



the **Rolling Times**

Jhoana Infante, Miski Abdi, Stuart Key & Melissa Chimwaza
UCLA Institute of Society & Genetics 108



A NOTE ON OUR ZINE

In the Society and Genetics 108 seminar, our group was tasked with identifying and analyzing a real world problem at the intersection of biology and society. We chose to focus our project on the legalization of marijuana in California because of the multidimensional aspects to this issue.

Our intent is to both inform and provide resources for those interested in learning more about the conflicts surrounding marijuana legalization. By engaging in our zine, you have the opportunity to consider this issue from multiple perspectives, consider the social inequities that are ongoing, and feel empowered to engage with this issue.

Anyway, we hope you enjoy this one.

CONTRIBUTORS

JHOANA INFANTE

LEGALITY

Where is CA now?
True or False
Case Study on Corvain Cooper
Criminalization of Marijuana
Politics of Decriminalization &
Prohibition

MELISSA CHIMWAZA

ECOLOGY

Reflections Pages
Timeline of Marijuana
Destigmatizing Marijuana
Green Grower Spotlight
Community Resources
Going Green?

MISKI ABDI

SOCIAL ATTITUDES

Interview with Samira
Interview with Cody
Interview with Rosa
What Does Cannabis Do
Medically
The Future for Marijuana
Research
The Economic Benefits of
Marijuana
Solutions to Regulation

STUART KEY

MEDICINE & HEALTH

Setting the Problem
Understanding the
Science
Marijuana and Public
Health



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Consider the ideas you have on marijuana. What kind of connotations do words like weed, cannabis or marijuana have for you? Do you have thoughts on people who use marijuana? How informed do you consider yourself on the politics of marijuana? Take a moment to journal some of your thoughts, feelings and questions. This page is meant to help track how this zine has informed and altered your perceptions. There are no right or wrong answers; just multiple stories to be told. This is the opportunity to tell yours.

The background of the page features several stylized human silhouettes. One silhouette in the center is filled with a solid blue color, while others are outlined in black. In the bottom left, there is a silhouette filled with a solid red color. The overall aesthetic is minimalist and graphic.

DESTIGMATIZING MARIJUANA USE

at the intersection of

RACE & WEED

In "Examining the Relationship between the Physical Availability of Medical Marijuana and Marijuana use across Fifty California Cities" Bridget Freisthler and Paul J. Gruenewald conduct a study in which CA residents self reported their consumption of marijuana. In their conclusion, they find that typically white males reported themselves to be life-long users of marijuana more frequently than other demographics.

This section aims to explore these results further through the lens of consumer behaviors based on race. In our longer essay, the racialized criminalization of Black and brown people will be more thoroughly explored. This serves as a preliminary glance at how one's race may impact their consumption & attitudes.

For this section of the zine, a google form was sent out with five questions that aimed to understand the attitudes marijuana consumers have towards their own consumption. This was inspired by the findings of the Freisthler & Gruenewald paper.

Although the paper itself was not directly about race and marijuana consumption, the sampling method stratified respondents by demographics such as race and gender. This brought to light some questions about why white males considered themselves to be life-long users of marijuana over other groups.

First, is this trend the result of dispensaries and legal marijuana being more accessible in predominantly white communities? Because we were not interested in understanding the geographic spread of storefronts, we were led to asking a second question.

The second question relies on the principle that mass incarceration has caused marijuana to be more stigmatized in communities of color. Thus, it is less likely for Black and brown to use marijuana as often and for as long as white people. Essentially, the concept of a lifetime user denotes a certain level of comfort with marijuana usage. However, in order to acquire the proper medical recommendations, renew them regularly, and have the access to safely purchase

and consume marijuana, a person must have a certain level of social mobility or privilege.

The survey was sent out and asked respondents to anonymously share their consumption habits and attitudes.

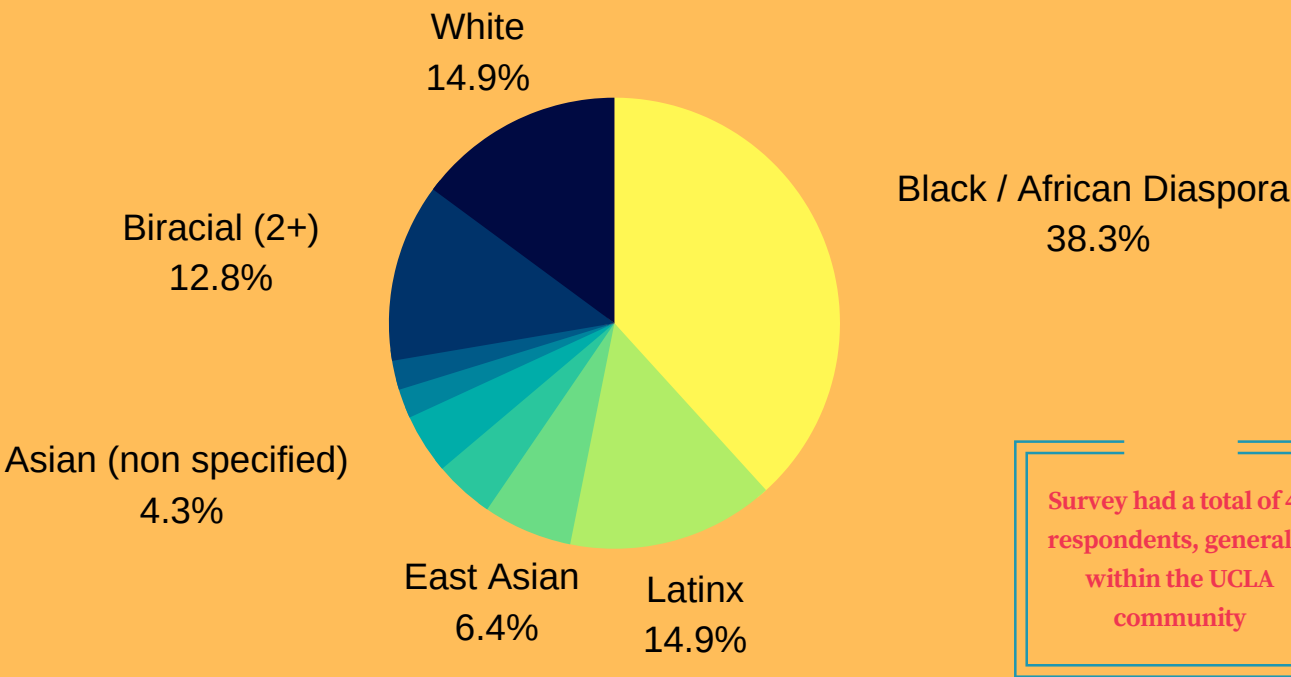
This survey has limitations, as the questions were brief and the number of respondents is not enough to make any statistical claims. This survey, instead aimed to shed light on some of the concerns and attitudes held by marijuana users in the UCLA community.

By graphing their responses, we can begin to see how our current sociopolitical climates may affect marijuana user's behaviors and perceptions of themselves.

We do not aim to encourage or discourage anyone's consumption of marijuana, we solely want to inspire others to ask more questions and create their own dialogues.

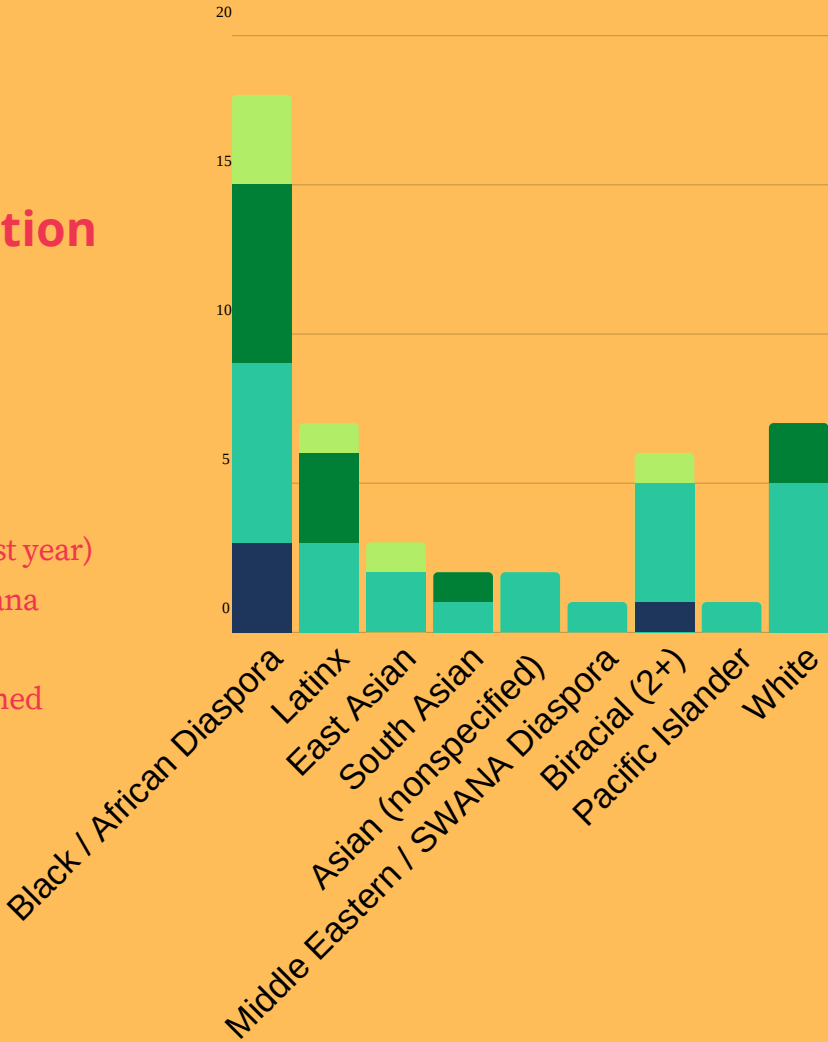
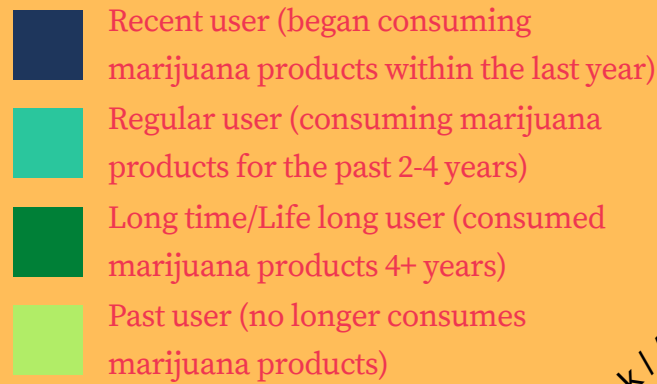


