A Sociological and Physiological Evaluation of Marijuana
To enlighten the community about the social beliefs, physiological effects, and medical implementations of the usage of marijuana

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Summary

It is no easy task encapsulating all the elements of what makes a drug the source of stress relief. One must consider all of the aspects, which can be tentatively and efficiently broken into social as well as physiological aspects. From some very stringent research, the social aspect of marijuana’s history has proven itself to be incredibly dense. With over a century of usage and numerous detractors as well as supporters, marijuana has run the gamut of classifications. Just a sample of this can be seen in the early days of organized crime’s history dispensing it among its inner circles, to the film “Reefer Madness” portraying it as a madness inducing narcotic. Then there is the always controversial current disparity among views on marijuana. Scientific studies and medical reports consistently report it’s aide in various conditions including reducing nausea among chemotherapy patients. Yet it’s distribution is restricted based upon state policies and it’s detractors still vehemently oppose any sort of argument, scientific or logical. That’s not to say that there aren’t those who fail to understand the idea of moderation on the other end of the spectrum, modern marijuana liberals who smoke every day and can find no fault in announcing the idea of “too much of a good thing” to be a fallacy. Scientifically marijuana has quite a few somatic as well as neurological effects, with the brain releasing a range of neurohormones and the body reacting in an incredible range of responses depending upon individual biochemistry. Behaviors that lead to marijuana abuse include unsafe driving habits, abuse of alcohol as well as violent tendencies. What can be summarily garnered from the social and scientific overview of marijuana is a lack of those willing to moderate the drug. In order for marijuana to exist without controversy and turmoil there must be an impartial contingent; one to recognize and accurately portray the practicality of marijuana as acceptable in certain situations such as medicinal purposes, yet also explain that it can be used socially if it is not transformed into an excess, in the same vein of a casual drink becoming alcoholism.

Video Link

Marijuana Stress Project: http://www.youtube.com/watch?v=hUKY6aH2BRs
The Issue: Marijuana

Social Aspects: A brief overview (BG)
Marijuana has for some time been considered an illegal drug, but only recently have its scientific and social implications elevated it to the level of an internationally controversial substance. Here in the United States the situation that Marijuana has created is one which divides the nation into a multitude of groups, from the black and white of staunch opposition and liberal indulgence to divisions of greater complexity. Along the way to this point, the drug itself has been scientifically explored in terms of medicinal purposes and psychological implications. All of these factors together have transformed the cannabis plant into a fascinating issue, and have made the overall idea of marijuana usage a fascinatingly complex situation.

From the social standpoint, Marijuana has historically developed quite a range of reactions. Restricted since 1906 in the US, the drug showed a peak in recreational use during the 1930s. More specifically in the hands of teens considered part of the deviant youth culture. What followed was a storm of irrational anti-marijuana propaganda, propaganda which (true to the type of PSAs of the time) showed any use of marijuana resulting in insane behaviors, bizarre symptoms and outright physiological fabrications. This sort of attitude peaked with the 1936 film Reefer Madness, now an often lampooned warning on the consequences of Marijuana use. The film revolves around, not shockingly, high school age individuals who use marijuana, this choice culminating in borderline fantastical scenarios wherein the “nightmare drug” causes psychotic behavior. While some of these characterization would be more suited to alcohol, this period of time pushed marijuana from an illegal substance to one which remained illegal yet now had quite a few irrational taboos upon its chest. True to human nature and the allure of what is considered illegal (Humanity has always been keen to find out why things are illegal for themselves), this development created a far greater interest in sampling cannabis. Following this media explosion surrounding marijuana, usage increased in an illegal recreational fashion, with significant, pardon the language, highs. Specific spikes in use can be pinpointed during the birth of the alternative lifestyle in the sixties and an almost de facto legalization during the “free love” portion of the seventies. The eighties placed all drugs in the forefront of the public eye, thanks in part to the government administration addressing the general abuse of all substances with the “War on Drugs.” The comprehensive and US cabinet endorsed campaign featuring full media enforcement, portraying the dangers of all drugs in an actually factual reefer madness time period. Factual in the sense that drugs like cocaine and crack had begun an admittedly astonishing circulation, with an unmistakable correlation to crime. Looking at the situation now, the outlook on marijuana could be best summed as a blending of all its previous social incarnations across the decades. And this blending is the social catalyst for what makes marijuana use such a conflicting issue.

