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The Nuances Of Cannabis Legalization

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Summary

Cannabis history has been long and in recent decades often violent, due in large part to the War on Drugs. In the modern era, the legalization argument has seen increased support around the globe. Those who support recreational cannabis legalization have argued for its social and economic benefits, while a more careful approach reveals how nuanced the question really is by shedding light on the consequence of daily recreational use: addiction.

By understanding the mechanism behind how the drug works, we can make a more educated stance on legalization, and account for the social costs in addition to any benefits that might arise.

Keywords	

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1 Introduction

Deemed as one of the safest drugs available, cannabis, or rather the main psychoactive component THC, has an LD50 (lethal dose for 50% of population) of about 2.594 mol/kg or 815.7 grams. To reach LD50, a person would have to ingest an enormous amount of THC, up to 82% of their body weight, which in practice is undoable. (Psychonautwiki, n.d.)

This, however, can be somewhat deceitful, as the true harm potential is not linked to substance overdose, but rather to substance abuse. This is often overlooked in the rush to legalize weed today.

To form an educated position on whether recreational cannabis should be legalized or should remain a controlled substance, one needs to either experience the full extent of the harm potential of being an addict, or to develop a more nuanced level of understanding on how drug habits are formed and the mechanism of our brain chemistry. This thesis will go over some of the key details to help understand both the pro- and the anti- legalization views.

This has particular relevance at a time when cannabis possession and use is not only being decriminalized, but even legalized to the extent that licensed businesses are retailing it. Cannabis is argued to be not only no more harmful than tobacco, but also a useful generator of tax revenue that can finance the provision of public goods and services. As this thesis will show, such arguments tend to ignore the social costs that cannabis use also generates, with potentially even tragic consequences for those individuals adversely affected.

1.1 Pharmacology & Subjective Effects

The use of medical cannabis has been rising over the past years, as evidence has shown that cannabinoids help with the pain and the symptoms of numerous illnesses. However, recreational use of cannabis has its own sets of problems, starting with the fact that

systematic consumption of anything recreational will eventually lead to pathological addiction and substance abuse.

Cannabis goes by many different names, such as marijuana, weed, hemp etc. There is a difference between marijuana and hemp, as marijuana generally contains a lot more THC content than hemp, which is heavy in its cannabinoid content. The applications and the properties also vary. (Psychonautwiki, n.d.)

There are numerous of different chemical compounds present in Cannabis, which generally vary according to different cultivation methods and strains. Many factors go into what cannabinoids the plant will ultimately contain. These factors include, the strain being cultivated, the temperature the plant grows in, the light used for photosynthesis, the nutrients used to grow the plant, and various others.

Route of administration (ROA) is the method of ingestion and the route the drug will take within the human body. The most common and popular ROA of cannabis is through finely grinding the bud of the cannabis, mixing the grinded cannabis with tobacco, and tightly rolling into a "spliff" using specialized cannabis rolling paper and smoking it. As the cannabis burns, the cannabinoid acids go through a reaction called decarboxylation. For example, the most abundant chemical from the cannabinoid group present in cannabis, delta-9-tetrahydrocannabinolic acid (THCA) decarboxylates, losing its carbon atom from its carbon chain, releasing carbon dioxide in process. As a result of this reaction, THCA converts into its psychoactive form delta-9-THC. As the cannabis smoke is inhaled, it is absorbed by the lungs where it passes through 5 different barriers before being absorbed into the bloodstream. It then travels along the bloodstream to the brain, where it has to pass through another obstacle, the blood brain barrier. Generally, the BBB acts as a semipermeable membrane that maintains homeostasis of central nervous system (CNS) and prevents toxins and pathogens from entering. Finally, the substance enters the brain and starts interacting with its receptors. The two main receptors of the endocannabinoid system (ECS) are CB1 and CB2. CB1 receptors, which are primarily located in the brain, are the ones that are thought to produce the psychoactive effects of cannabis. CB2 receptors, on the other hand, are found in the immune system or immune derived cells, meaning these receptors act as immunomodulators. (Psychonautwiki, n.d.)

Cannabis comes in many strains and forms. The two types of cannabis plants are called Cannabis Indica and Cannabis Sativa. Both can be grown into hybrids of each other. Both differ from each other in terms of effects too. Indica produces a strong body high, causing sleepiness and sedation. Sativa high is more uplifting and energetic.

Typically, in Finland, cannabis comes in a form of a bud, flower, and leaf. Cannabis also comes in other forms, such as Hashish, Kief, Cannabutter infusion, THC wax, hash oil and others. Cannabis is typically smoked or vaporized. Weed infused edibles and cannabis tea are alternatives to smoking it.

THC Wax

Hash oil

Weed flower

Hashish

(Psychonautwiki, n.d.)

To understand the effects of cannabis intoxication, the list below cites the subjective effects index, which is open access research literature based on anecdotal user experience. The text with the subjective effects has been taken from the

"psychonautwiki" website. The effects contain hyperlinks to keywords with more information about each concept. Both the hyperlinks and the information cite can be found at https://psychonautwiki.org/wiki/Main_Page.

It is important to keep this in mind, as well as a healthy amount of skepticism:

1.1.1 Physical effects

- o **Sedation** - Although certain strains of cannabis (e.g. sativas) produce a mild sense of stimulation at low to moderate doses, its effects are primarily sedating and can even be hypnotic. These relaxing properties are suppressed by consciously forcing oneself to engage in physical activities.

   In terms of its stimulating effects, these subjective aspects of THC typically last 2-3 hours, whereas the half-life of CBD, which is more relaxing, is 9 hours. Thus, the first dose of cannabis after a period of abstinence will tend to be far more stimulating than subsequent doses, which must compete with the relaxing effects of previous doses.