Self Reported Racial/Ethnic Demographics of Survey Respondents

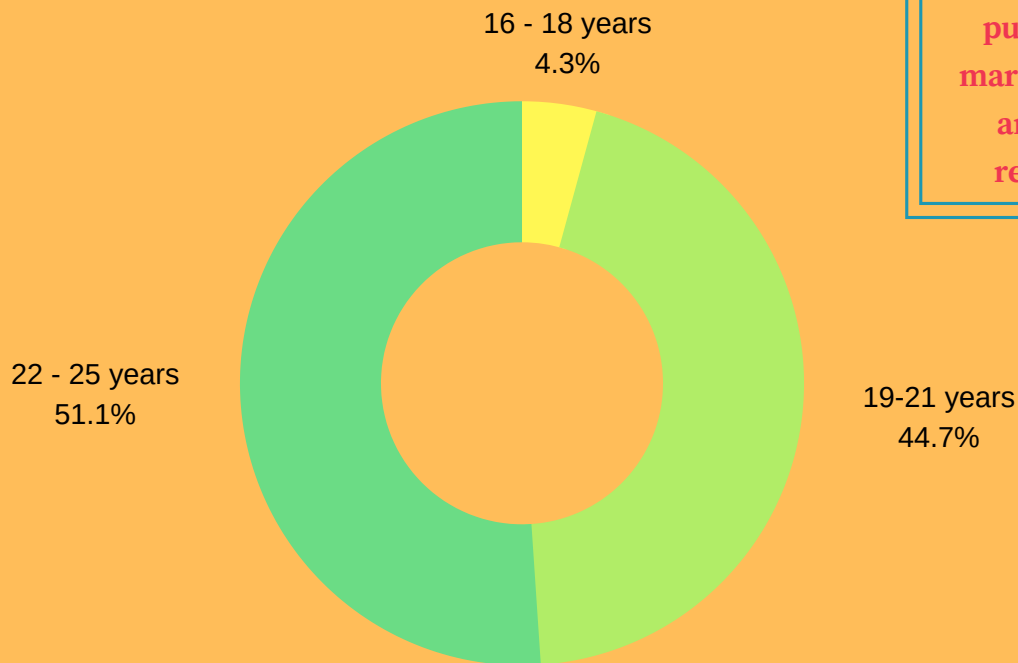


Survey had a total of 47 respondents, generally within the UCLA community

Self Reported Consumption by Race/Ethnicity

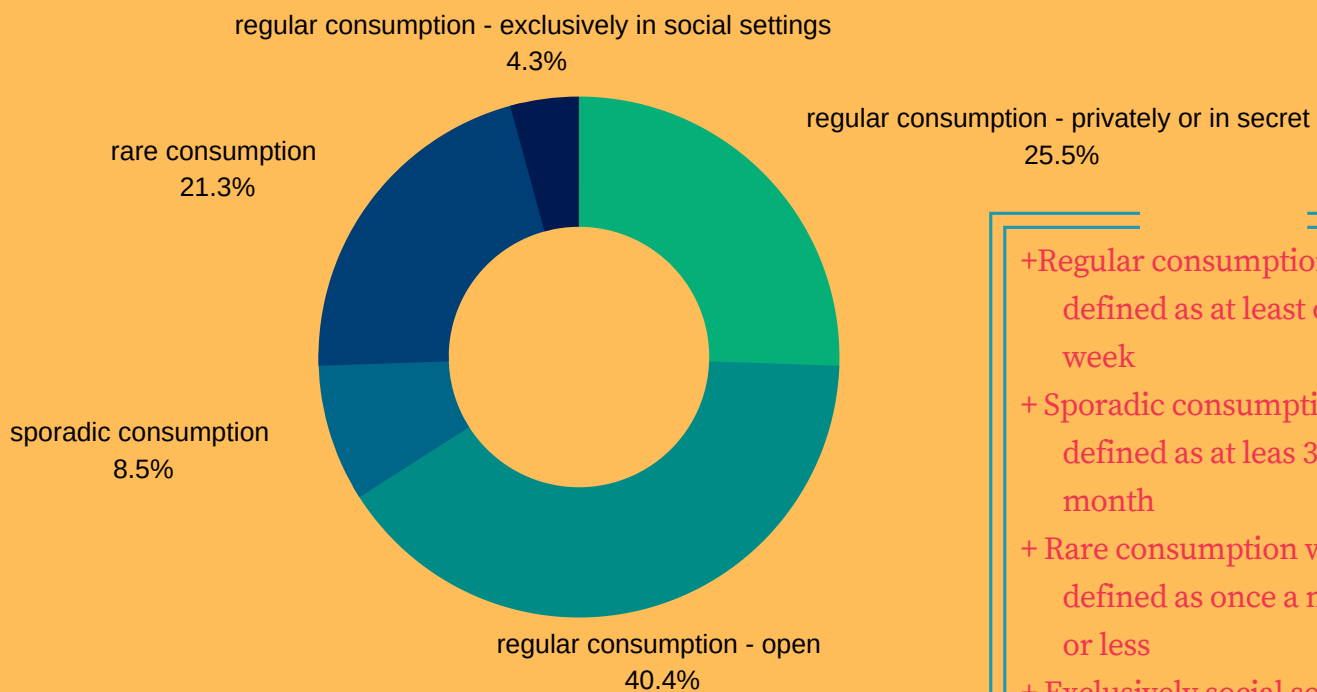


Self Reported Age



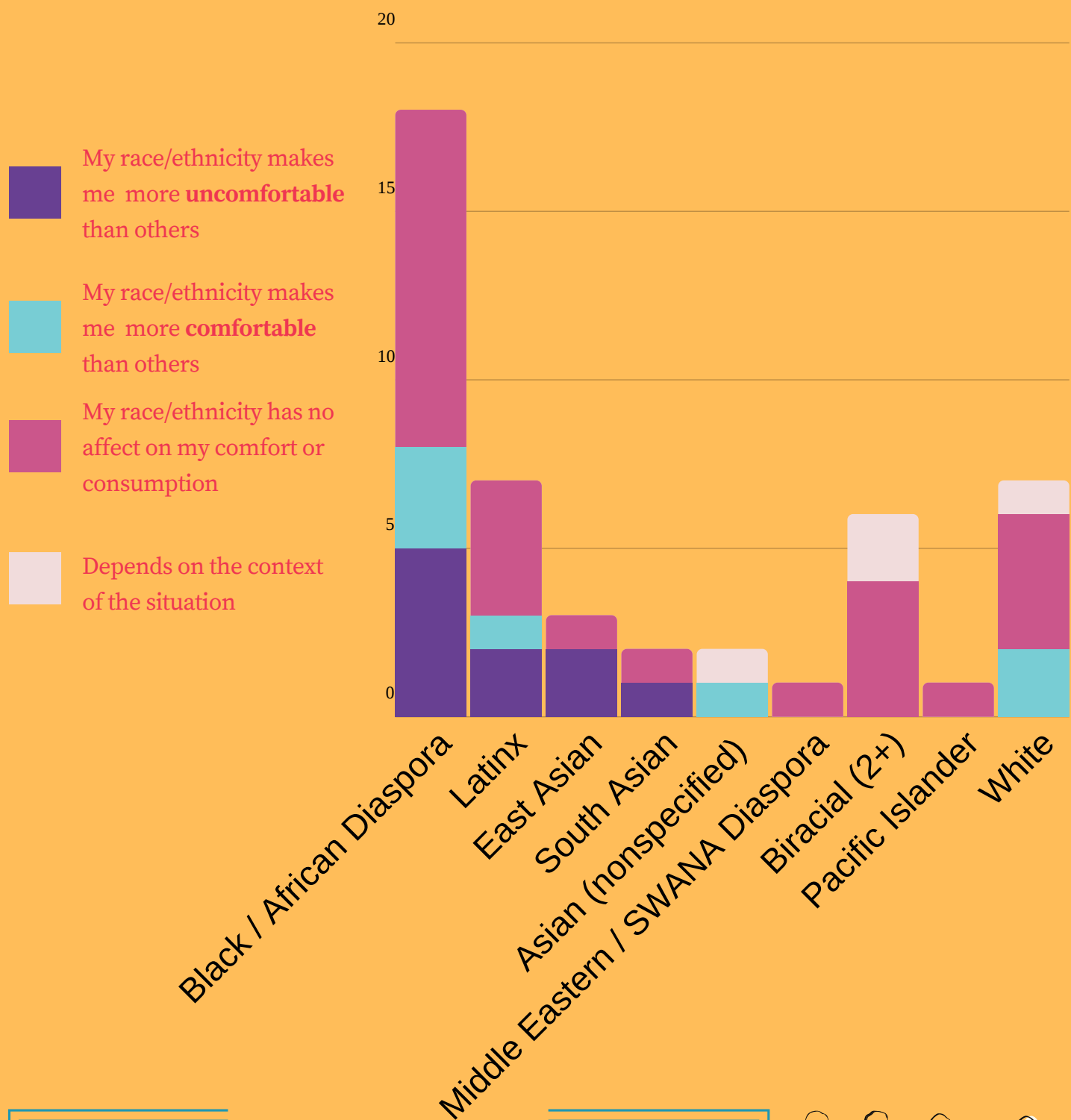
In CA, the legal age to purchase medical marijuana is 18 years and 21 years for recreational use

Self Reported Consumption Behaviors

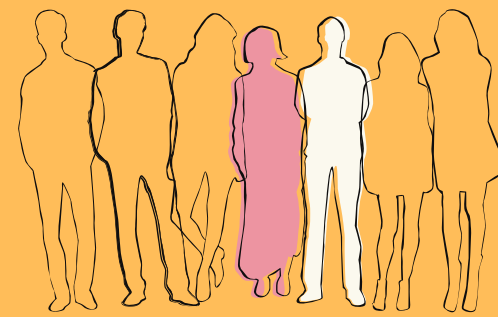


- + Regular consumption was defined as at least once a week
- + Sporadic consumption was defined as at least 3 times a month
- + Rare consumption was defined as once a month or less
- + Exclusively social settings indicates the user does not consume marijuana products alone

Self Reported Comfort with Marijuana Consumption by Race/Ethnicity



When asked what kind of situation would affect their comfort, respondents who said "depends" cited family members, international travel, and police presence all as factors that may affect their comfort



In the exploration of this data through the online survey, we found interesting patterns in the UCLA community with regards to marijuana consumption. Our results showed that of the surveyed group, most people, regardless of racial background, feel comfortable consuming marijuana openly. The hypothesis based on the Freisthler and Gruenewald study aligns with the finding that no white respondents felt more uncomfortable than other groups. However, Black respondents had the highest proportion of people who also felt that race did not affect their consumption. This confounds our previous notions and complicates the narratives of who can and can't consume marijuana. Do you have underlying assumptions about your race or other races when it comes to marijuana? Feel free to use the space below to explore some some of the content that surprised you, made you ask questions, and made you rethink how you view and interact with marijuana users.



Setting the Problem


Very few drugs have as complex a social and medical history as marijuana. Although still a Schedule I prohibited substance, political movements to legalize marijuana have achieved success at the state level and now it is commonly used both medically and recreationally across the United States. However, the legalization of marijuana has not ended debate on the issue but instead opened up many varied questions. The science behind its effects and medicinal potential is not comprehensive or conclusive, the environmental effects are only beginning to be understood, and the legal and political issues are contentiously debated. Nationwide, thousands remain convicted for use of a drug that is now legal and politicians struggle to offer regulations that effectively promote public health and economic benefits without perpetuating issues of social justice and racial inequity. A useful and applicable case study is the large and diverse state of California, where voters passed the Adult Use of Marijuana act in 2016. Four years later, the illicit industry still remains dominant over legal ventures, and regulations are only in their infancy. Despite these challenges, there are still many opportunities for marijuana to serve as a public benefit. Effective regulations have the potential to affect California's natural environment, state economy, and the health of marijuana consumers across the nation. However, it is important that any regulations that are put in place have a central focus on reducing barriers in academic and medical research, prioritizing social justice by ameliorating past harms, and transitioning the underground industry into an open and legally operating one.






Tricky Transition:



A Closer Look at Legalized Marijuana & the Challenges with California Regulation

Abstract:



In 2016, California became one of ten states to legalize the recreational use of marijuana. As the national attitudes begin to shift in favor of marijuana legalization, questions arise as to how states should navigate regulating the substance while it is still illegal under federal law. California in particular is a state of interest due to the high volume of marijuana that is grown in the states Northern Coastal region. Legalization in California has brought to light concerns regarding general public health, medical and academic research, environmental impact, and ever evolving social climates. This essay aims to analyze the transition California has undergone to better understand the challenges law makers face with creating effective regulations that can reign in the illicit industry and convert it into a safely operating legal enterprise. Our essay draws on historical context to provide a more thorough understanding of the stakeholders and conflicts within the marijuana industry. This historical lens also provides us with the opportunity to propose more effective regulation that can repair some of the harm caused by criminalization and mass incarceration in the state. This essay is broken into four major sections:





- The Root of the problem -- historical background on laws
 - Where is CA Now? -- present concerns regarding health & research
 - Going Green? - environmental impact analysis
 - Understanding the Science -- biomedical research
 - Solutions to Regulations -- proposed changes for the future
- 
- 






The Root of the Problem



Criminalization of "Marijuana"




Marijuana legalization has had a difficult transition into its implementation. Many of the obstacles that make legalization of marijuana so challenging are rooted in a history of racialized criminalization. In 1915, California became one of the first states to prohibit the use of marijuana(1). The prohibition of marijuana was seen as a political strategy to target Mexican migrants(2), rather than a direct public health outcry based on marijuana's health consequences. The influx of Mexican migration into the United States (US) can be traced back to the Mexican Revolution which occurred from about 1910 - 1920. Mexican people brought over, what they called "marihuana," or cannabis, for medical use and healing practices. However, because "marihuana" was an unfamiliar word to white Americans, the media used it as an opportunity to spread fear of it and to paint a false narrative of Mexicans being disruptive, and politicians did not want the white population to start using Marihuana, although "cannabis," as they knew it, was already used for medicinal purposes(3).








Since its criminalization Black and brown people were disproportionately incarcerated for marijuana possession charges. In California, for example, between 1990 to 2009, the arrest rate for marijuana possession tripled in Latino teenagers. By 2009 Black and Latino people collectively constituted 57% of California's marijuana possession arrests, even though they made up only 44% of the state's population(4). It is important to note that the majority of the marijuana possession arrests were from Latinos(5), however Black people are the most disproportionately affected, since they constitute much less of the California population(6).



This brings the ethical dilemma of marijuana legalization and its taxation: the state government is now going to be generating revenue from a drug that has negatively impacted the lives of Black and brown people, and therefore constitutes a responsibility on the state of California to be able to bridge the gap for the Black and brown people who were targeted during the war on drugs, and have since faced recurrences with the justice system, or difficulties reestablishing themselves back into society if they were convicted of a felony or misdemeanors.

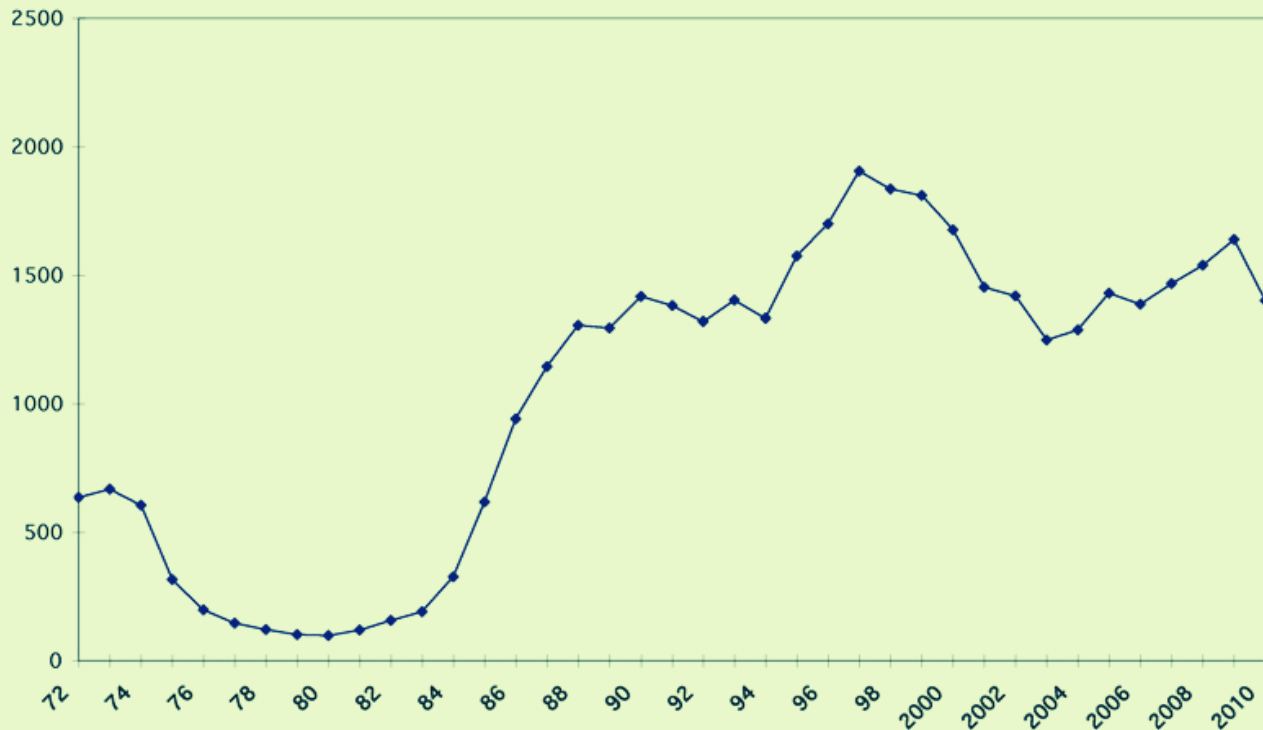


In the following sections we will give a brief history of the politics of marijuana's criminalization and decriminalization period, and address how this ethical dilemma complicates its transition of legalization.



The Politics Of Prohibition and Decriminalization

Marijuana Prisoners in California: 1972-2010






source: <https://www.canorml.org/judicial/california-arrest-and-prisoner-data/>



The peak prohibition period for marijuana was between 1961-1968, when a mandatory one year prison sentence was required for a simple marijuana possession charge(7). Meanwhile, the U.S. began to be more actively involved in the Vietnam War during this time, which caused many anti-war protests nationwide(8), especially in California. Marijuana became associated with these protests, because protesters were often smoking marijuana during their demonstrations. This led to an increase of white youth incarceration, which then increased the pressure to liberalize marijuana, because it was causing the arrest of citizens that would have normally not been arrested. Thus, in 1968 Ronald Reagan, who was the governor of California at the time, repealed the mandatory one year sentence for marijuana possession. Proposition 19 in 1972 would have removed penalties for the possession and cultivation of marijuana by adults for personal use but it was unsuccessful. There was, however, a "drug diversion program," that allowed first offenders charged with possession to participate in a drug education/treatment program so to divert them from the criminal justice system. This was also signed into law by then Governor Reagan.



