and MS (Abrams et al., 2003; Guzman et al., 2000; Ramirez et al., 2005; Wade et al., 2006). Marinol, a synthetic version of THC, has been the only cannabinoid-based medication on the US market. Some patients do not like Marinol because they claim it is too strong (Musty & Rossi, 2001).This may be because it lacks the balance of the whole plant profile. Sativex is the one drug with the whole plant profile that is currently on the market, but not, as referenced earlier, in the US.

Given the context of drug policy and beliefs about cannabis and its uses, moving ahead with an effective regulatory scheme is difficult but not impossible. It will take, however, a radical shift to bring cannabis back to its roots as a complementary and alternative medicine. As previously discussed, cannabis in its raw form has been shown to have very powerful palliative effects in the treatment of nausea and vomiting, muscle spasticity, eye pressure due to glaucoma, wasting syndrome associated with HIV/AIDS, muscle tremors, migraine headaches, depression, seizures, insomnia and chronic pain (Chang et al., 1979; Clifford, 1983; Crawford & Merritt, 1979; Foltin et al., 1986; Grinspoon & Bakalar, 1995; Malec et al., 1982). At the same time, cannabinoid-based medications have shown promise in impacting the state of the disease itself (GW Pharmaceuticals, 2012).

Herbal and dietary supplements used for the purposes of symptom management, life enhancement and overall health are approved and regulated in a different manner than FDA-approved medications listed in the US Pharmacopeia. I assert that in order to move forward with the regulation and benefit maximization of cannabis, two regulatory schemes must be sought out. The herbal and dietary supplement market is regulated by the American Herbal Products Association (AHPA) and the pharmaceutical market is regulated by the FDA. Both paths were developed specifically for products whose characteristics fit a certain profile. For herbal products, it is ensuring that plants grown and consumed for the purposes of improving health are done so safely and with as much standardization as possible given the living nature of plants. Regulations are centered on cultivation practices, thresholds for pesticides and molds, and responsible labeling and distribution (AHPA, 2012). This regulatory scheme is very applicable to raw cannabis. The FDA framework for regulation focuses on testing a chemical's ability, through a drug delivery system, to impact a physiological mechanism for the purposes of improving health. The focus is on safety, efficacy and standardization. For many conditions, both the herbal supplement model and the medication model can be utilized to achieve a truly holistic health care plan. One example is the treatment of addiction, where both the cannabis herbal supplement and cannabinoid-based medicine model apply, but in different ways.

The Duality of Cannabis and the Treatment of Substance Dependence

In the treatment of substance dependence, both the palliative and curative properties of cannabis can be utilized. This holistic approach to treating the symptoms of dependence while addressing the neuroscientific aspects of addiction might be more effective than current treatments which tend to favor one or the other.

Herbal supplement.

As an herbal supplement, cannabis in its raw form can be used as a psychoactive behavioral substitute for the drug of addiction. I recently conducted a study of eight medical cannabis patients using cannabis as a substitute for methamphetamine. Patients reported that cannabis facilitated a mind/body connection which helped them tune into their personal difficulties rather than trying to numb them (Reiman, 2012). Cannabis was also reported to be helpful with the nausea, seizures and other effects of withdrawal. Finally, the use of cannabis as an herbal supplement in its raw form can assist with harm reduction by helping patients get through moments of craving, to stay within their own boundaries of drug use, prevent relapse, and to move them from a more harmful substance, such as alcohol, to a substance that poses less harm like cannabis (Reiman, 2007; 2009).

Cannabinoid medication.

Cannabinoid-based medications for substance dependence are also being developed. These medications' effects are similar to patient reports of the raw product, but involve much higher concentrations of cannabinoids, with profiles developed to initiate a specific physiological reaction. The endocannabinoid system may be responsible for modulating the behavioral and motivational effects of drugs like nicotine (Balerio et al. 2006; Damaj & Lichtman, 2011; Muldoon et al., 2011). Blume et al. (2011) and Ramesh et al. (2011) suggest that cannabinoid receptors might interrupt signaling in the opioid receptor systems, affecting both cravings for opiates and withdrawal severity. In a study by the New York State Psychiatric Institute, Aharonovich et al. (2006) found that people with cocaine dependence and comorbid Attention Deficit Hyperactivity Disorder who were also cannabis users were more successful than other patients in abstaining from cocaine use. In an earlier study Labigalini Jr. et al. (1999) also noted this effect on people with a dependence on crack cocaine, reporting that 68% of the 25 subjects who self-medicated with cannabis in order to reduce cravings were able to give up crack altogether. Furthermore, recent research by Maitra et al. (2011) suggests that cannabinoids might protect the liver from the effects of heavy alcohol use. Liput et al. (2011) and Devkota and Mukhopadhyay (2011) suggest a neuroprotective function of cannabinoids during alcohol withdrawal after heavy alcohol use. Various methods for administering THC for the treatment of alcoholism have been explored by Howard et al. (2011), including transdermal administration.

Cannabis has the potential to play a role in the treatment of addiction as both a palliative and a curative agent. However, as long as its status as an illicit drug prevents policy from looking beyond this label, potentially beneficial consequences of cannabis use may never see political light. Caught in the middle between the cannabis as wellness and cannabis as cure models are the providers of cannabis, dispensaries.