   Because the relaxation both persists much longer and shares many of the same pathways as the stimulation, regular ingestion of THC also leads to increased tolerance to its stimulating effects, but not to its relaxing effects.

- o **Spontaneous bodily sensations** - The "body high" of cannabis is extremely variable and depends entirely on the individual strain as well as dose and method of intake. In general, however, it can be described as a relatively pleasurable, sometimes warm, soft, intoxicating, and all-encompassing sensation. At high dosages, it can cause some users to feel shaky or nerve wracked.
- o **Appetite enhancement** - The feeling of increased appetite following the use of cannabis has been documented for hundreds of years and is known colloquially as "the munchies". Cannabis has been shown in recent studies to stimulate the release of the hormone ghrelin which is normally released by the stomach when empty as a signal for the brain to search for food.
- o **Appetite suppression** - This effect may present itself at the very beginning of the intoxication and is likely due mostly to the cannabinoid THCV.
- o **Gustatory enhancement** - Cannabis is regularly known to improve the taste of foods.
- o **Bodily pressures** - This can be described a subtle or distinct pressure felt behind one's eye(s).
- o **Bronchodilation**

- **Changes in felt gravity** - At extremely high doses, many users report a feeling of being pulled backwards across vast distances (sometimes at powerful speeds). This sensation progressively increases in intensity and often eventually becomes unbearable if one leans backwards or lies down; however, it disappears altogether once the user sits up or leans forward.
- **Increased heart rate** - Decreased blood pressure can result in an increased heart rate, although this varies depending on the user.
- **Decreased blood pressure**
- **Dizziness** - Cannabis has the potential to cause dizziness at very high doses. However, this effect is far more inconsistent than substances such as alcohol.
- **Dehydration**
- **Dry mouth** - This is known colloquially as "cotton mouth" in popular American and United Kingdom culture. Edible forms of cannabis can make this effect feel much more intense and uncomfortable.
- **Increased perspiration** - This effect is experienced almost exclusively with the convection of solvent extracted hash oil and appears almost immediately upon exhalation. This is likely due to the high THC concentration and a relatively rapid onset that can result in a significant decrease in blood pressure, often causing the user to sweat.
- **Insomnia** - Chronic intake is associated with insomnia.
- **Motor control loss** - This substance causes a partial to moderate suppression of motor control which intensifies proportional to dose, but rarely results in a complete inability to walk and perform basic movements.
- **Muscle relaxation**
- **Muscle spasms** - This effect is usually very subtle and is more likely to occur at high doses.
- **Nausea** - At heavy dosages and overdoses, cannabis can be nauseating. This usually passes after the first 30 or 40 minutes of the intoxication and tends to transition later into nausea suppression.
- **Nausea suppression** - Cannabis is effective for suppressing nausea induced by both general illness and substances. It is considered an effective treatment for chemotherapy-induced nausea and vomiting (CINV) and is a reasonable option in those who do not improve following preferential treatment.
- **Pain relief** - This substance has been reported as useful for treating certain headaches and chronic pain, including pain caused by neuropathy and possibly fibromyalgia and rheumatoid arthritis.
- **Perception of bodily lightness** *or* **Perception of bodily heaviness** - Depending on the specific strain of cannabis, one can find themselves with a body which can feel either physically heavier or lighter than it usually would in a style that is entirely dependent upon dose or tolerance of the individual.
- **Physical euphoria** - This rarely exceeds mild to moderate levels of intensity, and although this effect may be present for many users

there are also a number of individuals who report experiencing no euphoria at all. For some, this effect is notably more prominent with edible forms of cannabis.

- o **Red eye** - Marijuana induces corneal vasodilation (so called red eye) and a reduction of intraocular pressure (IOP). Naphazoline eye drops relieve red eyes.
- o **Seizure suppression** - There are many anecdotal reports of the successful treatment of seizures in epilepsy with the use of low THC/high CBD marijuana. However, there is not enough scientific evidence to draw conclusions about its safety or efficacy. Studies in animals have found that cannabidiol, tetrahydrocannabivarin (THCV), and other cannabinoids have anticonvulsant properties.
- o **Tactile enhancement**
- o **Vasodilation** - THC decreases blood pressure which dilates the blood vessels and increases blood flow throughout the body. The arteries in the eyeball expand from the decreased blood pressure. These enlarged arteries often produce a bloodshot red eye effect and is the basis for its effectiveness at treating glaucoma. Studies have shown cannabis (smoked or eaten) effectively lowers intraocular pressure by about 25%, as much as standard medications.

1.1.2 Visual effects

- Cannabis inconsistently induces visual and hallucinatory states at higher doses. These hallucinations are very mild and ill-defined compared to the effects of hallucinogens like psychedelics, dissociatives, and deliriants.

  - o **Color enhancement** - This effect is often faint but has been known to increase in its likeness and/or appearance among "regular" users of psychedelics.
  - o **Acuity suppression** - THC is known to decrease intraocular pressure. This can sometimes result in blurry vision for some people.
  - o **Brightness alteration** - THC has been shown to modulate the activity of cone cells in the eye. This can cause an increased sensitivity to light, causing one's vision to appear brighter than normal.
  - o **Tracers** - This effect can be seen at high doses and is generally quite mild. It generally does not extend past level 2.
  - o **Geometry** - Cannabis is capable of inconsistently inducing mild psychedelic geometry at extremely high doses within many users who also regularly use psychedelics. It is capable of inducing these in a visual style which seems to be an averaged-out depiction of all the psychedelics one has used within the past. These rarely extend beyond level 4 and are considered to be mild, fine, small, and zoomed out (but often well-defined).
  - o **Internal hallucination** - The internal hallucinations of cannabis are extremely variable in their appearance depending on the

dosage, tolerance, and the individual's brain chemistry. They are very inconsistent and for some even rare but can be described as being fainter in appearance when compared to traditional psychedelics and do not seem to be as regularly composed of visual geometry.