The Politics Of Prohibition and Decriminalization



During this same year, there was a bill that would have repealed the “wobbler”- a law that made simple possession by first offenders became punishable as either a felony or a misdemeanor, but was vetoed by Governor Reagan. After Reagan left office, there was bill SB 95 that was signed by the new Governor, Edmund G. Brown, Jr, which initially was supposed to make marijuana possession charge an infraction, rather than a misdemeanor if it was less than three ounces of marijuana. However, it was later amended to a misdemeanor for marijuana possession less than one ounce, due to political resistance from other legislators that thought three ounces and an infraction was too permissive. Infractions are a lower category than misdemeanors, but in California, infractions were still treated as criminal, and therefore SB 95 essentially informally created a “low misdemeanor” category. The maximum penalty for this misdemeanor was a maximum fine of \$100 with no arrest regardless of the number of prior offenses. Possession of more than an ounce of marijuana could have led to a maximum fine of \$500, maximum imprisonment in county jail for six months, or both. SB 95 also made transportation of less than an ounce of marijuana a misdemeanor, instead of a felony. Transportation of more than an ounce remained a felony. During this time, bills that attempted to legalize any form of cultivation for personal use were never successful(9).



It was not until 2011, that California reduced marijuana possession of less than an ounce to a non-arrestable infraction(10), and until 2016 that marijuana possession and cultivation for recreational use under specified amounts was legalized under Proposition 64(11).

A Timeline of Marijuana in California

Anti-Marijuana Laws

California prohibits the possession or sale of cannabis, making it one of the first states to do so.

1915



1970

The Controlled Substances Act

Cannabis is classified as a Schedule I drug meaning it has no legal medical use.

Decriminalization

California decriminalizes cannabis, along with Alaska, Maine, Colorado, and Ohio.

1975



1996

Proposition 215

California becomes the first state to legalize cannabis for medical use with a valid doctor's recommendation.

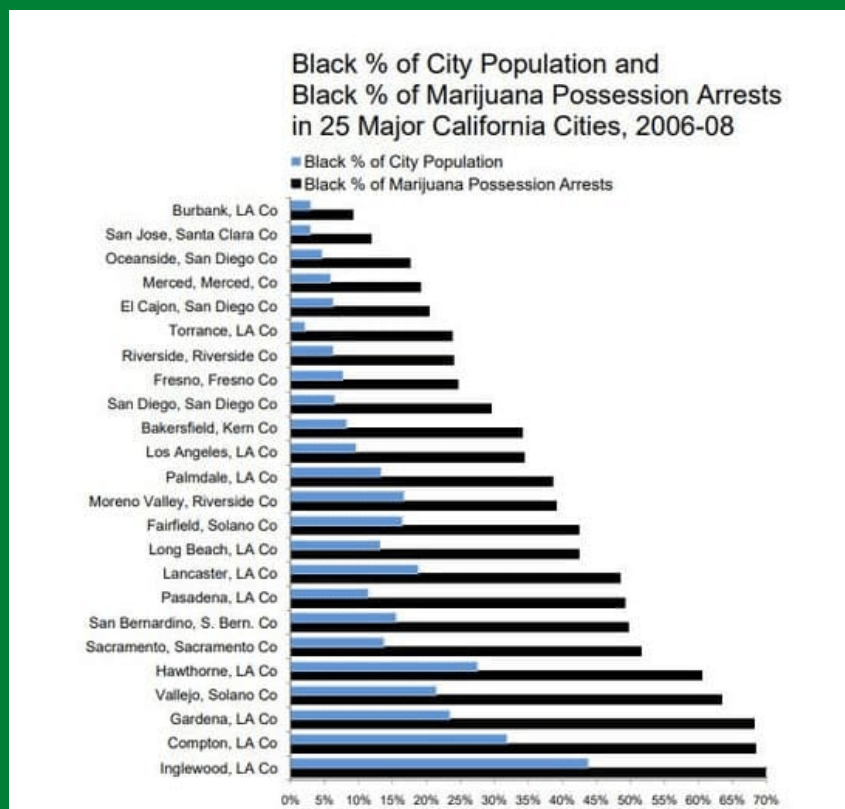
Proposition 64

California legalizes the recreational use of cannabis.

2016



"Black people are the most disproportionately affected, since they constitute much less of the California population."

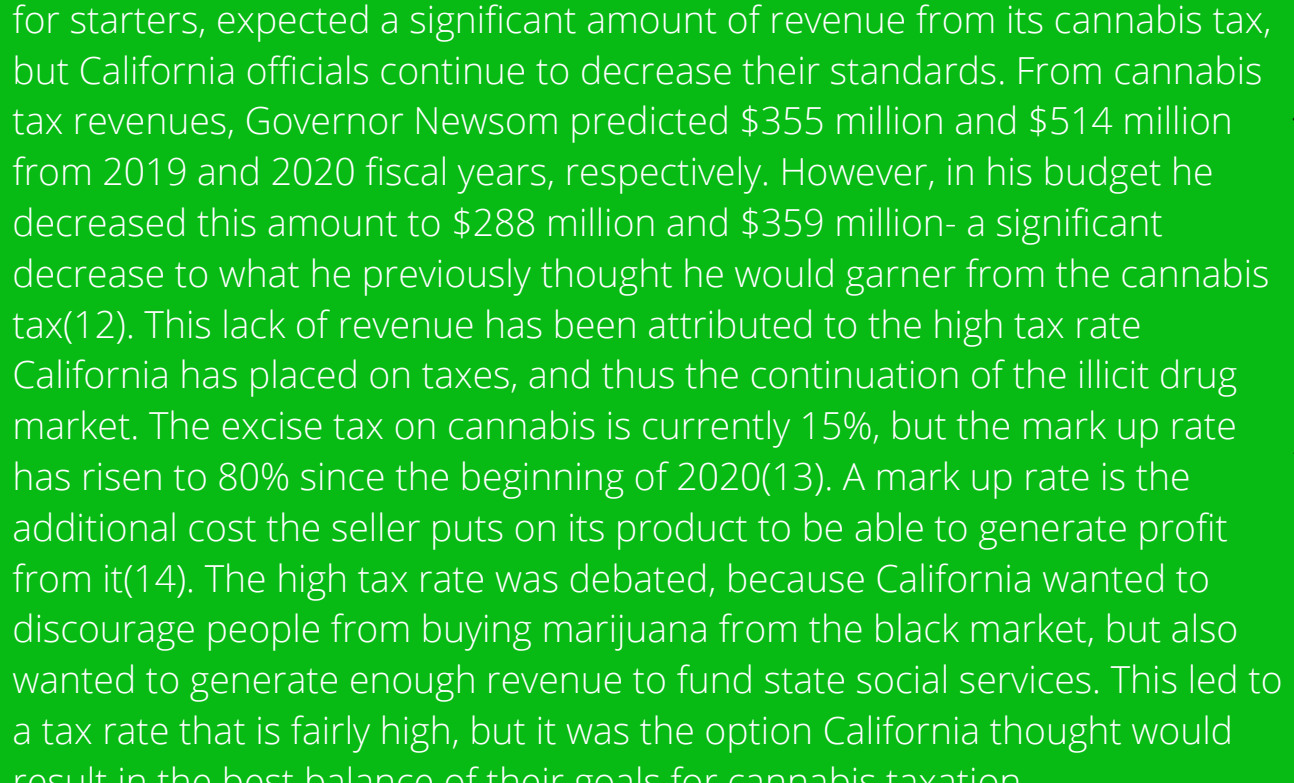


source: <http://www.drugpolicy.org/sites/default/files/ArrestingBlacks.pdf>

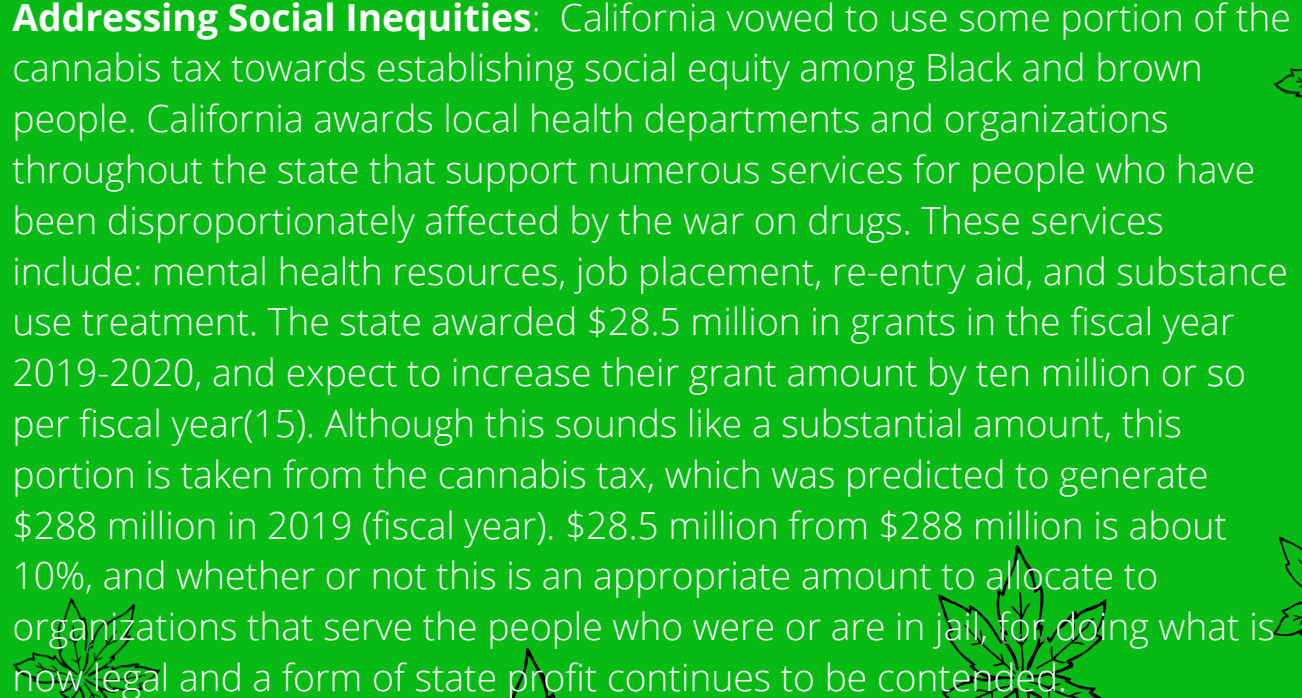


Where is CA Now?

CA's Legalization Expectations and its Let Downs



California has fallen short in its goals from marijuana legalization. California, for starters, expected a significant amount of revenue from its cannabis tax, but California officials continue to decrease their standards. From cannabis tax revenues, Governor Newsom predicted \$355 million and \$514 million from 2019 and 2020 fiscal years, respectively. However, in his budget he decreased this amount to \$288 million and \$359 million- a significant decrease to what he previously thought he would garner from the cannabis tax(12). This lack of revenue has been attributed to the high tax rate California has placed on taxes, and thus the continuation of the illicit drug market. The excise tax on cannabis is currently 15%, but the mark up rate has risen to 80% since the beginning of 2020(13). A mark up rate is the additional cost the seller puts on its product to be able to generate profit from it(14). The high tax rate was debated, because California wanted to discourage people from buying marijuana from the black market, but also wanted to generate enough revenue to fund state social services. This led to a tax rate that is fairly high, but it was the option California thought would result in the best balance of their goals for cannabis taxation.



Addressing Social Inequities: California vowed to use some portion of the cannabis tax towards establishing social equity among Black and brown people. California awards local health departments and organizations throughout the state that support numerous services for people who have been disproportionately affected by the war on drugs. These services include: mental health resources, job placement, re-entry aid, and substance use treatment. The state awarded \$28.5 million in grants in the fiscal year 2019-2020, and expect to increase their grant amount by ten million or so per fiscal year(15). Although this sounds like a substantial amount, this portion is taken from the cannabis tax, which was predicted to generate \$288 million in 2019 (fiscal year). \$28.5 million from \$288 million is about 10%, and whether or not this is an appropriate amount to allocate to organizations that serve the people who were or are in jail, for doing what is now legal and a form of state profit continues to be contended.

Corvain Cooper



Corvain Cooper is a California native and father of three. Cooper was unfortunately arrested in 2013, for being part of a marijuana shipping operation in which him and a few others transported marijuana from California to North Carolina. He was offered a plea deal of 10-20 years under the condition that he testify against the other people involved, but he decided to go to trial instead. Cooper was found guilty later that year by a North Carolina District Court, and was given a life sentence without the possibility of parole due to the federal "three strikes law." Cooper had two previous possession charges for marijuana and codeine, therefore this charge of shipping marijuana was his third. Cooper was thirty-four at the time of his sentencing.

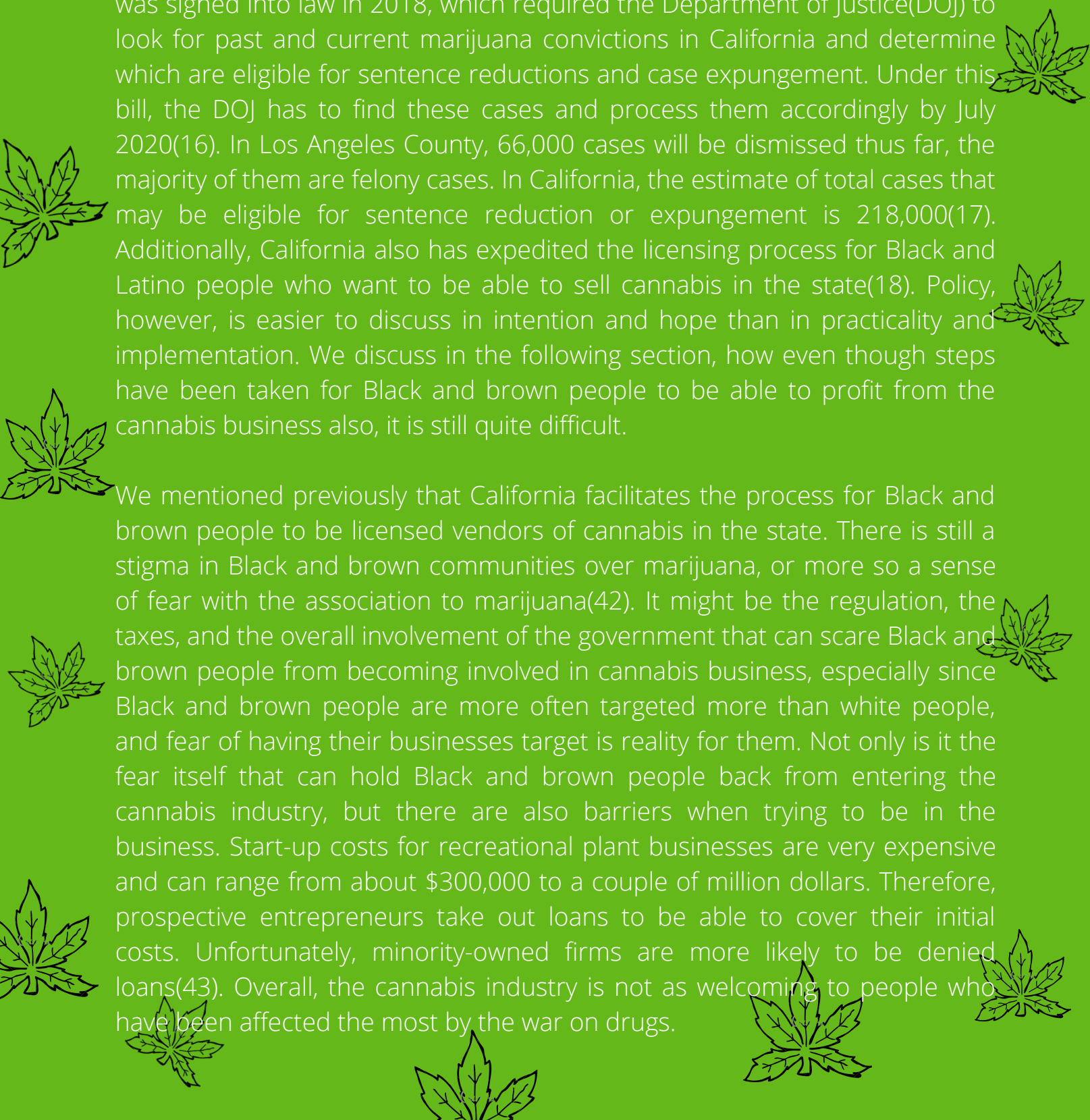
Cooper challenged his sentence as Cruel and Unusual Punishment, which is unconstitutional under the Eighth Amendment, to the United States Court of Appeals for the Fourth District and later, the Supreme Court, but both courts denied his appeal. In 2015, Cooper also petitioned for clemency from President Obama, but was denied without an explanation. In 2016 Cooper had hope of having his case re-evaluated since California had legalized marijuana and changed a few of their marijuana laws. Under California's new laws his two previous possession charges no longer constituted as felonies and were both reduced to misdemeanors, and therefore he should have no longer had those two previous "strikes." The Federal courts, however, refused to reconsider his sentence. Cooper then appealed again in 2018 to the U.S. Supreme Court, but they denied it. His only hope now is that President Trump grants him clemency. No new updates have been made at this time.