Clinical Context for Cannabis as a Treatment for Substance Dependence: The Role of Dispensaries

If cannabis were to take two regulatory tracks, and cannabinoid-based medications were developed in labs for administration through pharmacies, then where would the herbal product go? Currently, medical cannabis dispensaries have emerged as the purveyors of the herbal form of the product. From the CAM perspective, this makes sense and in their role in treating patients with addiction, dispensaries would offer alternative therapies such as acupuncture and meditation, along with the use of cannabis as flowers, tea, edibles, etc. as a

method of easing the mind and changing behaviors while reducing harm. This is the model currently exhibited by dispensaries such as Harborside Health Center in Oakland, California and the San Francisco Patient Resource Center (SPARC). The latter currently offers Chinese Medicine counseling, acupuncture, acupressure, meditation, and support groups for women, veterans, and those interested in harm reduction.

From the FDA-approved medicine perspective, addiction treatment via cannabinoid-based medications could include prescribed medicines such as those delivered by mouth spray (e.g., Sativex) to prevent cravings, or an IV solution containing cannabinoids administered to an alcoholic in the hospital during detox. These interventions might be better suited for a hospital setting than a dispensary. Perhaps utilization would be both inpatient and outpatient during the course of treatment such as with addiction treatment where inpatient care is often followed by palliative, outpatient services.

There was a time when most of what was known about the experience of using cannabis was anecdotal. This pattern is repeating itself via patient reports about therapeutic effects. Medi-Cann, a clinic of physicians who conduct medical cannabis patient evaluations, randomly selected 175 charts from patients seeking recommendations. The sample was 69.5% male. The mean age of the sample was 42.2, with ages ranging from 19-81. Half of the sample (50%) reported that they were currently working, and 68.2% had health insurance. When looking at the types of conditions reported by the sample, 52.3% reported a physical condition; 2.9% a mental health condition; and 44.8% both. Patients were asked about the use of cannabis as a substitute for alcohol, illicit or prescription drugs. Their answers echo reasons why some people choose CAM treatments. Of the 68.9% who reported using cannabis as a substitute, 1% chose cannabis because it was cheaper than other substances, 14.4% chose cannabis because it was more effective for them than other substances, 24% reported that cannabis had fewer side effects than other substances, 1% used cannabis due to concerns over their long term use of pharmaceutical drugs, 19.2% were looking for a general reduction in other substances, and 40.4% gave no reason. When rating how effective cannabis was at treating their symptoms, 81.1% reported it as very effective, 18.3% said it was effective, and .6% reported it as somewhat effective. When asked if they needed to use more cannabis over time to achieve the same effect, 22.8% said yes; 25.5% reported wanting to reduce their use, and among those who wanted to reduce, 85.9% were able to. Speaking directly to the use of cannabis for both wellness and medicine—palliative and curative—the benefits reported by patients fell across all categories. The benefits most commonly reported were pain relief (85%); sleep (77.7%); relaxation (50.9%); prescription medicine substitute (46.3%); and anxiety (46.3%). The benefits least commonly reported were anti-diarrhea (3.4%); anti-itching (3.4%); prevent seizure (3.4%); and prevent involuntary movement (5.7%). The bothersome effects most commonly reported were dry mouth (29.7%); hunger (23.4%); and mood disturbance (17.7%). The bothersome effects least commonly reported were confusion (none); dizziness (.6%); palpitations (.6%); and movement problems (.6%). The benefits reported by patients fit both the wellness model (relaxation, sleep) and the curative model (prescription medicine substitute, anxiety, prevent seizure/involuntary movement) (Reiman, n.d.). Additionally, the relationship between disease and symptoms such as anxiety and insomnia can be covered under the dual cannabis treatment model.

Currently, there is a push in the realm of the raw cannabis product to provide more detailed information for patients regarding the cannabinoid and terpene profiles contained in specific cannabis plant strains. This is an attempt to place some of the knowledge born in the

synthetic cannabinoid research on animals into the hands of people using the raw product. The lab analyses currently being conducted give cannabinoid and terpene information to patients and screen for molds and other contaminants to help ensure a safe product. Furthermore, Good Manufacturing Practices similar to those used for other herbal medicines and supplements are being developed and implemented by those who have cannabis gardens to ensure the botanical safety of the plant for the consumer and to pinpoint issues in cultivation that might lead to an unsafe product. These developments have done much to move cannabis as a raw product into a regulatory scheme alongside other herbal medicines and supplements.

Conclusion

While the palliative and curative uses of cannabis should be harmonious, these two sides have been pulling the cannabis policy issue farther and farther apart against a backdrop of public confusion over what this plant is: drug, medicine, supplement, food? This confusion is reflected in the disagreements over cannabis regulation and legislation. There are three points that meet the herbal supplement and cannabinoid medication models in the middle: 1) cannabis in its many forms has the potential to establish balance and homeostasis in the body, as evidenced by the role of the endocannabinoid system in functions such as metabolism (Bowles et al., 2011) whether this is to maintain wellness or address disease; 2) stress relief and relaxation is a legitimate medical use, given the research on the role of stress in the development of disease (Andersen, Kiecolt-Glaser, & Glaser, 1994); and 3) points one and two do not mean that the entire family of cannabis products and preparations should be regulated the same way. Valerian and Valium are not regulated in the same way though both are relaxants. The attempt to include both sides in any one policy is futile because the avenues for regulating herbal supplements and FDA-approved medications are very different. If cannabis policy is to succeed in a way that honors the complexity of the plant and its many forms and uses, each camp might have to support each other and learn from each other, but head their own way. These treatments are complimentary, but they are not the same and should not be regulated the same way. It muddles the message and inhibits the use of cannabis in practice. Medical doctors are afraid of using a plant in their conventional medicine treatments and CAM folks shudder at the thought of an FDA-regulated pharmaceutical. A policy does not exist that would satisfy both these parties. This is unfortunate, as there are a myriad of practice situations that would be optimal for both, including the treatment of addiction.

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