The most common way in which they manifest themselves is through hypnagogic scenarios. They are most common during high dosages in dark environments and can be comprehensively described through their variations as both lucid and delirious in believability, fixed in style, autonomous in controllability, equal in new experiences and memory replays in content and are primarily geometry-based in style.

- ○ **Peripheral information misinterpretation** - This very inconsistent effect tends to be mild and fleeting in contrast to other more powerful psychoactive substances. This effect rarely occurs on cannabis alone but when it does it is often in high dosages and/or when the individual has a low tolerance. It is more likely to manifest itself in certain environments as opposed to others and is more likely to happen if one has used stronger substances recently, typically within the past 24 to 36 hours.

1.1.3 Cognitive effects

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  - ○ **Amotivational syndrome**
  - ○ **Anhedonia**
  - ○ **Anxiety** *or* **Anxiety suppression**
  - ○ **Analysis enhancement** - This effect is significantly less prominent and consistent than it is with serotonergic psychedelics and stimulants.
  - ○ **Analysis suppression**
  - ○ **Conceptual thinking**
  - ○ **Cognitive euphoria** - This effect is generally mild and usually only present during the onset and peak of intoxication
  - ○ **Creativity enhancement**
  - ○ **Delusion**
  - ○ **Depersonalization**
  - ○ **Derealization**
  - ○ **Dream suppression** - It is commonly reported that regular cannabis use before sleep results in a complete absence of dreams. A day or two of abstaining from cannabis results in an intensification of dreams for a short period of time.

This claim is supported through studies that demonstrate that measurably reduced eye movement activity and REM states occur

when one falls asleep in the THC condition. This state is strongly associated with dreaming. The same study also reported a REM rebound effect; there is more REM activity during the withdrawal from THC.

- o **Decreased libido** and **Increased libido** - Although cannabis is commonly reported to increase sexual desire and heighten its pleasure it has also been reported to decrease one's libido as well.

The decrease in libido typically only occurs during the onset of the intoxication whilst the increase in libido commonly occurs during the offset or after the peak effects. However, these components are inconsistent and it is possible for one of these effects to occur without the other.

- o **Emotion enhancement** - The most prominent cognitive component of the cannabis experience is the way in which it enhances the emotions one is already feeling proportional to dose. This can result in euphoria, extreme laughter, and increased immersion within tasks and activities or it can result in anxiety and paranoia depending on the user's current state of mind.
- o **Feelings of impending doom** - This occurs in high doses, it consists of extreme anxiety and paranoia. It can be compared to a mild "bad trip" on psychedelics.
- o **Focus suppression** and **Focus enhancement** - This can depend on the user, dose, method or the strain of cannabis used. Higher doses tend to cause focus suppression while lower doses can increase one's focus.
- o **Immersion enhancement**
- o **Increased music appreciation**
- o **Increased sense of humor**
- o **Memory suppression** - Cannabis is known to suppress short-term memory due to inhibition of glutamate neurotransmission in the hippocampus. This effect primarily effects short-term memory, making ego death or long-term memory suppression very unlikely.
- o **Mindfulness**
- o **Novelty enhancement** - Relatively consistent, but not as pronounced as with psychedelics. This effect can become more noticeable and/or consistent if the individual regularly takes psychedelics.
- o **Paranoia** - All cannabinoids are capable of inducing paranoia at high doses, with chronic administration, or when administered alongside psychedelics or stimulants.
- o **Personal meaning enhancement**

- o **Psychosis** - The prolonged usage of THC may increase one's disposition to psychosis, particularly in vulnerable individuals with risk factors for psychotic illnesses (like a past or family history of schizophrenia).
- o **Sleepiness** - This effect depends mostly on dose and/or strain of the plant and is most prominent after the peak subsides.
- o **Suggestibility enhancement**
- o **Thought connectivity** - Cannabis can often cause many wandering thoughts and ideas at most doses.
- o **Thought deceleration**
- o **Time distortion** - Cannabis has been commonly reported to alter one's sense of time. The distortion that occurs is generally mild and is most commonly reported to be in the form of time expansion.

(Psychonautwiki, n.d.)

As the effects are observed, it becomes apparent that, similarly to opinions and subjective truths, the effects are also subjective to the point when often one of the desirable effects or one of the side effects persist with one subject, while the opposite effect persists with another subject. It indicates that regardless of how similar we all are as far human DNA goes, it is still very hard to predict which kind of reaction a person will get as a result of consumption.

It should be noted that most of the effects are in fact synonymous with most of the other cannabis use cases. The deviations have to do with a plethora of different combinations of factors that affect the final effects. Some are linked to the environmental, social, and even cultural factors. Some relate to genetic factors.

2 The History of Cannabis

2.1 How cannabis was used traditionally.

Cannabis may not be as old as wine and cheese but has a very long history as well as cultural and religious significance. It has been used for recreational, medicinal and for material purposes for thousands of years. The modern era of marijuana legalization can

be long and slow in the acceptability of cannabis. But where did this modern marijuana phenomenon come from, and why is it so widespread?

It is thought that the history of cannabis dates back three millenniums BC, to the Stone Age, when cannabis seeds and fibers were used for clothing and shelter. During the Neolithic Age, people discovered that cannabis could be used as a food source as well. Cultivation of cannabis spread to the Far East, where it was used in traditional medicine. (Thcmuseum, n.d.)

However, the first records of cannabis use date 12,000 years back in China, where it was used as fiber. Later, the Chinese started using marijuana as painkiller, as well as a food additive. (recovery, n.d.)