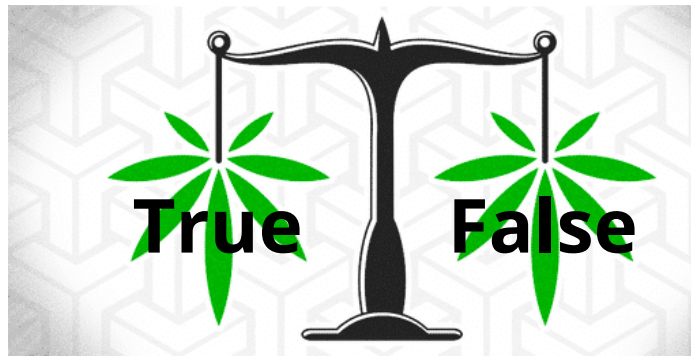


Where is CA Now?

Addressing Social Inequities: In an effort towards social equity, AB 1793 was signed into law in 2018, which required the Department of Justice(DOJ) to look for past and current marijuana convictions in California and determine which are eligible for sentence reductions and case expungement. Under this bill, the DOJ has to find these cases and process them accordingly by July 2020(16). In Los Angeles County, 66,000 cases will be dismissed thus far, the majority of them are felony cases. In California, the estimate of total cases that may be eligible for sentence reduction or expungement is 218,000(17). Additionally, California also has expedited the licensing process for Black and Latino people who want to be able to sell cannabis in the state(18). Policy, however, is easier to discuss in intention and hope than in practicality and implementation. We discuss in the following section, how even though steps have been taken for Black and brown people to be able to profit from the cannabis business also, it is still quite difficult.

We mentioned previously that California facilitates the process for Black and brown people to be licensed vendors of cannabis in the state. There is still a stigma in Black and brown communities over marijuana, or more so a sense of fear with the association to marijuana(42). It might be the regulation, the taxes, and the overall involvement of the government that can scare Black and brown people from becoming involved in cannabis business, especially since Black and brown people are more often targeted more than white people, and fear of having their businesses target is reality for them. Not only is it the fear itself that can hold Black and brown people back from entering the cannabis industry, but there are also barriers when trying to be in the business. Start-up costs for recreational plant businesses are very expensive and can range from about \$300,000 to a couple of million dollars. Therefore, prospective entrepreneurs take out loans to be able to cover their initial costs. Unfortunately, minority-owned firms are more likely to be denied loans(43). Overall, the cannabis industry is not as welcoming to people who have been affected the most by the war on drugs.





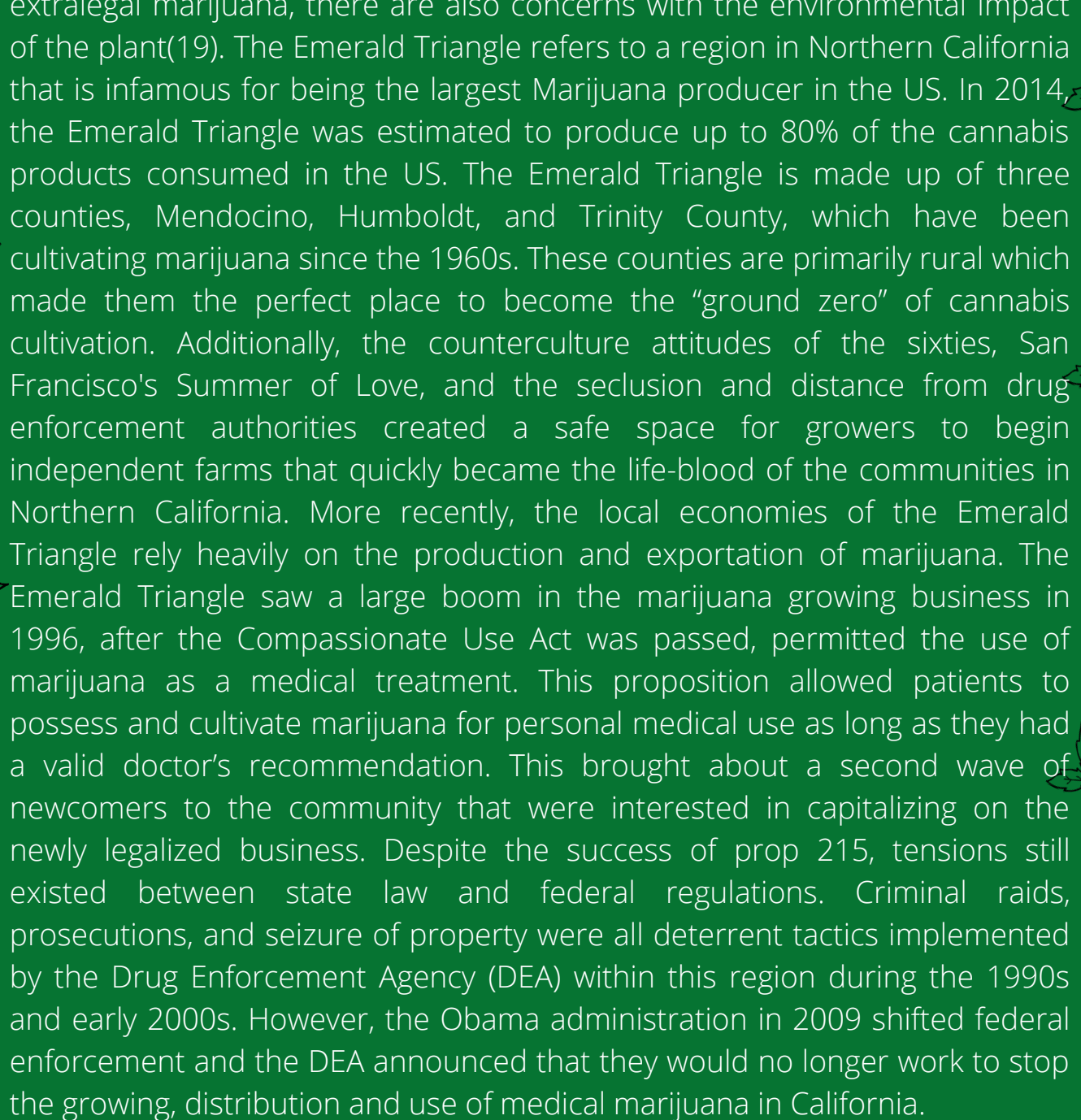
1. Marijuana is currently scheduled in a higher category than cocaine T F
2. There is currently more research being done to study the potential benefits than the potential harm of marijuana use T F
3. Weed has been criminalized in for a shorter period than it has been legal T F
4. Black and brown people still make up the majority of marijuana possession arrests in states that have legalized it T F
5. California has the highest revenue from the cannabis tax among the states that have legalized T F
6. The majority of the cannabis tax is going to fund resources for people who have been affected by the war on drugs T F

Answers

1. T-Marijuana is currently a Schedule I drug, cocaine is a Schedule II drug
2. F-94% of research conducted is to study the possible harms of marijuana *Source: Weed the People. Directed by Abby Epstein. 2018.
Netlix, <https://www.netflix.com/browse?bjbv=810162478&jbp=08&jbr=2>.
3. T-Marijuana was federally legal many years before it was federally prohibited
4. T *Source: (12)
5. F-CA was the second lowest among the states that have legalized marijuana
6. F-Only about 10% of the cannabis tax revenues were used towards these resources
*Source: (16)

The title "Going Green?" is centered at the top of the page in a large, white, sans-serif font. It is surrounded by several stylized, black-outlined maple leaves of various sizes, some of which are partially cut off by the edges of the frame.

Going Green?

The main body of the text is a single paragraph in a white, sans-serif font, set against a solid black background. It is flanked by decorative black-outlined maple leaves of various sizes, some of which are partially cut off by the edges of the frame.

Apart from the legal concerns surrounding the transition from legal and extralegal marijuana, there are also concerns with the environmental impact of the plant(19). The Emerald Triangle refers to a region in Northern California that is infamous for being the largest Marijuana producer in the US. In 2014, the Emerald Triangle was estimated to produce up to 80% of the cannabis products consumed in the US. The Emerald Triangle is made up of three counties, Mendocino, Humboldt, and Trinity County, which have been cultivating marijuana since the 1960s. These counties are primarily rural which made them the perfect place to become the “ground zero” of cannabis cultivation. Additionally, the counterculture attitudes of the sixties, San Francisco's Summer of Love, and the seclusion and distance from drug enforcement authorities created a safe space for growers to begin independent farms that quickly became the life-blood of the communities in Northern California. More recently, the local economies of the Emerald Triangle rely heavily on the production and exportation of marijuana. The Emerald Triangle saw a large boom in the marijuana growing business in 1996, after the Compassionate Use Act was passed, permitted the use of marijuana as a medical treatment. This proposition allowed patients to possess and cultivate marijuana for personal medical use as long as they had a valid doctor's recommendation. This brought about a second wave of newcomers to the community that were interested in capitalizing on the newly legalized business. Despite the success of prop 215, tensions still existed between state law and federal regulations. Criminal raids, prosecutions, and seizure of property were all deterrent tactics implemented by the Drug Enforcement Agency (DEA) within this region during the 1990s and early 2000s. However, the Obama administration in 2009 shifted federal enforcement and the DEA announced that they would no longer work to stop the growing, distribution and use of medical marijuana in California.


Going Green?

This shift also resulted in less pressure from growers who were not growing under legal state regulations and the industry continued to thrive. When marijuana was finally legalized for recreational use in 2016, the attitudes and concerns of the residents of the Emerald Triangle shifted. Suddenly, the legalization created a potential influx of new growers with licenses to operate and grow on commercial scales which hadn't been done so widely in this area before. Economic competition is not the only concern regarding the change that was brought about by the legalization of recreational marijuana. For decades, the illicit nature of the marijuana business in Northern California made tracking and researching the environmental impacts challenging.










Going Green?









Data was difficult to come by and often incomplete because of the very nature of black markets. However, with regulations such as the California Environmental Quality Act (CEQA) that requires growers to register and provide a detailed analysis of the environmental impact of their operations, tracking and understanding the ecological effects of marijuana has become more possible.



Challenges of Estimating Environmental Impact: Generally speaking, cannabis as a cash crop requires cultivation and land management practices that encourage a “biggest bang for your buck” model of growing. In a study conducted in the Northern Coastal Basin of California, Anne Gianotti et al. found that estimating the environmental impact of marijuana cultivation in Northern California is difficult for three major reasons. First, the semi legal status of marijuana, being that it is legal under state provisions but is still classified as a schedule one drug under federal law, makes it difficult to conduct large surveys of the environmental impact. Second, the well mixed spread of legal and extra legal operations in the Emerald Triangle makes it difficult to assess which growing operations are complying with environmental standards and which are not.



Finally, the legalization of weed and the rush of growers into the Northern California region meant that many businesses were operating under provisional licenses because the infrastructure to enforce state regulations did not exist by the time farms and operations were producing on massive scales(20). However, there is still some knowledge about the effects of marijuana on California’s environment. When considering the environmental concerns of marijuana cultivation over the transitional time period of legalization, there are several aspects to the growing process that can produce negative environmental impact. These impacts can be both directly and indirectly impact the ecologies of Northern California and the sum of these impacts is from all forms of growing operations, large, small, legal and illicit. Marijuana, is considered to be a plant that requires high levels of water and nutrients to grow successfully (21).





Going Green?

In a recent empirical study conducted in Humboldt County, Butsic and Brenner found that Marijuana growers in Humboldt county often utilize the natural landscape to conceal their farms. Butsic and Brenner write, “abundant grow sites clustered in steep locations far from developed roads, potential for significant water consumption, and close proximity to habitat for threatened species, all point toward high risk of negative ecological consequences associated with cannabis agriculture as it is currently practiced in northern California”(22). This outlines the primary concerns of cannabis cultivation to be water usage and harm to local species. There was also concerns that although the growing operations often had small geographic footprints, meaning that they do not take up much spatial area, the effects of the production for any one farm may be impacting an area that extends well beyond the barriers of the farm. This is primarily due to the location of the farm on steep, uphill areas in Humboldt county which leaves the lower elevation lands vulnerable to contaminated runoff. Finally, they concluded that the tendency to cluster marijuana farms may lead to a disproportionate impact on the environment in some areas(23). This study also noted that the lack of enforced regulation of cannabis cultivation also contributes to the challenges the environment faces.

The confusion and uncertainty in the regulatory status of marijuana is to some extent mirrored in the academic research on it. The plant’s complicated history and associated stigma’s have resulted in a complex, sometimes contradictory picture of its biological effects. These complications are only confounded by the complicated pharmacological effects of the drug itself, which works by activating cannabinoid receptors present in both the central nervous system and peripheral nerves throughout the body (35).



Understanding the Science

The receptors on which marijuana act were discovered due to research specifically into mechanisms of response to cannabinoids and prompted the discovery of an entirely new brain chemical system (35), which speaks to the uniqueness of marijuana and its chemical constituents. The difficulties evaluating marijuana medically and the barriers the chemical profile of the plant pose to research are only exacerbated by regulatory environments that limit the availability of marijuana for research and impose stringent guidelines on academia (34). Despite these hardships, the evidence collected on the effects of marijuana point to many potential benefits as well as a few harmful effects, especially associated with adolescent use. Under legalization, marijuana is poised to greatly benefit public health by serving as an alternative to addictive opiate painkillers, could possibly treat a myriad of other issues, and can have its harms limited by keeping its use restricted to adults.

Cannabis Affects on the Brain and Body: Although tetrahydrocannabinol (THC) has been identified as the primary active chemical responsible for the euphoric high of marijuana, there are a total of eleven types of cannabinoids, defined as molecules acting on cannabinoid receptors, and hundreds of non-cannabinoid chemicals that may or may not have physiological effects (35). Researching marijuana as it pertains to health is laborious and difficult because of the many chemically active molecules whose effects may change when working in combination as opposed to in isolation. Additionally, different marijuana plants will have all of these chemically active and inert substances in different amounts (34). The nature of this botanical medicine means that researchers have to make decisions when evaluating its effects. Some try to isolate specific chemicals for research, often THC or cannabidiol (CBD), while others investigate the effects of study participants who use marijuana. However, the variance in plant composition means that not all research will use the same drug, and evaluating this research may at times be comparing apples and oranges.

Understanding the Science

Yet another barrier to research is the method used to ingest marijuana, which can change exactly what composition of cannabinoids is absorbed into the body, and what organs and systems these cannabinoids reach. While smoking marijuana is the most common form of ingestion, many laboratory environments do not have the facilities for safe smoking (34). New methods of ingestion such as vaping can also drastically change what cannabinoids are absorbed, and different temperatures of vaporization can be used, further complicating dosage (29). Additionally, these new methods are not always safe, as illness has been caused by THC cartridges used in vaporization. (30). It is very important to note however that these illnesses were caused specifically by vitamin E acetate, an adulterant only found in illegal marijuana cartridges. Transferring these illicit marijuana markets to a legal, regulated framework is very important for safe use of marijuana.



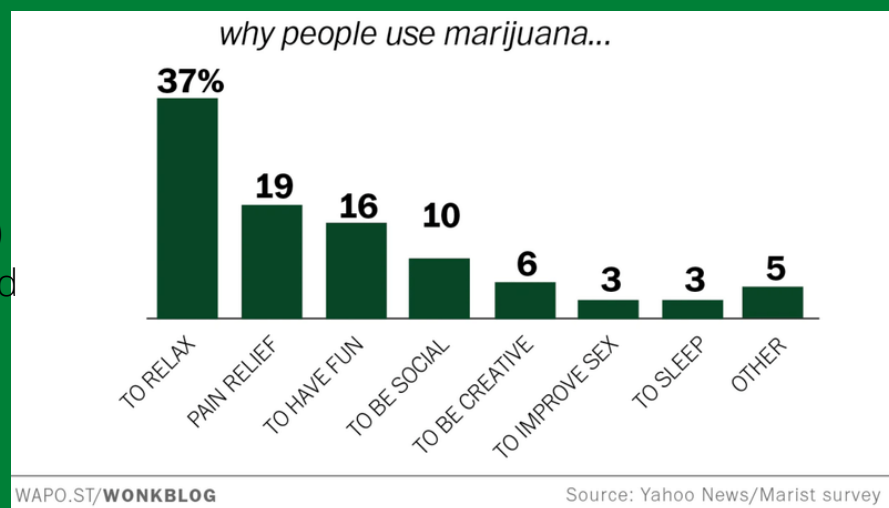
THC-based vaping products that the New York State health department said in September contained vitamin E acetate. Mike Wren/New York State Department of Health, via Associated Press

Image from Grady, 2019

Understanding the Science

Despite all of these barriers and disclaimers regarding the state of current marijuana research, some important claims about marijuana's efficacy as a drug have been substantiated. Many uses of marijuana have been proposed for a plethora of conditions, and while there is anecdotal evidence attesting to its benefit for nearly all of them (29), only a few have a strong body of evidence supporting them (34). The most notable use of marijuana is in treatment of pain, which has a wealth of clinical and laboratory support. (29, 34, 35) This has been shown in many studies and is widely agreed upon by the scientific community. Additionally, it is agreed upon that cannabis can reduce multiple sclerosis related spasticity. (34) Lastly cannabis has been shown to be an effective antiemetic for cancer patients with treatment induced nausea (34).

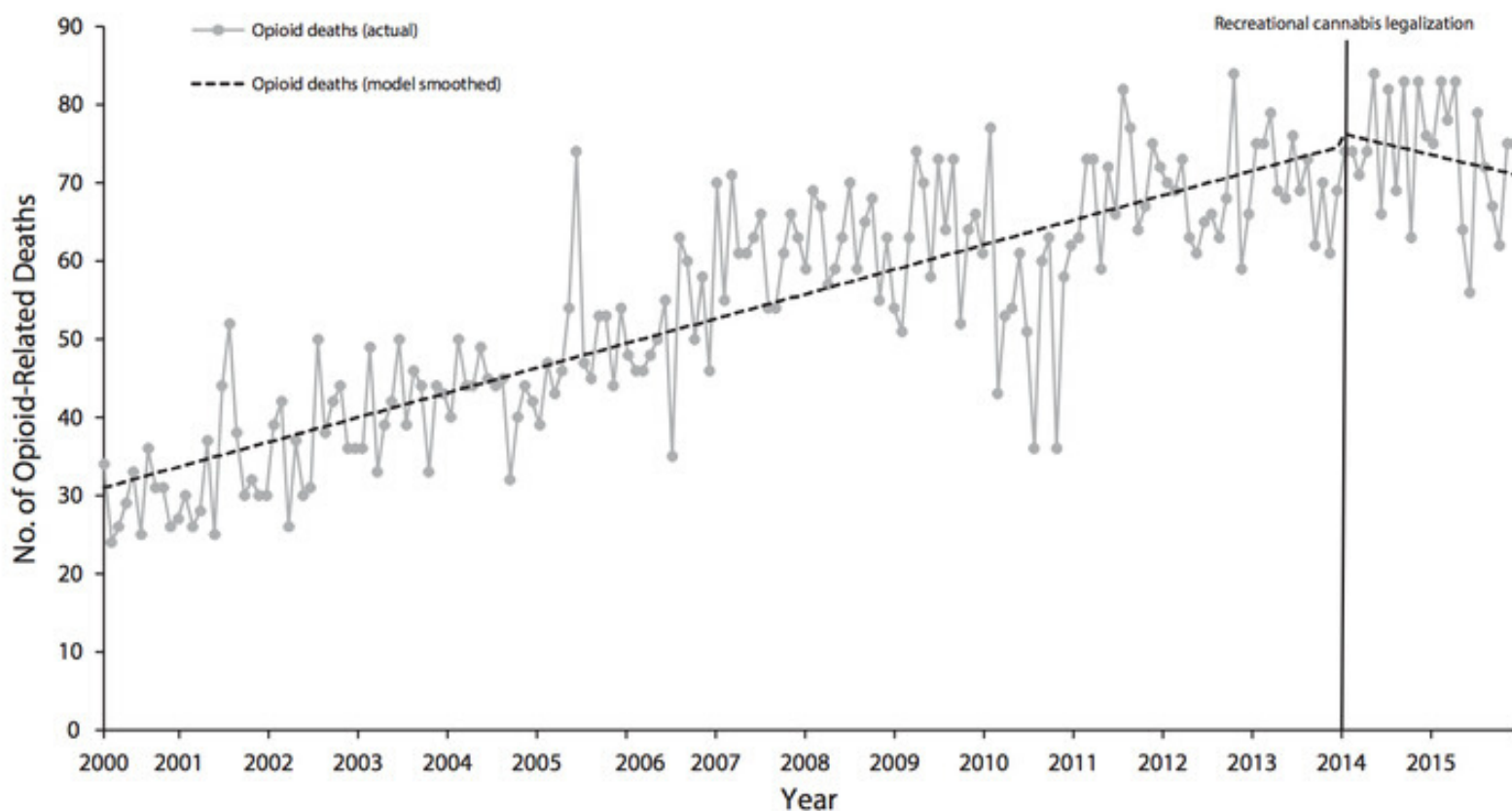
Graph from
Ingraham 2017(40)
Data is self reported



Other possible conditions marijuana could treat have significant evidence for their efficacy, but are often inconsistent in their evidence. A large reason for this is the general variance in response of individuals to marijuana (35), which is a property of the drug that is antithetical to the controlled and scientific process of FDA approval for therapeutic use in treatment (35). Additionally, marijuana has a biphasic effect, in which its effectiveness in treatment changes drastically, even worsening symptoms it normally relieves, depending on dosage (29). One potential use of marijuana is in treatment resistant epilepsy (38), while another is alcohol use disorders (31). A common use of marijuana in both recreational and medical contexts is to treat anxiety, and the non-psychoactive CBD can be used for this purpose (28).

Understanding the Science

A review of data on opioid addiction and related deaths in states where marijuana was legalized for medical use has found that wherever marijuana is legalized, opiate related deaths have been reduced (36). Significantly, this has taken place without widespread prescription by doctors, but instead simply the availability of medical marijuana for those looking for it has made an impact. The opioid epidemic is a serious public health issue with far reaching implications for the health system, but marijuana can play a role in solving it.



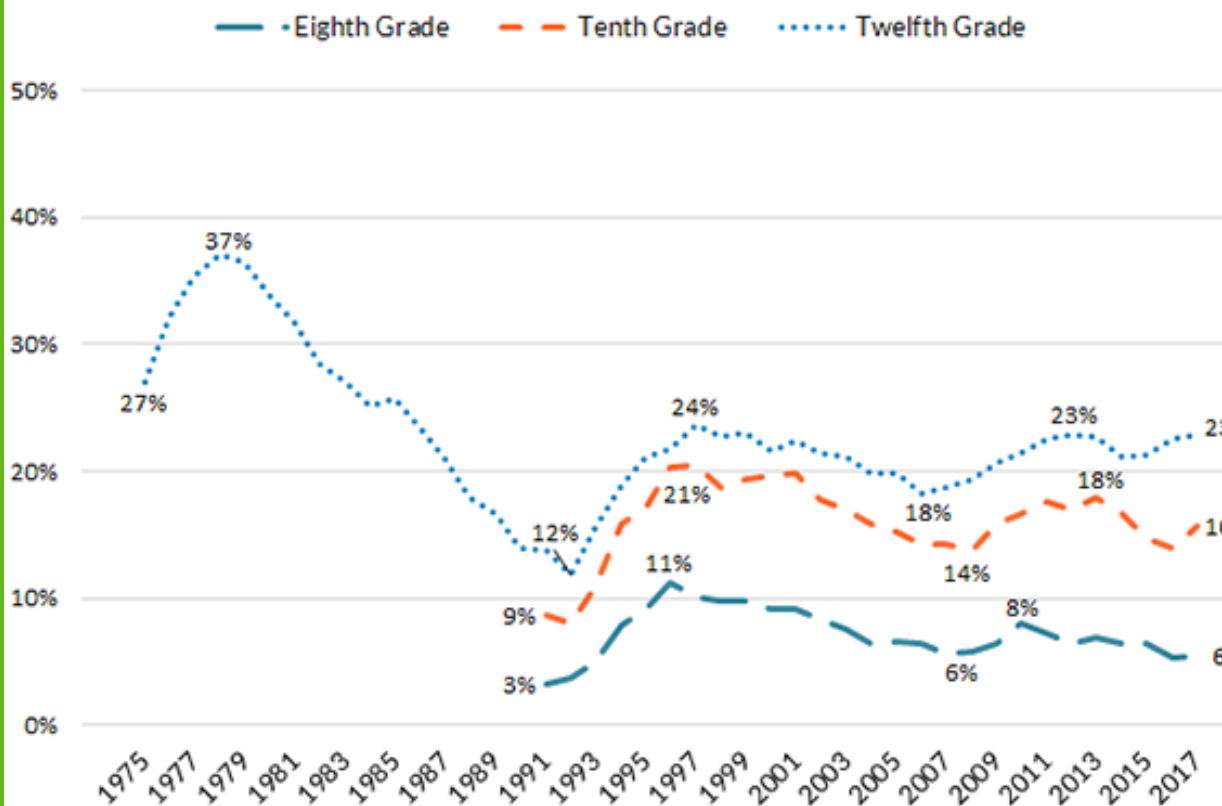
Note. Change in opioid-related deaths per month following legalization = -0.68 (95% confidence interval = $-1.34, -0.03$; $P = .043$). Change in model-estimated opioid-related deaths was robust to covariate control of opioid-related deaths in all comparison states. Change in model-estimated opioid-related deaths was robust to whether the prescription drug monitoring program (PDMP) covariate was modeled at the beginning of implementation or at full implementation of the 2014 PDMP change.

FIGURE 1—Changes in Monthly Opioid-Related Deaths Following Recreational Cannabis Legalization in Colorado, 2000–2015

Understanding the Science

Marijuana is not always positive in its effects however. While it is not lethal in any dose (35), it does have significant deleterious effects when used by adolescents. While there is not a scientific consensus on all of the long term effects of chronic marijuana use, there is much evidence indicating it alters brain development in youth. Synaptic pruning and white matter development are adversely effected (32), and adolescent use is associated with worse cognition, working memory, and an array of other brain functions in adulthood (39).

Percentage of Students in Grades 8, 10, and 12 Who Report They Used Marijuana in the Past Thirty Days: Select Years, 1975-2017



Source: Data for 1975-2017: Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2018). Demographic subgroup trends among adolescents in the use of various licit and illicit drugs, 1975-2017 (Monitoring the Future Occasional Paper No. 90). Ann Arbor, MI: Institute for Social Research, The University of Michigan. Retrieved from <http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ90.pdf>. (Tables 13, 14, and 15)



Understanding the Science

Keeping those who are underage away from using marijuana is clearly of the utmost importance for the drug to benefit public health, however it is not clear that legalization of marijuana is associated with a higher amount of adolescent use. In an examination of 14 states that legalized marijuana is one capacity, only one had a statistically significant increase in use by 12-17 year olds, and some states even had some decreases (39). However, it should not be assumed that this will always be the case under every environment, and special care and attention should be given to making sure marijuana is only sold to adults and that the youth is educated on the dangers of adolescent use.

While it presents potential for treatments and ameliorating the opioid epidemic, marijuana is still a drug with possible adverse public health implications. These can be avoided by proper regulation, while more research is needed to fully understand its effects. In order for this research to take place, barriers should be lifted in the regulatory process. It can be used to treat pain, but information about danger to adolescents should be fully known.


Solutions to Regulation

Negative impacts of legalization can be evaded through the cannabis industry's cooperation with the law and environmental policy and regulations.





Environmental Solutions: To prevent these negative impacts to neighboring ecology and to the environment, it is important to put stress and emphasis on passing strong policies, regulations, and controls because these laws will mitigate the negative outcomes of marijuana farming, but it does not stop there. Research is pertinent to improving the environmental impact of marijuana farming. Because of the recency of legalization and medicalization of marijuana, there is not much research on the sustainability options for marijuana growing. Integrating better policies and regulations with technologies and environmental monitoring systems will be key to reducing the harmful impacts of marijuana growing. One solution proposed against pollution caused by marijuana cultivation is communal self-regulation which looks toward a method of accountability managed through promoting community-based environmental care such as self-regulation, dissemination of best practices, neighbor to neighbor monitoring, and farmer crafted standards (23). Environmental effects are experienced, not by just one state or country, but globally. This proposed method of accountability would prevent the current environmental climate change crisis from being exacerbated by poor marijuana cultivation practices. There is a possibility that the cannabis industry can move toward a more sustainable and organic farming practice that limits the amount of environmental damage caused by marijuana farming. If these methods can be adopted and implemented through policy and regulation, then the negative environmental impact of marijuana farming could be drastically reduced or limited.