In therapeutical notes from Ancient Greeks and Romans, cannabis was reported as a very popular medicine. The Greek physician Pedanius Dioscorides recommended it to be used as a painkiller and an anti-emetic.

In Medieval Europe, cannabis was used as a textile fiber, and by the Middle Ages, Europeans had discovered that cannabis seeds and fibers could be used to make paper, and the plant became a major source of paper in Europe. Cannabis was also used to make medicines, including ointments, tinctures, and extracts. However, it was not until the 19th century that cannabis became popular as a recreational drug. This was largely because the invention of cigarette, which was invented in the late 1800s. Cigarettes quickly became widespread, as the main psychoactive ingredient in tobacco, nicotine, is one of the most addictive drugs in the world. This was not known at the time public, which contributed to its popularity. The consumption method of rolling drugs into a cigarette and smoking it became prevalent and by the end of the century, cannabis was used in cigarette and cigar form, making it easier for people to consume. (recovery, n.d.)

The use of cannabis was also closely linked to spirituality, especially in Hinduism and Buddhism. "Bhang" is an Indian made drink that consists of cannabis, milk, leaves, sugar, and spices. It was used for its anti-phlegmatic, as well as anesthetic effects. The Indians even had a legend about a God named Shiva, also known as "The Lord of Bhang". (recovery, n.d.)

The use of cannabis was also closely linked to the African American culture, where it was traditionally used in religious rituals and spiritual healing. African Americans also used cannabis to help with the symptoms of sickness and to improve appetite. The first African slaves brought cannabis with them to the New World. At the end of the 19th century, as the popularity of cannabis use was on the decline in the Western world, scientists started to research the plant, beginning with studies on its chemical composition. (Thcmuseum, n.d.)

Columbus, the famous explorer, first brought marijuana to the United States in 1492. At the time, the plant was used mostly for its fibers and as a medicine. But during the next two centuries, marijuana use in America would change dramatically, becoming more and more associated with intoxication and being "stoned." (Thcmuseum, n.d.)

During the World War II, many American soldiers returning from the Pacific theater reported that they had developed symptoms of PTSD after being exposed to cannabis. This connection was made by many American doctors, who were starting to study the effects of cannabis on treating various forms of mental illness. This was the first time that the public became aware that there was more to marijuana than just being "stoned", it was also the first time that the public saw a connection between marijuana use and mental illness. The American public was starting to realize that there were benefits to marijuana use as well as risks. This was the beginning of the "reefer madness" era in America. All over the country, newspapers, magazines, and radio stations were starting to report on the "dangerous" connection between marijuana and mental illness. This was also the time when many Americans started to associate marijuana use with being uncivilized, lazy, and irresponsible. (recovery, n.d.)

2.2   Hemp cultivation for clothing in different parts of the world.

Contrary to many people's beliefs, cannabis is not only useful for getting high, as there are actually a variety of different ways cannabis can be used to improve quality of life. Many people use cannabis to help with pain, anxiety, and depression. But cannabis can be used in more ways than just as a painkiller or an antidepressant. It can also be used to make clothes and even as a construction material.

For example, in the USSR, hemp used to be the oldest branch of crop production and in 1956 some of the largest hemp plantations in the world were concentrated in the USSR, ranking first at 620,000 hectares. The hemp was then used to create hemp paper, threads, construction materials, as well as some food ingredients, like cannabis oil, flour and even some spices. The USSR even had an award for the best hemp cultivators. (literature., 1959)

"For mastering cannabis cultivation"

3   The War on drugs, its methods and its failure.

3.1   Why and how the war on drugs started.

The history of cannabis is a long and often, counterintuitively, violent one, with many false claims and disinformation. It is important to be able to sort and differentiate falsehood from fact when it comes to cannabis related information, as with any other information, with an objective to get to the truth. Why did the war on drugs start? Who were the main culprits and what were their real intentions? How did they go about enforcing these restrictions?

The war on drugs continues to cause many problems and deaths around the globe. Cannabis has been subject to similar criminalization as alcohol in the 1920s. Back then, people were also using alcohol in large amounts, but there was no talk of "drugs" or "alcoholism". Prohibition of alcohol in the United States was ended in 1933, but in 1937, Congress effectively criminalized marijuana. The following year, Congress passed the

Marihuana Tax Act, which imposed a tax on both sale and production of the substance. The legislation also prohibited doctors from prescribing or administering marijuana, which effectively made it an illegal drug. The Marihuana Tax Act made it impossible for many people to afford marijuana, which caused its use to mostly take place in secret. The Act also led many people to believe that marijuana was very dangerous, which resulted in a rise in moral panic about the drug. Many people believed that marijuana made users lazy and gave them a "marijuana munchies." This led to the passage of the first federal laws against use of the plant. The legislation effectively placed marijuana on the same level of illegal prohibition as drugs like cocaine, heroin, and methamphetamine. The legislation did little to stop the spread of marijuana throughout American society, however. (Thcmuseum, б.д.)

During the next few decades, the United States continued to implement a series of increasingly harsh anti-marijuana laws. These laws had a significant impact on the availability and popularity of the drug. For example, in the 1950s and 1960s, marijuana was completely illegal in every U.S. state. As a result, it was rarely available even on the black market.

3.2   The main culprits of cartel wars and their impact on society.

In 1971 President Richard Nixon declared his "war on drugs". A year later, the commission led by Raymond P. Shafer presented to Congress its report entitled: "Marihuana, A Signal of Misunderstanding". The report rejected the notion that cannabis was dangerous and the idea that cannabis should be illegal. It also declared that the federal government would use all available federal resources to end the drug crisis. This included the use of military force. (Vox, n.d.)

These recommendations were ignored by the Congress, which instead passed the Controlled Substances Act, which placed cannabis in the same category as heroin and cocaine. This effectively led to the creation of the DEA in 1973, the first agency of the federal government to be created solely for the purpose of fighting drugs. The Controlled Substances Act effectively gave the government the power to control the production and distribution of "dangerous" drugs and also gave the government the power to control their use. This was the beginning of the federal government's war on marijuana. (dea, n.d.)

The Mexican Revolution in 1910 had a huge impact on the use of marijuana in the United States. After the revolution, Mexican cartels started exporting marijuana to the United States. In the 1920s, Mexican cartels started producing marijuana on a large scale, which greatly increased its popularity. During the same period, Mexican immigrants started using the word "marijuana" to refer to the plant that was grown in the United States, which was starting to be called "cannabis" in other countries. By the 1930s, many Americans were using marijuana in their homes for recreational pleasure. (dea, n.d.)

3.3   Why it failed

The main problem with war on drugs has to do with its core and scope, which, roughly speaking, are based on the simple equation: "no drugs, no problems." So, most of the efforts of the US governments and the DEA have been aimed towards total eradication of the supply of drugs. However, this disregards one of the most fundamental forces of the market, namely "supply and demand". By reducing the supply of a product without reducing the demand for the product, the price will inevitably rise. Typically, this lowers sales for many available products with some price inelastic exceptions like energy, computer parts or other electronic parts, as well as drugs. It is next to impossible to remove the demand for drugs artificially. It would be necessary to brainwash everybody with decades of anti-drug propaganda and even then, it would be most likely set for failure, as history has taught us. The demand will always be there and no amount of prohibition and information war is going to change that. The drug's market is not price sensitive. By eradicating the supply, the actual effect is the encouragement of production of more illicit substances, recruitment of more drug traffickers and the formation of cartels, further increasing availability.

This is known as the "balloon effect". A perfect example of the balloon effect is how the US government tried to stop the production of crystal methamphetamine by strictly regulating precursors, or the chemicals used in the production of methamphetamine. This forced large scale meth operations out of business. However, the unintended consequences of this was that with the increased availability of turfs and demand, thousands of smaller-scale manufacturing operations took the opportunity and started cooking meth in mostly smaller towns and rural communities. Using P2P (Phenylacetone) or the chemical precursor for meth production that the US government

started regulating closely was not the only way to synthesize methamphetamine. Other reaction methods and precursors quickly became popular. In response to the growth of homecooked meth, the US government started regulating the other precursor chemicals, which eventually drove small-scale operations out of business too. Nevertheless, the demand stayed untouched, which resulted in Mexican drug cartels taking over, penetrating the market with high quality, mass-produced crystal meth. Their meth was better than before and they already had accumulated a lot of experience in smuggling drugs across the border. (idpc, n.d.)

Prohibition, to some extent, prevents a certain amount of people from taking drugs. In the process, however, it impacts society negatively. Most of the problems associated with drug use are caused by prohibition:

- Illicit substances are often quite potent, as storing as many potent drugs in as little space as possible yields a higher profit.

- Prohibition leads to violence between gangs. Cartels cannot access the legal system to resolve disputes, leading to drug violence.

- The prisons of the United States are packed with non-violent drug offenders, living off of the tax payer's capital.

Harm reduction has been proved to be a far more effective strategy to combat the problems associated with drug use. (biomedcentral, n.d.)

Over the succeeding decades, the US federal government continued to implement a series of increasingly strict anti-drug laws. These laws had a significant impact on the availability and popularity of the drug. For example, in the 1980s and 1990s, it was mostly illegal to possess or use cannabis in the United States. As a result, it was rarely available on the black market. At the same time, it was becoming increasingly legal to use cannabis for medical and recreational purposes in the United States. This gap in the law allowed many Americans to access high-quality marijuana while still being illegal for most

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of them to possess. This is the main reason why marijuana use is higher today than it was 50 years ago. (drugpolicy, n.d.)

At the same time, in 1970, the National organization for the Reform of Marijuana Laws (NORML) was taking the side of ending marijuana prohibition. This was the beginning of the modern legalization movement. Over the next few decades, the legalization movement continued to gain momentum. Marijuana eventually became decriminalized in 11 states, beginning with Colorado and Washington in 2012. Earlier in 1996 California had legalized medical cannabis. This was the first time that the government acknowledged that cannabis was not as dangerous as it had previously claimed. It also allowed the state government to collect much-needed tax revenue. Yet already by 1976, the Netherlands had decriminalized what it deemed "soft drugs," which included cannabis. This was an important first step in the legalization movement. (drugpolicy, n.d.)

4   The Present day and progressive legalization. Its pros.

4.1   Active legalization around the globe

In the 1990s, the US federal government launched an unprecedented series of drug prevention campaigns. As a result, marijuana use in the United States continued to decline. At the same time, however, the federal government continued to imprison more people for marijuana offenses. By the end of the decade, marijuana use was back to medical purposes only in 29 states by 2017. (abcnews, n.d.)

In 2010 California proposed to legalize use of cannabis for adult use (Proposition 19), which failed. In 2012 President Obama's administration cracked down on medical marijuana, closing most of the dispensaries. (abcnews, n.d.)

In 2012, Colorado and Washington state legalized adult use of cannabis, and were later joined by Alaska and Oregon in 2014, and subsequently other states as part of a more widespread decriminalization of medical and recreational use. This continues to create a divide between states that have legalized cannabis and those that have not. As a result, some states that have not legalized cannabis have seen an increase in traffic fatalities related to marijuana. This is because the federal government continues to enforce prohibition in the states where it is still illegal. This has led to increased tax revenues in some states that have legalized cannabis, but it has also led to a decrease in the number of people in prison for marijuana-related offenses in those states that have legalized cannabis. (washingtonpost, n.d.)