Solutions to Regulation



Research Solutions: The hope is that, looking at the current issues with legalization from all angles, will help provide solutions so that the transition to legalization can be more stable for states looking to legalize in the future, or if legalization is to take hold federally. The best way to ease the transition to legalizing marijuana is to adopt a transdisciplinary approach to marijuana research that encompasses not just the fundamental principles of ecology and biology, but also the socioeconomic, sociology and economic aspects that looks at “weed science” and agronomy (25). This will allow for policy and regulation that accounts for the health, economic, and societal impact of marijuana legalization. The goal is to create a system that advances ecosystem sustainability and improves health management. Marijuana research is complex and multi-layered and addressing one aspect of this issue leaves many holes in the legalization system left unaccounted for and this is why the transdisciplinary approach to research provides a holistic solution that resolves many challenges that could arise with legalization (25).






Legal Solutions: The best proposed solution is to provide retroactive ameliorative relief for current offenders of marijuana possession (26). This is the best solution because the statistics on marijuana arrests and convictions show a large racial disparity, highlighting the way in which marijuana has historically been a drug used for the purposes of racism and discrimination in the United States (26). This brings about another social justice aspect to legalization that seeks to correct the errors of the racist and capitalist system that is the prison system.













Solutions to Regulation



In regards to California's high cannabis tax, we propose that a larger proportion of the revenue be used towards social equity services rather than a mere 10%. There should be a standard proportion, since the revenues generated from the tax have proved to be unreliable. There is a great amount of people that have been affected by the war of drugs in California, and therefore a tremendous amount of resources should be allocated towards them. This might lead to a positive feedback mechanism, in which the more resources given to these affected people, will lead to a more destigmatized view of marijuana and marijuana convictions, which may make it easier to be encouraged to participate in the cannabis industry. In respect to the unaffordable start-up costs, the state can also allocate some proportion of the cannabis tax for loans for these particular groups, so that they do not have to go through banks and face what is evidently racial bias. In order for consumers to stop buying illicit cannabis. California also needs to reconsider its high cannabis tax, and the increased mark up rate. These steps may ease the transition into legalization of marijuana, and bridge the gap its criminalization has created in communities of color.




Legalization in California is too new to be evaluated in some of the same aspects as other states that have also legalized marijuana have been. Marijuana possession - arrests rates have been analysed in other states, such as Colorado and Washington and although their marijuana possession arrests have decreased overall, their arrests rates for Black and brown people have not had the same significant decrease(44). Legislators write the laws, but it is police departments and authorities who enforce them. This should caution California to monitor its police enforcement, so that this mistake is not made. California should address racial bias in the appropriate departments, and reform them if need be. This may include proposing more legislation so that police have clear directives as to when to arrest someone for marijuana possession and when to give a citation, so that it is not up to their discretion.










Solutions to Regulation



Health Solutions: Challenges concerning the lack of evidence about health benefits and detriments of marijuana can be remedied through increased research and addressing current research gaps that are obstructing the progress towards sufficient conclusions. Understanding the biological effects of cannabis helps us to better understand the concerns regarding legalization and the efforts needed to mitigate the negative outcomes that have occurred as a result of legalization. It is also important to take into account the impact legalization would have on adolescents and youth in order to provide strong regulations to deter access. Currently adolescents represent a small percentage of marijuana users, but with legalization this has the propensity to increase access and use among this younger population (27). This warrants the need for hard policies and educational programs warning against adolescent use.

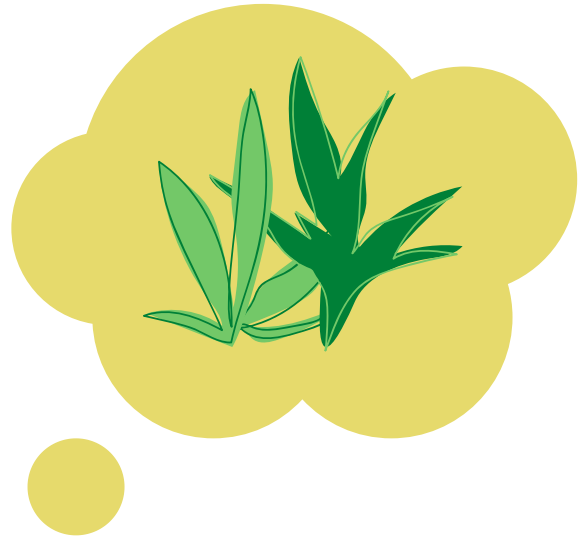




Conclusion

Marijuana has been legalized in a number of states for almost four years now, and not much progress has been made to adjust the current issues surrounding legalization. This is because policy and regulation has not been able to keep up with the growing pace of the cannabis industry. Policy and regulation is the foundation for the marijuana industry and it requires special attention and focus for mitigating the negative outcomes of legalization. The reason why marijuana policy and regulations have not been strong is attributable to the extreme lack of research in marijuana cultivation, technology, health, and economics. This can be remedied through increasing research efforts and concentrating on a more transdisciplinary approach to research. Legalization should seek to protect adolescents and youth from obtaining access and reversing the racist and capitalist mechanisms that caused marijuana to be used as a tool for disproportionately incarcerating black and brown people. Only then, will we see progress and stability in our current legalization system

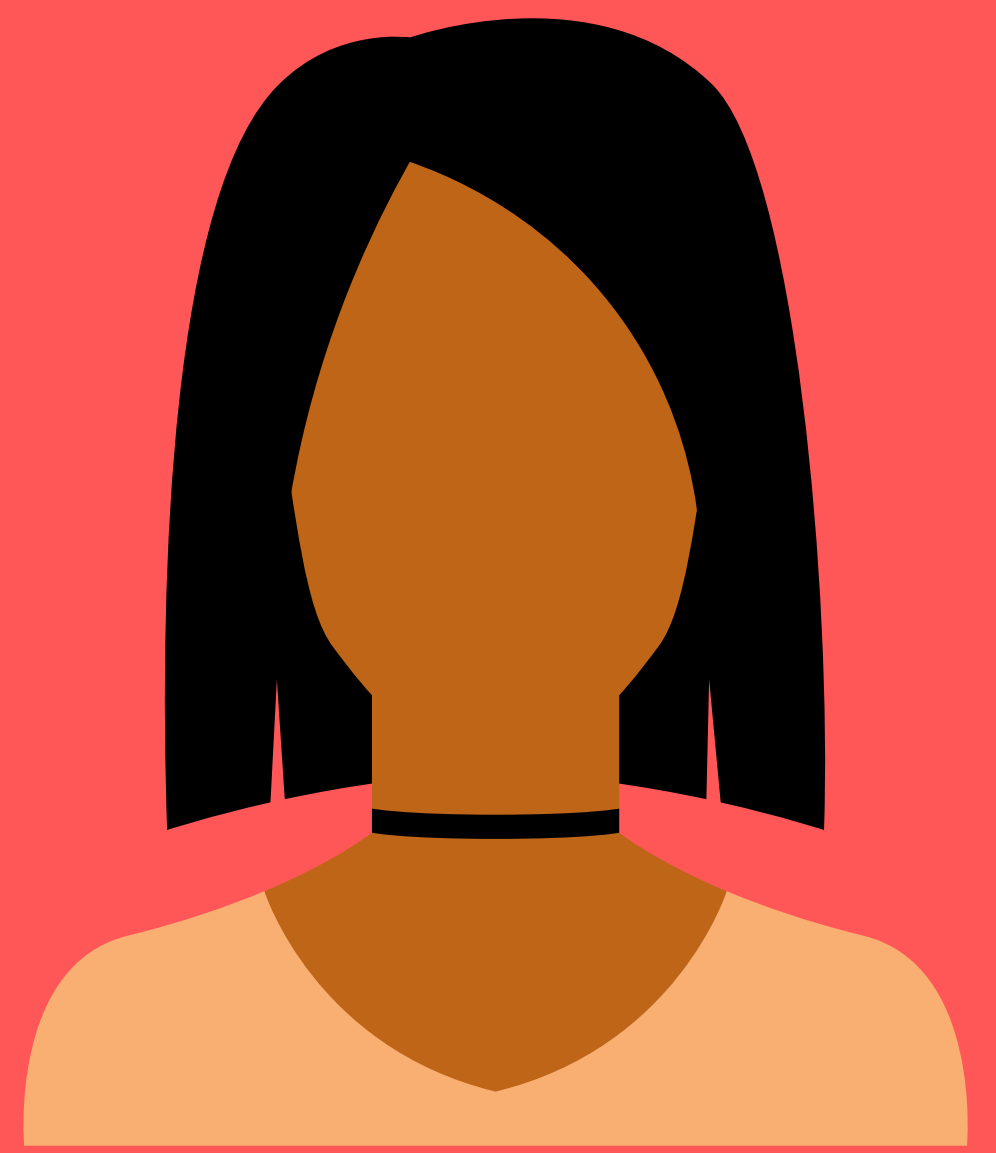
Pause. Digest. Question.



Consider the essay you just read. Did it reveal any new information for you? What kinds of questions did it arise for you? Use this space to reflect on the unanswered questions and persisting conflicts that exist due to legalization and regulation in California.

Interview

Miski interviewed a 22-year-old Latina marijuana smoker. She asked her a couple questions in relation to how legalization has impacted her as a woman of color marijuana user. Because she lives in California, we seek to discover her personal and legal experiences with the legalization of weed.



Rosa

22 YEAR OLD LATINA WOMAN

Miski: At what age did you start smoking?

Rosa: 16 years old. I started smoking with a guy I liked in high school.

Miski: Was it hard to remain below the radar as far as the law is concerned?

Rosa: Kind-of. There was strict regulation of weed for minors and security at my highschool that we had to be wary of. Because I was young, I had to be careful. We had to find spots off campus where we wouldn't get caught.

Miski: Have you ever had any run-ins with the law?

Cody: No.

Miski: When did you start buying your own weed?

Cody: At 21 years old, when it got legalized.

Miski: How did legalization impact you?

Cody: It made weed more accessible. I was more open about smoking especially when I moved out of my house. Legalization made it easier because I could do it more whenever I wanted. I don't think I would smoke as often if it wasn't legalized.

Miski: So would you say you felt safer after legalization? Like as far as the law is concerned?

Cody: Yes, but I was still very careful. I carry a weed pen in public so that its less suspicious because it can be disguised as vaping, but I still don't want to be caught by the police because it is too risky.

Miski: What are you afraid of? Like if you get caught by law enforcement?

Cody: I am not a US citizen and if I am caught I risk going to jail and being deported.

Miski: What are your hopes for the future of marijuana laws and regulations?

Cody: I know its a schedule 1 drug, which means that its dangerous and highly addictive. I hope it gets rescheduled because its not dangerous or highly addictive. I also hope it gets legalized federally becuse it will help with the economy. I really hope they also forgive thosse send to jail for marijuana charges because it affects minority groups. Weed is legalized but people are still in jail suffering for selling and trying to maintain and support their families economically. They need to change the justice system and decriminalize weed because there are people who committ worse crimes.



OUR RESPONSIBILITY TO THE
COMMUNITY

RESOURCES FOR PEOPLE AFFECTED BY
MARIJUANA CRIMINALIZATION IN CA

CALIFORNIA PROP 64



1 READ!

There are many online resources that break down the complicated process of clearing your own record. A good place to start is convictionfree.com/prop64-expunge-marijuana-conviction/

2 EQUITY FIRST ALLIANCE

Organizers who work at the intersection of the cannabis industry, racial equity, and reparative justice. They advocate for social equity programs as mentioned in our essay among other things.

3 CALIFORNIA NORML

They publish a newsletter, lobby lawmakers, sponsor events, offer legal, educational, and consumer health advice, and sponsor scientific research.

4 ONEJUSTICE

Millions of low-income Californians face pressing legal problems without access to legal help. OneJustice provides pro-bono legal aid and resources. Specifically helpful to migrants and non-citizens.

5 ROOT & REBOUND

A group attorneys dedicated to empowering people most impacted by the criminal justice system through public education, direct legal services, and policy advocacy.

6 NATIONAL EXPUNGEMENT WEEK TOOLKIT

A free resource for community organizers and others interested in hosting an event for expunging people's records.



THE FUTURE FOR MARIJUANA & MARIJUANA RESEARCH



TRANSDISCIPLINARY RESEARCH

All encompassing research: ecological, socioeconomic, biological, sociological, economic, weed science, and agronomy.



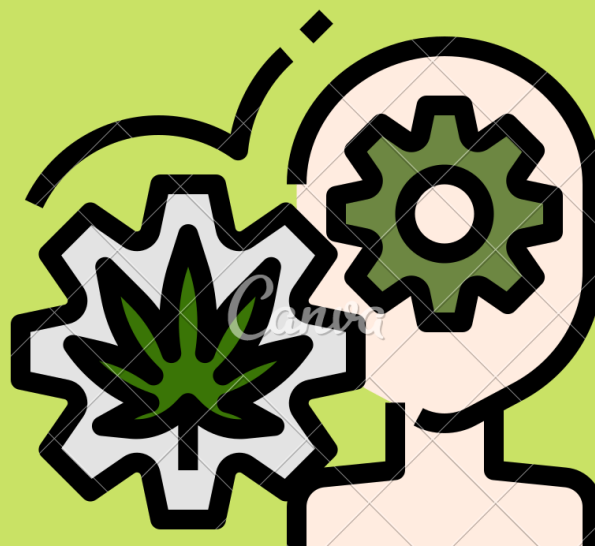
SUSTAINABILITY

Sustainable marijuana cultivation practices that: protect the environment, advance ecosystems, and organic growing.