Recently, cannabis has become a major point of interest for researchers and governments around the world. However, it is often misunderstood and misrepresented in the media, which can lead to a society that is misinformed about the facts regarding its use. This lack of knowledge can lead to negative consequences for those who use it, as well as the general public, in a variety of ways.

Without a doubt, the main motivation for legalization of cannabis is for the economic and medicinal benefits, as well as making it easier to research the plant and its effects further. As time passes, more and more states and countries are moving towards the decision to make cannabis use legal. To give an instance, New Jersey, South Dakota, Montana, and Arizona made cannabis legal for recreational purposes, following the way of Colorado and Washington. Virginia came to this conclusion most recently. (investopedia, n.d.)

4.2   The economic benefits

Clearly, cannabis has an influential role in the economy of each country, whether it is legal or not. It is a multi-billion industry and is expected to grow manifold in coming years. This has led to an increase in demand for marijuana and related products, such as CBD oils. As a result, there has been a spurt in the growth of the hemp industry over the past few years. This has created many jobs and has made many people financially independent. (debt.gov, n.d.)

It is also helping a great deal in the development of various other industries as well, including agriculture, cosmetics, medicines and even tourism. It is likely that if the usage of cannabis become legalized all over the world within a span of a few years, this could lead to an increase in demand for hemp and cannabis products which in turn could create many more jobs and could also ensure that people will be able to make money even in times of economic recession. The only question that remains is, will other countries follow the footsteps of US and other countries that have legalized cannabis and will create jobs or will they wait and watch the US reap the benefits first?

The clothing industry has benefited the most from cannabis legalization. It is now possible to find various brands that specialize in manufacturing clothes, with designs related to cannabis. This has led to an increase in demand for hemp clothes as well. The US is expected to become a major producer as well as consumer of hemp products. (forbes, n.d.)

In fact, many countries are now focusing on improving their tourism infrastructure, so as to make the visitors feel at home and have a pleasant experience. This in turn will promote tourism industry and help in generating more jobs. This will also help in reducing the pressure on economy of respective countries. On the other hand, it will also help in generating revenue for the nations as well as providing employment to locals. (emerald, n.d.)

4.3   The social benefits

The social benefit of cannabis is the most asked benefit of this legalization. Firstly, legalization of cannabis is favorable for tourism. Secondly, it creates jobs and has a high enough demand that it would be highly beneficial economically speaking. Thirdly, it is reliable for the treatment of diseases and it has health benefits. The social impact of the legalization of marijuana is believed to have benefits for all ages, races, and social classes. Marijuana legalization has been linked to lower rates of opioid-related overdoses, harm, and death, which can improve public health significantly. (bmj, n.d.)

It has also been shown to reduce the number of people who are arrested for marijuana-related offences, freeing up resources for police to focus on more serious crimes. The

implementation of marijuana legalization has also been linked to increases in the number of women who seek out cannabis for medical purposes, which can improve their quality of life and reduce their dependence on pharmaceuticals. (cnbc, n.d.)

While cannabis can help treat certain medical conditions, it also has many other social benefits. It can help reduce the stigma of mental illness and help those with PTSD and other disorders feel more comfortable opening up about their symptoms. It can also help meeting new people. It can help reduce the risk of opioid abuse by providing a safer alternative to opioids, and it can help reduce alcohol use. (forbes, n.d.)

In this connection, the biggest social benefit of cannabis may be the ending of the opioid epidemic. The legal cannabis market can help reduce the black-market sales and provide more control over the quality of the products being sold. This will help limit the number of people who abuse prescription opioids, which is the number one killer drug in the United States. The legal cannabis market can also help reduce the number of accidental opioid overdoses. (forbes, n.d.)

Further, it is estimated that marijuana legalization could generate much more income in annual tax revenue for state and local governments, which could be invested in education, job creation, and other social services. This revenue could also help reduce the burden of government programs like Social Security and Medicare, which are currently threatened by the growing cost of healthcare. Finally, the legalization of marijuana is expected to improve the social fabric of our society, reducing the harmful impact of cannabis on the developing brains and minds of youth. (investopedia, n.d.)

4.4   The health benefits

Cannabis is a highly-researched drug, with an abundant and constantly growing literature dedicated to its study. The FDA has approved prescription cannabis for several conditions, including treating nausea associated with chemotherapy, epilepsy, multiple sclerosis, and HIV/AIDS, among other conditions. It has been shown to help people with insomnia, anxiety, and chronic pain, among other conditions. (fda, n.d.)

It has also been shown to be a promising treatment for several forms of cancer, as well as neurological conditions such as epilepsy and Parkinson's disease. Many patients with these conditions have found that using cannabis has improved their quality of life, having enabled them to live without the constant pain and other symptoms that limited their activities. (epilepsy.com, n.d.)

An increasing number of children are also being treated with cannabis, which has led to an increased demand for products that can help ease their symptoms. One of the most common products used for this purpose is cannabinol (CBD), which is a non-intoxicating compound found in cannabis. Studies have shown that CBD is effective in treating several conditions that are associated with the central nervous system, including epilepsy, anxiety, and insomnia. It has also been recognized as a therapeutic agent in the treatment of anorexia. Studies on animals have also shown, that cannabis has anti-seizure effects. (epilepsy.com, n.d.)

The most important health benefit of legalizing cannabis is that it is very hard to research an illicit substance. The researchers must have approvals for cannabis research. The bureaucracy slows the process. By legalizing cannabis, the research on cannabis will increase significantly, helping us further understand the full applications of the plant. (investopedia, n.d.)

5   The Nuances

5.1   "The gateway argument"

The most prominent argument against recreational cannabis legalization is the development of tolerance and later, addiction. Long-term consumption often leads to changes in the biochemistry of the daily user. The risk of psychological dependence increases along with the consumption rate. As consumption rises, mundane or regular activities become increasingly tedious and boring. This is due to how cannabis affects and changes to the user's brain's reward system through dampening the brain's dopamine reactivity, causing the user to seek more or even other forms of drugs, leading to poly-addiction. (cdc, n.d.)

Cannabis potentiates other psychoactive substances. Alcohol is often consumed alongside cannabis to produce a more potentiated euphoric effect. Cannabis users are often addicted to nicotine containing products, which further decreases dopamine functionality in brain. (pubmed, n.d.)

Dopamine is a naturally occurring organic chemical that acts as a neurotransmitter. It is known to be responsible for being a motivational component of the brain's reward-system. Conventionally, dopamine gets released with the anticipation of being rewarded for a certain activity. Anything from finishing a challenging task to eating a large meal when hungry releases dopamine, that feels good to experience. When psychostimulant drugs are introduced to the brain, they often mimic dopamine's structure. Habitually taking substances like nicotine, cocaine, or methamphetamine tricks and rewrites the brain to constantly seek this release, resulting in development of psychological dependence and later, physiological dependence. Cannabis also stimulates the dopamine system which rapidly triggers neuroadaptations, leading to a bad habit. (pubmed, n.d.)

Daily consumption often leads to drastic changes to the behavioral pattern of the user. These anomalies add up into antisocial behavior and stagnating psychological health.

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Mental illness affects the cannabis-induced high. Schizophrenic and bipolar users may experience episodes, as cannabis worsens the symptoms of these psychological diseases. Often the person would not know they are bipolar, only to find out when the symptoms start occurring. A higher risk of developing or accelerating the progression of a pre-existing mental illness or disorder. (ncbi, n.d.)

Smoking cannabis as a habit is detrimental to the person's development as an adolescent. (ncbi, n.d.)

In most cases, cannabis for recreational use can become a gateway drug to other, worse drugs (in terms of social, economic, and psychological harms). This is most evident in the opioid epidemic, where initial exposure to prescription opioids leads to much more severe addiction. The risk of opioid addiction is exacerbated by the fact that the majority of prescription painkillers are not designed for long-term use. The opioid epidemic is not caused by a single drug but is a symptom of a broader phenomenon in which a variety of drugs (both legal and illegal) are abused in the population. It is not clear why this is so, but it may be because of how the drug is used. It is a matter of personal preference. For those who use cannabis recreationally, the risk of addiction is much lower. However, those who use the drug for medical purposes, where use is reinforced by society's social norms. (cdc, n.d.)

One of the most common and easily interpreted examples of this is based on the availability of the drug and is an argument for the full legalization of the plant. It has to do with how the black-market works. When a drug is illegal, it's harder to buy it, but it's also harder to research and learn about it, so people who want to get 'high' may not learn as much about the drug or what it can do for them and how to use it safely. When the drug is illegal, a black market develops, and the drugs are often of questionable quality. When the drug is legal, a black market does not develop and the drug is of higher, pharmaceutical grade. As long as there is a black market, people will be able to obtain the drug by any means, such as buying it on the street, stealing it from friends and relatives, or buying it from dealers who will sell it to anyone who wants it. This is despite the fact that heroin is illegal, meaning that it is not produced for sale by legal businesses. (Investopedia, n.d.)

This used to be a much bigger and more dangerous problem. For example, in the 2000s and earlier, before the advent of the Internet, if you wanted to buy an ounce of cannabis in New York, you either had to do so through pre-existing contacts or go down seedy alleys to find a dealer. This meant that sometimes you had to take a risk to personal safety. Of course, if you met a stranger on the street, you could not tell if he (or she) was a dealer, much less if he was trustworthy. You might think it's safer to go to a dealer you know and trust. That meant you had to have it before or be forced to take a risk with a new seller. In either case, the sellers usually possessed other substances besides cannabis, because cannabis used to be a Schedule I substance (a drug classified as having no medical benefits and a high potential for abuse), along with diacetylmorphine (heroin) and methamphetamine. In the past, a drug dealer caught with cannabis was treated the same as with meth or heroin. (dea, n.d.)

Because of this, the black market was saturated with dealers selling cannabis along with opioids, benzodiazepines, substituted amphetamines, and substituted cathinones. When the cost of an illegal drug is so low that it can be purchased for a few dollars a gram, then people are more likely to buy it. The gateway for other substances becomes clear when we consider the psychology of a recreational user who is willing to take a circuitous route to acquire cannabis in order to become intoxicated. It is an absurd assumption that a heroin addict's goal before trying heroin is to become addicted to heroin. Addiction is much more complicated than that and stems from systematic addictive tendencies that an addict develops over a sufficiently long period of their life. An addict's journey often begins with simple pleasures or too-frequent senseless indulgences that develop into a pattern of behavior. Often, and in a similar way, the negative effects of too much TV or too many video games are not enough to develop into a noticeable problem. (cdc, n.d.)

However, they are enough to develop a pattern of behavior that later develops into an addictive personality as the person grows. A person with an addictive personality is far more prone to try smoking tobacco or drinking alcohol, perhaps even cannabis. Nevertheless, most marijuana users never use harder drugs and most of them do not use daily. Once use progresses to daily consumption, the pattern of drug abuse becomes more apparent. Over time, if the person continues to use cannabis, the brain rewrites itself. The brain learns to associate the drug with the negative consequences of repeated use. This is because cannabis has the effect of a stimulant. Nonetheless, it also has the

effect of a depressant. When the person continues to use cannabis, they end up generating dopamine, which increases addictive tendencies. (pubmed, n.d.)