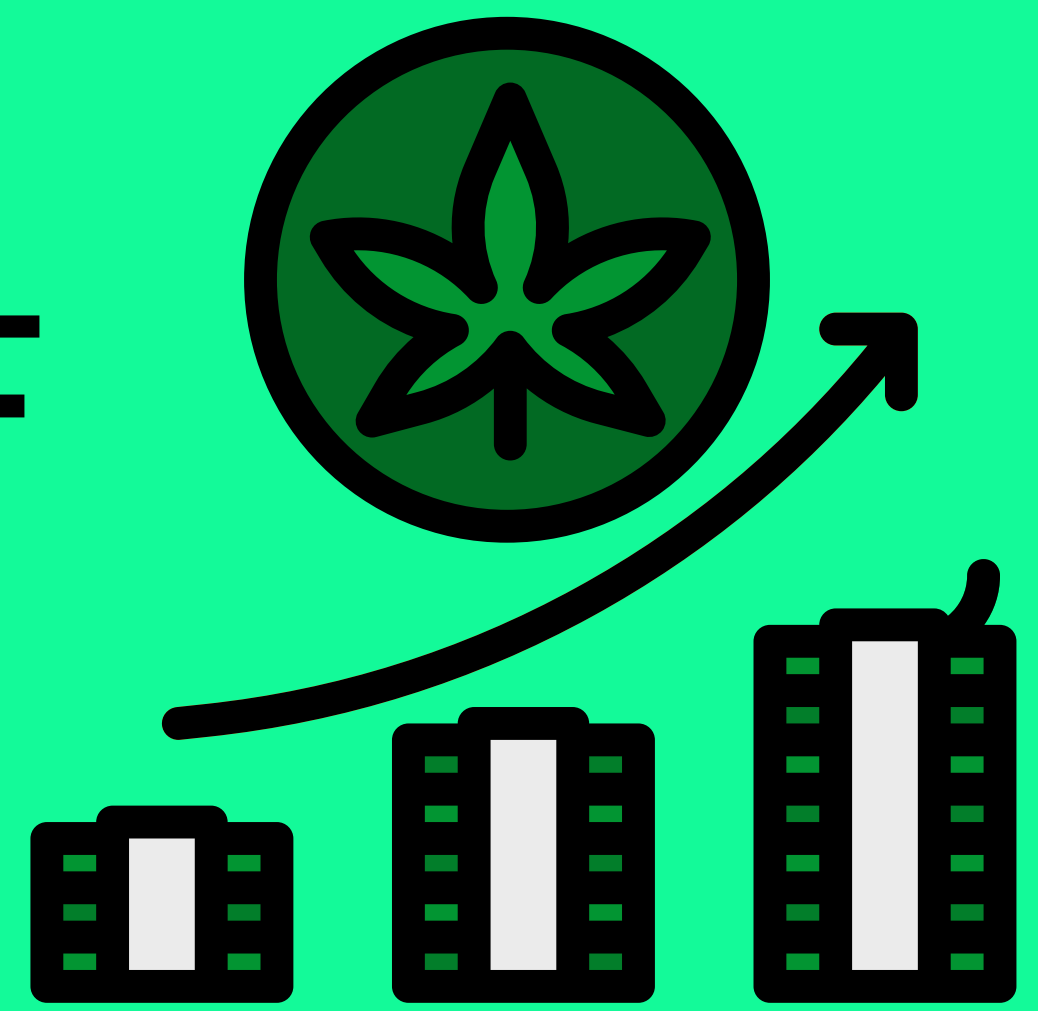


SOCIAL JUSTICE

Fairness and justice for current offenders, efforts in reducing racist and discriminatory practices post legalization, and social equity funding programs.



ECONOMIC BENEFITS OF LEGALIZATION



TAX REVENUE: REVENUE FROM TAXING GROWERS AND BUSINESSES



REVENUE FROM EXPUNGING CASES: THERE IS A HIGH COST FOR UPHOLDING THE PRISON SYSTEM. LEGALIZING SAVES US THIS MONEY AND RESOURCES USED TO MASS INCARCERATE OFFENDERS.



JOB: CREATION OF MORE JOBS WITH THE INCREASE OF THE CANNABIS INDUSTRY

Interview

I interviewed a 22-year-old African American woman who has been frequently smoking marijuana for years. I asked her a couple questions in relation to how legalization has impacted her. As a frequent user of marijuana, this controversy over legalization affects her. Because she lives in California, I seek to discover her experiences with the legalization of weed.



Samira

22 YEAR OLD BLACK WOMAN

Miski: At what age did you start smoking?

Samira: I began smoking at 19 years old. This was when legalization just happened, but I was too young to buy weed. I smoked with friends and people who were already supplying.

Miski: When did you start picking up weed by yourself?

Samira: I started going to the dispensary near my house because they didn't card, but then they started carding people and every dispensary around cards people. So, I got a medical marijuana card.

Miski: What was that process like?

Samira: It was a super simple process. I paid fifty dollars and I filled out some paperwork. It was quick.

Miski: What was the reason you "needed" a medical card. What was the reasons you gave them?

Samira: I just told them some bullshit like I have anxiety, insomnia and pain. I just lied to them and they didn't really have an extensive screening process. They just took everything I said at face value and believed me. Once I paid and filled out the paperwork I was good to go. I could go to any dispensary and present this card and I would get weed easily.

Miski: So that's all you had to do? And it made it easier for you to get access to marijuana?

Samira: Yeah because I was underage and everybody was carding, this was the best way I could get weed. I was scared they would deny me for the medical card because I was lying and I thought they would screen better for it, but it was so plain and simple. Easiest thing ever. And I got what I wanted.

Miski: So, once you became of age, 21, how did legalization of weed impact you?

Samira: It only helped with accessibility. Legalization actually made everything worse because of taxation. They tax the weed higher, so I save way more money long term by buying it illicitly. So, I buy my weed illegally still. And the weed is better at illicit shops too because they grow it a certain what in weed farms that are ran by permission of the government. Its not natural. They mass produce the weed, so they put gmos (genetically modified organisms to mass produce them.

Miski: But did legalization make you feel safer about smoking weed, knowing you wouldn't be criminalized for it.

Samira: No because legalization didn't change much about criminalization. It still criminalizes black people and the white people profit off of legalization. It seems wrong to me. They're the face of the cannabis industry and they dominate the legal industry, all while the black people are targeted and criminalized for it. Its twisted.

Miski: Have you had any run-ins with the law?

Samira: Yeah me and my friend got pulled over once by a black cop. We were smoking in the parking lot of a park and I think some people called the cops on us. He asked us what we were doing, and she told him we were smoking. I was so scared. I was freaking out. But he didn't give us a ticket. He took our ids and gave it back and made us call a friend to drive the car. He wouldn't let us drive under the influence. He waited until the friend arrived.

Miski: But you didn't get in trouble, or arrested, doesn't that make you feel better about legalization.

Samira: No because he still had a negative outlook on it. Law enforcement still looks down on those who smoke weed. But I know alcohol used to have the same history and it was prohibited and people looked down on it, so hopefully one day it can just be accepted socially too.



THE FUTURE FOR MARIJUANA & MARIJUANA RESEARCH



TRANSDISCIPLINARY RESEARCH

All encompassing research: ecological, socioeconomic, biological, sociological, economic, weed science, and agronomy.



SUSTAINABILITY

Sustainable marijuana cultivation practices that: protect the environment, advance ecosystems, and organic growing.



SOCIAL JUSTICE

Fairness and justice for current offenders, efforts in reducing racist and discriminatory practices post legalization, and social equity funding programs.



GREEN GROWER SPOTLIGHT: CANIVATE



source: <https://canivate.ca/>

Canivate Growing Systems Ltd, is a Southern California cannabis growing operation that prides themselves on prioritizing environmentally sustainable growing methods with reduced energy and water consumption. The facility is not yet opened but is projected to be fully

operational by the end of 2020.

Ditching Traditional Methods

Canivate has designed an innovative model that they claim can produce clean cannabis within a self-contained environment with limited human intervention. This seemingly sci-fi company has not disclosed very much information on the exact process of their automated growing

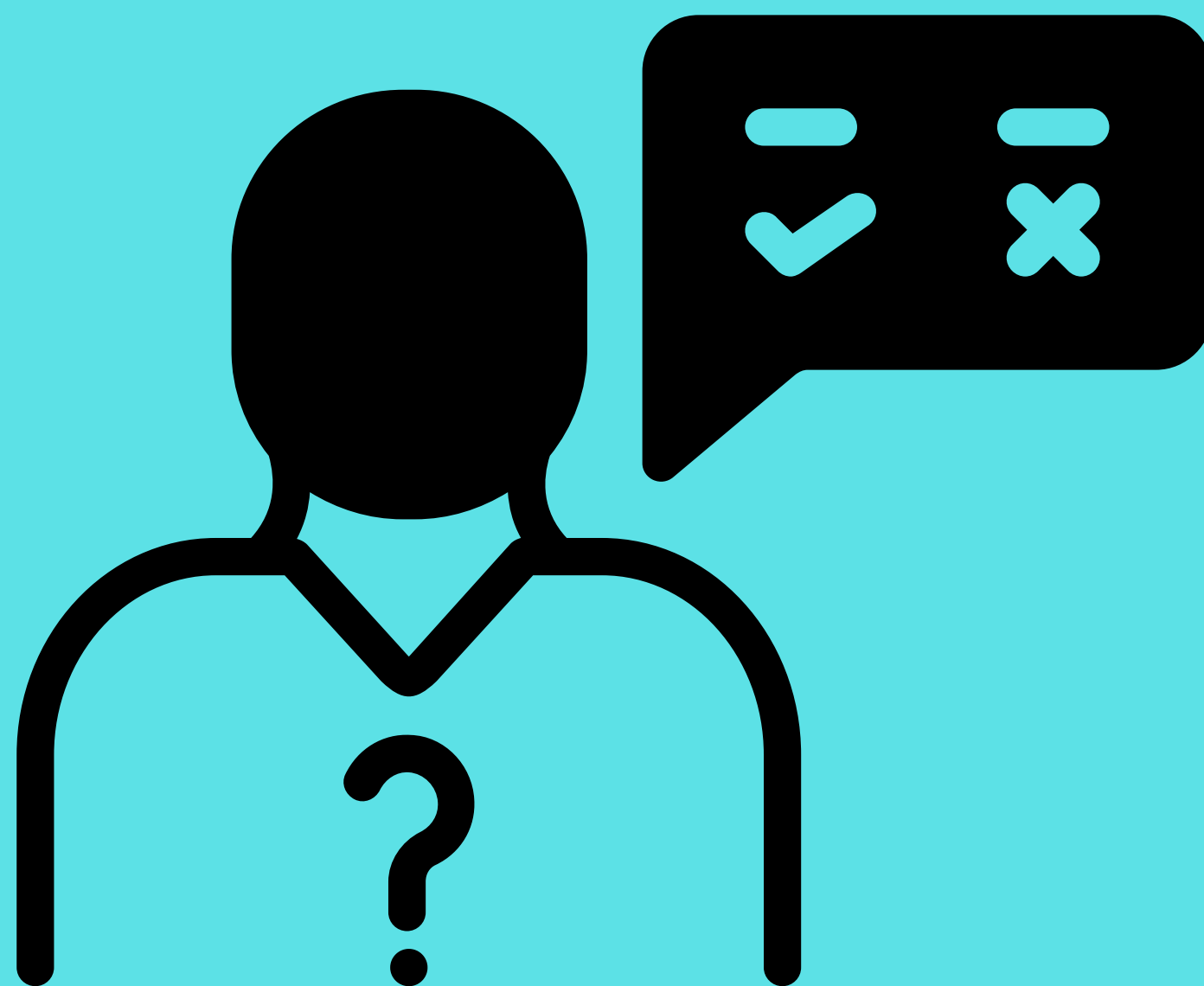
technology. Canivate features an animated rendering that briefly displays their growing operation. With hopes of yielding higher quantities of cannabis with less of an environmental impact, Canivate may be on the verge of groundbreaking cannabis cultivation.

Canivate's model believes consumers are well informed and interested in purchasing supporting sustainable companies.

PHYSICIAN ATTITUDES

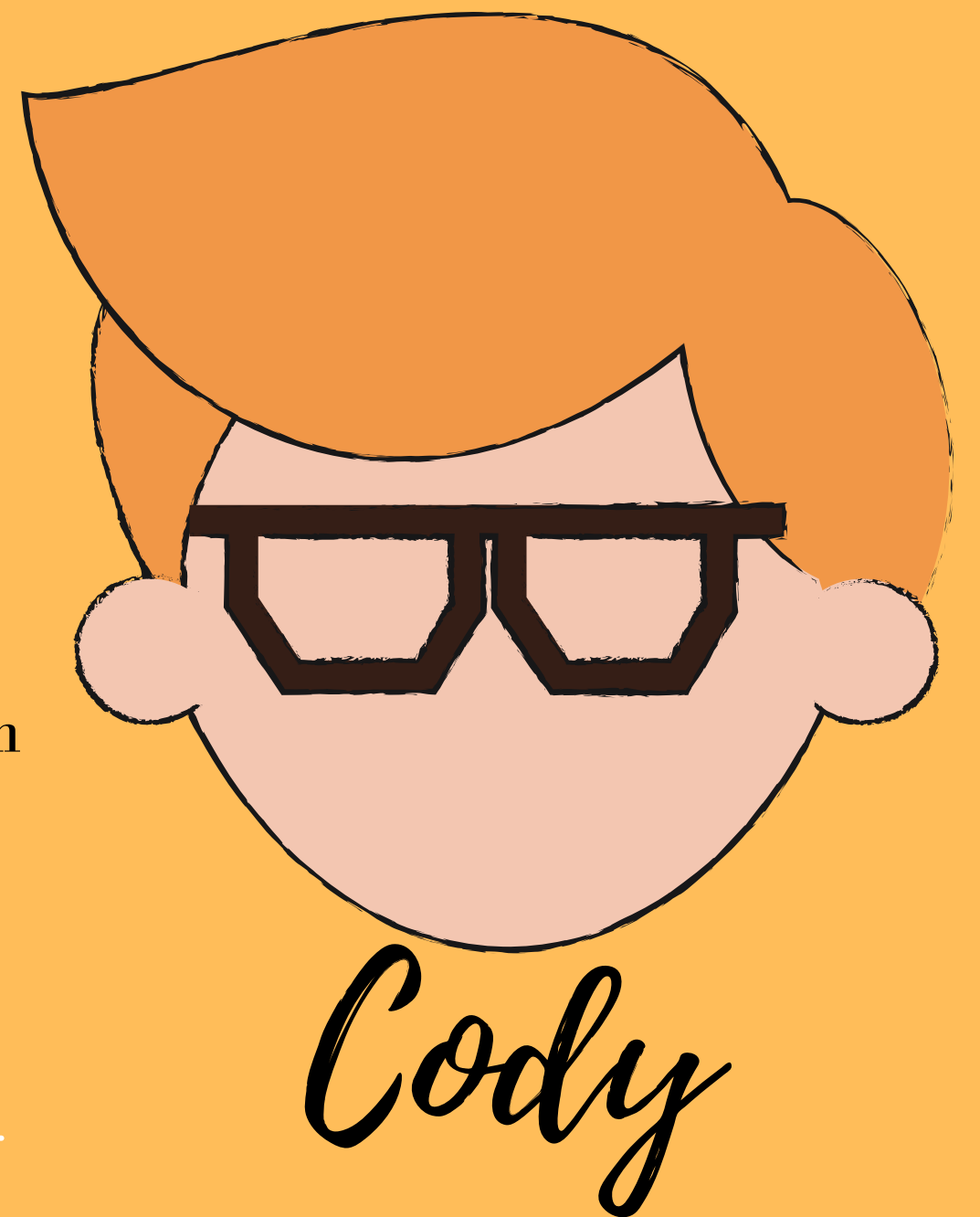


Physicians' opinions are being classified as responsible for influencing the opinions that are being rendered about the marijuana issue and its outcomes. This is likely due to the credibility that physicians hold within their place in society. Research conducted on 303 practicing physicians describes their attitudes toward the legal status of marijuana, analyzing the position they take in relation to their demographic, social characteristics, their work habits and roles, their attitudes toward the United States "drug problem" and their political and religious beliefs (41.). It was discovered that physicians attitudes toward legalizing marijuana is not related to their practices or clinical experiences, but rather aligned their personal factors such as their own religious and political feelings. This is why special attention will have to be paid to the physicians being selected. The study conducted on physicians were carried out through the use of questionnaires and surveys. This research challenges the view that physicians are the utmost authoritative and carry authentic opinions. This study confirms that physicians carry biases and that their testimonies should be questioned in society. The marijuana controversy has been going on since the 80s, when the US failed to develop effective policies for reducing the use of illegal drugs by its citizens. The solution that politicians and government have proposed as of late has been to legalize its use and this has been a topic of debate ever since its initial proposal. Given it's medical impact and widespread use, we are looking to medical opinion and expertise which plays an important role in the adoption or rejection of policies to legalize drugs. For this reason, it is important to proceed with caution when deciding on which Physicians opinions to seriously consider because these may impact legislation.



Interview

Miski interviewed a 22-year-old white male marijuana smoker. She asked him a couple questions in relation to how legalization has impacted her as a white male in society. Because he is from Oregon but lives in California, we seek to discover his experiences with both marijuana legal systems.



22 YEAR OLD WHITE MAN

Miski: At what age did you start smoking?

Cody: 16 years old

Miski: Was it hard to remain below the radar as far as the law is concerned?

Cody: No. my mother grows it for her friend who has a medical card and recreationally for herself. She has a special room in the garage that is her growing room. My mother had me smoke it to calm me down when I was stressing out about an AP Chemistry exam.

Miski: So you never had to buy weed for yourself

Cody: No, never. I always had access to it through my mom.

Miski: Have you had any run-ins with the law?

Cody: Nope, never. I also sold weed recreationally for my mom and never ran into any trouble for it.

Miski: How did you get access to weed when you moved away from home to California?

Cody: I got a medical card. The whole process was a joke. I just told them that I couldn't sleep and they had me fill out paperwork and I just paid a fee.

Miski: So would you say you felt safer after legalization? Like as far as the law is concerned?

Cody: No I would say that I felt more encouraged now that it was made more accessible. I never worried about the law because my mom grows it and I never carried a large amount on me and I have a medical card.

Miski: Have you ever feared being profiled for weed?

Cody: No, never.

Miski: Do you buy illegally or legally?

Cody: I buy legally because I have and had a bad experience with illegal weed because the one I bought was laced with something.

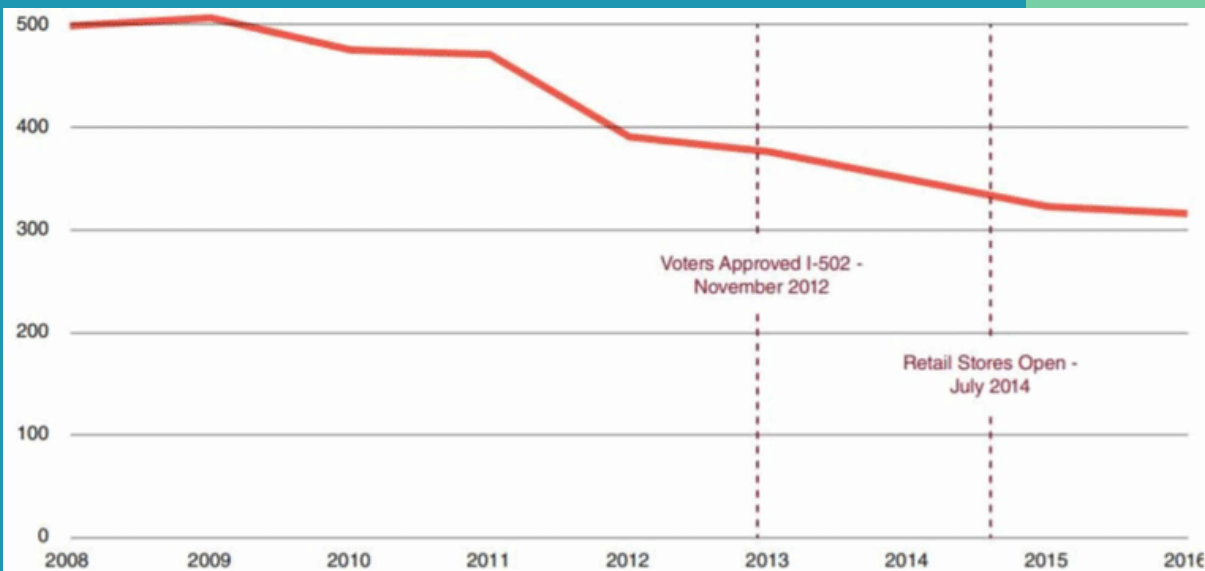
Miski: What are your hopes for the future of marijuana laws and regulations?

Cody: I would like for it to be legalized federally, for there to be a decriminalization of weed because that is a big issue. I would also like for weed to be more controlled and regulated so that people aren't lacing them, and I would like for more hemp to be utilized as a textile because it is the most eco-friendly.

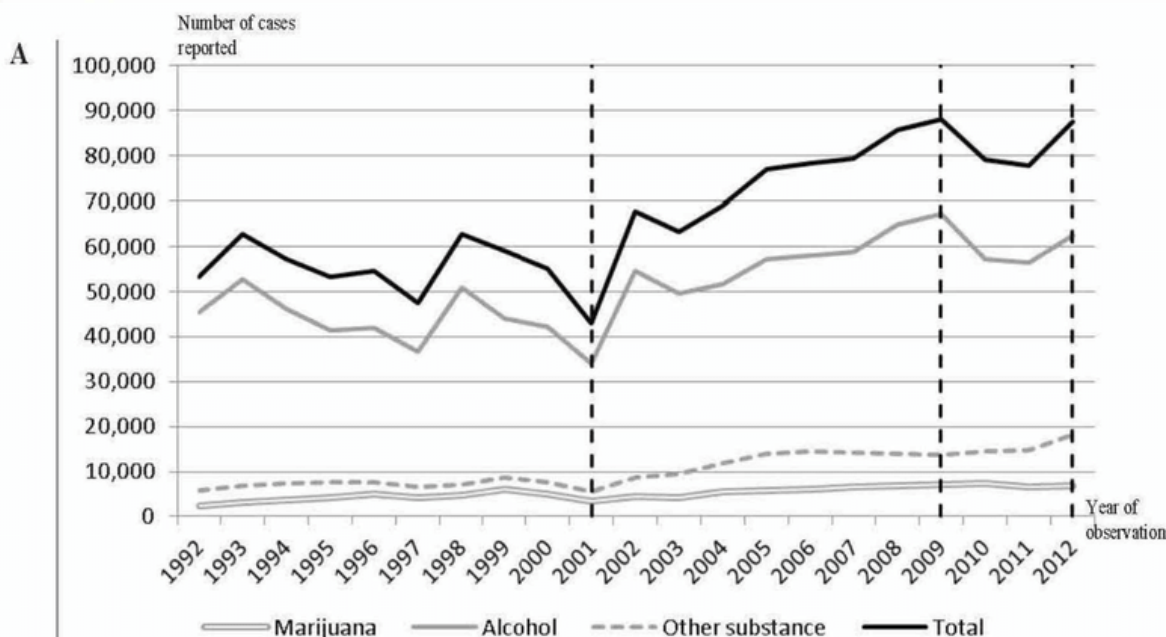
Marijuana and Public Health



When considering the total impact of marijuana on public health, two concerns are brought up by many researchers and physicians. The first one to address is the concern that marijuana legalization will lead to an increase of people driving while under the influence of marijuana, leading to accidents and increased load on health systems. However, as the two graphs below show, evidence indicates this will not happen.



(A) Washington



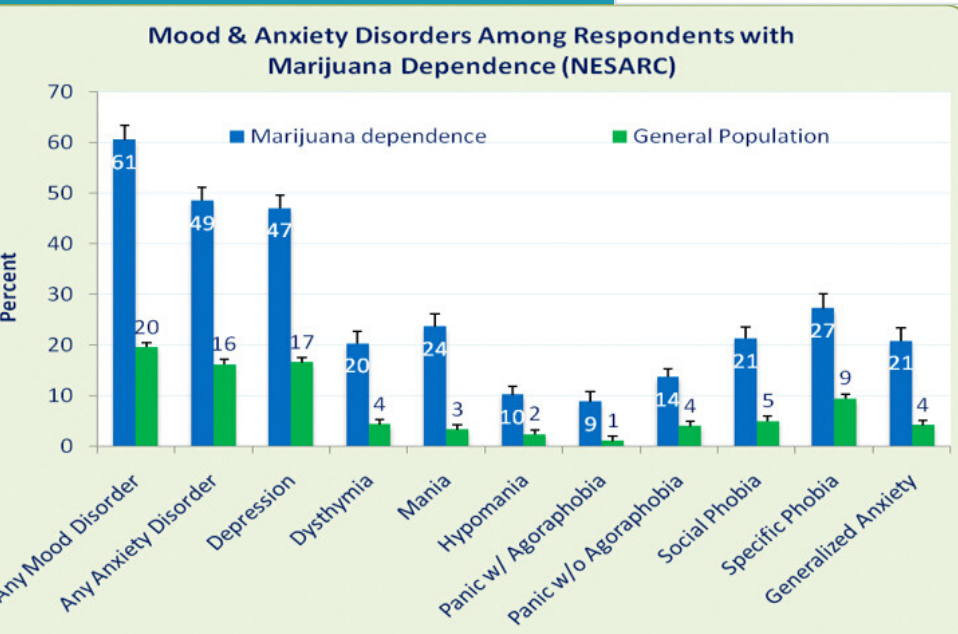
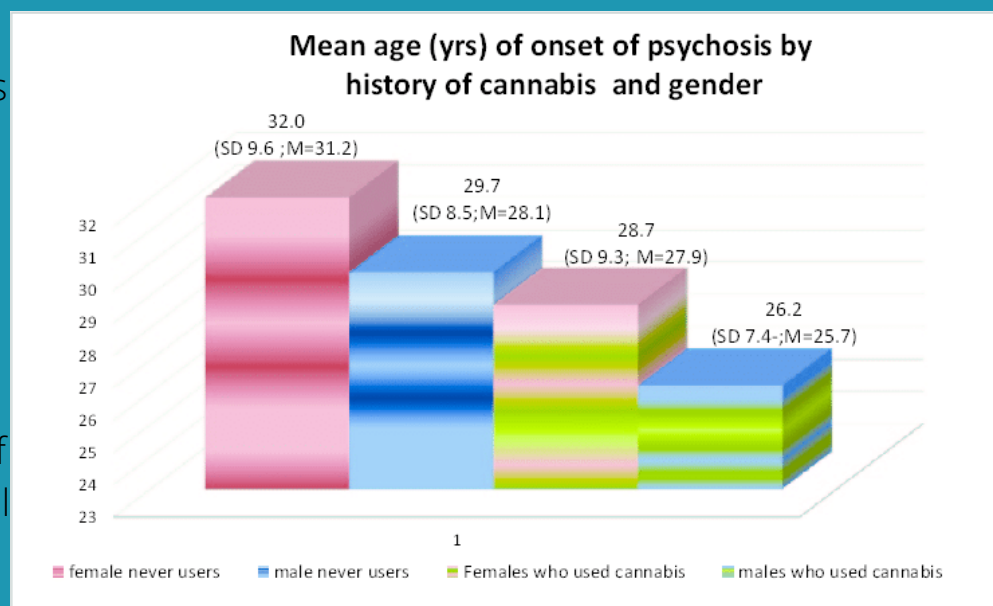
The first graph shows traffic fatalities in Washington state, where marijuana is legalized recreationally. After legalization, fatalities continued to decline. The second graph shows incidents of driving while intoxicated, and shows that marijuana represents a very small portion of these incidents.

Marijuana and Public Health



Another public health concern is the influence that marijuana legalization could have on mental health. It is known that marijuana use is associated with psychosis and is used by many with mental health conditions. While it is accepted that marijuana use in adolescence will have developmental repercussions, the association with marijuana and poor mental health is correlation that may or may not also be causation. For example, more depressed people use marijuana than would be expected, however they may use this due to benefits, real or perceived, that marijuana has in treating depression.

The graph on the right shows the average age of onset of someone's first instance of psychosis, sorted by gender and marijuana use. The graph on bottom shows self-identified marijuana dependence for people diagnosed with certain mental health conditions. The green bars show the prevalence of the mental condition in the general population.



What Does Cannabis Treat Medically?

A Look At Nearly 100 Different Research Studies



Limited Evidence for Treating:

1. Increasing appetite and decreasing weight loss associated with HIV/AIDS
2. Symptoms of Tourette syndrome
3. Dementia symptoms
4. Glaucoma
5. Traumatic brain injury or hemorrhage
6. Social Anxiety Disorders
7. Depressive Symptoms
8. PTSD

CONCLUSION:

There is confusion as to what the health benefits of cannabis are and which symptoms it actually reduces and for which diseases. The list provided above and in the previous page are from nearly 100 research projects from the Institute of Medicine over the past 20 years of consensus reporting. This report analyzes at systematic reviews, the primary literature, and draws conclusions based on the findings. The majority of the evidence provided is limiting and insufficient to support or refute the treatment for many symptoms for various diseases and disorders. This means there needs to be a larger emphasis on addressing research gaps and barriers, increasing funding for more research, improving the quality of research and surveillance capacity to promote the development of conclusive evidence.

What Does Cannabis Treat Medically?

A Look At Nearly 100 Different Research Studies



Effective Treatment for:

1. Chronic Pain
2. Chemotherapy-induced nausea & vomiting
3. Sleeping Disorders



Insufficient Evidence for Treating:

1. Cancer
2. Anorexia Nervosa
3. Irritable bowel syndrome
4. Epilepsy
5. Amyotrophic Lateral Sclerosis symptoms
6. Huntington's disease symptoms
7. Parkinson's disease symptoms
8. Dystonia
9. Schizophrenia & Other Psychosis



There is NO Evidence to Support Treatment for:

1. Achieving Abstinence in the Use of Addictive Substances

Looking Forward

Although California expected a smoother transition of marijuana legalization, it is fair to say that it was not a shock when it fell short of its expectations, given the complex history marijuana has federally and in the state. We critiqued where California fell short, but we suggested some ideas of what could be done differently in order to improve the transition of legalization. California may have a long journey before it sees an ideal cannabis industry, in terms of both business and ethics. However, California seems to have a good starting position by recognizing the adverse effects the war on drugs has had on Black and brown people, and by implementing policies that at least in theory should help Black and brown people recover from those effects. Conducting research to see the potential medicinal benefits of marijuana is difficult, because it is still federally categorized as a Schedule I drug. Nevertheless, there has been a calling from physicians and scientists alike to deschedule marijuana in order to study it more apprehensively. There may still be a stigma surrounding marijuana, but this may be a waiting game. "Going green" for marijuana cultivation can be expensive, but there has been a recent push in society to become environmentally friendly in general, therefore this is a realistic goal. California is known to be a progressive state, and although this does not guarantee that California will modify its current marijuana policies in order to modify them for what we think is better, it does give hope that California can only improve from now on.



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