5.2   Effects of long-term consumption.

The most prominent argument against legalizing cannabis for recreational use is the development of tolerance and later dependence. Long-term use often leads to changes in the biochemistry of the daily user. Long-term users have a greater risk of becoming addicted and gradually relapsing. This is not to say that cannabis is a harmless drug. Cannabis use can lead to psychosis, paranoia, and hallucinations, as well as violence. The use of cannabis also lowers inhibitions. This can cause passive aggression and aggressive behavior in a person, which in turn leads to increased use and intoxication. The moods associated with cannabis dependence can be so intense that the user may become disoriented, paranoid, and agitated. In some cases, people are so dependent on cannabis that they have to resort to violence to get their lives under control. The risk of developing psychological dependence increases with the duration of cannabis use, and it is often possible for someone to be dependent on cannabis for years without showing the symptoms of psychological dependence. Some people with psychological dependence may also experience a sense of panic and hallucinations. If this progresses, use can become dangerous levels. (mentalhelp.net, n.d.)

It is possible for someone to be dependent on cannabis for years without showing the symptoms of psychological dependence. However, the more a person uses cannabis, the greater the likelihood of psychological dependence. The primary symptoms of psychological dependence are anxiety and depression, as well as feelings of helplessness and hopelessness. The risk of developing psychological dependence increases as the consumption rate increases. (ncsacw, n.d.)

As consumption rises, mundane or regular activities become increasingly tedious and boring. This is due to how cannabis affects and changes to the user's brain's reward system through dampening brain's dopamine reactivity, causing the user to seek more or even other forms of drugs, leading to polyaddiction. Cannabis potentiates other psychoactive substances. Cannabis also stimulates the dopamine system which rapidly triggers neuroadaptations, leading to a bad habit. Alcohol is often consumed alongside

cannabis to produce a more potentiated euphoric effect. This can lead to a victimization complex. These individuals become easily influenced and easily manipulated. It is important to be aware of the social, economic, and personal aspects of the user. (thoughtco, n.d.)

Cannabis users are 23 often addicted to nicotine containing products, which further decreases dopamine functionality in brain. Dopamine is a naturally occurring organic chemical that acts as a neurotransmitter. It is known to be responsible for being a motivational component of the brain's reward system. Conventionally, dopamine gets released with the anticipation of being rewarded for a certain activity. Anything from finishing a challenging task to eating a large meal when hungry – releases dopamine, that feels good to experience. (imperial.ac.uk, n.d.)

When psychostimulant drugs are introduced to the brain, they often mimic dopamine's structure. Habitually taking substances like nicotine, cocaine, or methamphetamine tricks and rewrites the brain to constantly seek this release, resulting in development of psychological dependence and later, physiological dependence. These anomalies add up into antisocial behavior and stagnating psychological health. Mental illness affects the cannabis high. Schizophrenic and bipolar users may experience episodes, as cannabis worsens the symptoms of these psychological diseases. Often the person would not know they are bipolar, only to find out when the symptoms start occurring. A higher risk of developing or accelerating the progression of a pre-existing mental illness or disorder. Smoking cannabis as a habit is detrimental to the person's development as an adolescent. (ncbi, n.d.)

5.3 Problems of legalization

By classifying cannabis as a controlled substance, many problems can be addressed. For example, childhood exposure to cannabis can increase the risk of developing dependence and withdrawal in adulthood. This leads to irresponsible driving, which can lead to car accidents and dangerous situations. More seriously, cannabis use can put people at increased risk for developing a substance abuse disorder. It is imperative that

these two aspects be considered when classifying cannabis as a controlled substance. (nature, n.d.)

It is of concern that cannabis use by mothers during pregnancy can potentially harm the child. Cannabis is a known teratogen and there is evidence that cannabis can cause developmental problems in children. Cannabis use during pregnancy may lead to the development of fetal abnormalities. (pubmed, n.d.)

The use of cannabis during pregnancy has been shown to result in the loss of a significant quantity of the mothers' body mass. This loss can result in a decreased birth weight and therefore an increased risk of miscarriage and stillbirth. This goes on to lead to the increased risk of addiction in adult life. If this were to happen in conjunction with alcohol consumption, this could lead to the development of alcohol dependence and possibly other forms of addiction. (ncbi, n.d.)

6   Conclusion

The results are in, and it is undisputable that the conventional methods of hard-line war on drugs have failed and brought economic and social harm, all in a pursuit of an unachievable goal. Many European countries have dealt with the drug problem through regulations and harm reduction. But should cannabis remain a controlled substance or is legalization necessary?

Legal cannabis, on the one hand, has lots of desirable outcomes. The elimination of cannabis from the black-market would open a massive new cannabis market worth a fortune in tax revenues alone, in addition to other economic stimulus. The economic benefit appears to be undoubtable and plenty of new jobs would be created. Countries could export the legal cannabis. The demand for cannabis, as with other drugs, does not decrease easily. The sales stay high.

On the other hand, legal recreational cannabis would lead to new cases of addiction and other problems with the mental health of regular users. These will generate social costs associated with care, medication, lost working hours, stress and even criminal behaviour.

Is it reasonable to risk the already declining mental health of the public by introducing a legal mind-altering chemical to anyone old enough to by alcohol? How will this affect the public in the long run?

The answer lies somewhere in-between outright ban and complete deregulation. Medical cannabis already exists for the purposes of medicinal use, so legal recreational use would bring additional economic and social benefits. Yet perhaps regulation is necessary to prevent the risk of dependence and antisocial behaviour. Nevertheless, the arguments for legalization of cannabis are also quite strong.

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