The best way of dissecting marijuana’s current interest involves first asserting that it is a socially complex substance. Looking at it in the logical sense, marijuana is an illegal drug that has a mythos of creating an otherworldly psychotropic experience. However, unlike LSD or the recently introduced designer drug ecstasy, marijuana is considered a less dangerous choice for “experimentation.” From the philosophical sense, there is the final undeniable factor of human nature and its history with the temptation of the illegal. This combination of varying factors that creates an undeniably taboo attraction to the drug. In more recent years the most common
perception is that marijuana can be used to relax the individual putting them into a state of tranquility and eliminating any concerns. The strength of this belief has created a situation wherein marijuana is turned to as a source of relieving stress. To an extent this perception has been scientifically proven as a viable reality; that marijuana can, in fact, provide relief to certain psychological and physiological conditions. One such example is its use among chemotherapy patients as a preventative to the nausea of the radiation, and a simultaneous appetite stimulant. Take note however, that the conditions required for marijuana to be physiologically helpful are quite specific and the actual potential of the drug to help is intimately linked to precise dosages. These aforementioned dosages are not regulated in recreational use making any sort of argument by users not under treatment null and void. On the same level of effects, marijuana has been shown to stimulate regions of the brain that facilitate numerous creative processes, which can cause modifications in focus and potential neuroses. Once again, scientific studies have shown that the psychological experience completely relies upon the individual, their state of mind at the time of ingestion and the tried but true variable of dosage. However, varying views have turned this development into assumptions that range from the fact that marijuana creates a more creative brain to more negative views or marijuana causing irrevocable psychological damage.

One of the most integral and largely avoided factors which has lead to the muddled view of marijuana is moderation, or lack thereof. For every population, there are records of individuals taking a good thing too far into the category of an excess. Alcoholism exists for this very reason and could very well be grouped with other drug abuses. No more support for this is needed than the mere mention of prohibition, and how well the limitation of an already engrained substance was received by alcoholics. Marijuana is no exception, and whether it be societal pressures or economic status, individuals have become dependent on marijuana. For them, life cannot continue without a daily supply, and overall demeanor has been shown to be negatively effected should said supply be missing or diminished. This provides an argument from both ends of the spectrum in the battle for marijuana’s status. That the drug’s abuse can lead to a degree of dependence is evident, but that the idea of substance dependence could be equally attributed to far deadlier legal items like alcoholic beverages is an adequate counter-point. Thinking broadly, one could group food into the category of substances as potentially decimating as marijuana and alcohol. One may rebuke this stating that food has never been known to cause neurological changes (with the exception of a few outliers.) But even this is a fallacy, given the confirmed neurohormonal reactions our bodies experience at the mere smell of a familiar foodstuff. As for excess being a danger, obesity in the United States is at an all-time high, with heart disease in the top five causes of death, yet few point their fingers menacingly at pizza pies. Humorous asides notwithstanding, the example of food reinforces the age-old fact that too much of any good thing can truly be a bad thing.

It is clear that stress is a factor affected by marijuana use, however the relationship is far less straight forward than the idea of marijuana as a cure all for any ailment, just as the drug is not an all powerful psychological hindrance. Regardless of societal views, fact still reigns supreme and there is much in the way of scientific study revealing psychological and physiological truths concerning cannabis.
Psychological Effects (MO)
Marijuana has various effects on the psychology of the individuals that take the drug. Should marijuana be used as a medical drug, these psychological effects should be addressed. The risk of individuals that have tried marijuana is correlated to behavior, traits, environment, and genes of an individual. This information can be used to stop at risk individuals from using the drug before becoming an addict. While the risk of a person trying the drug is correlated to personality traits, the amount of marijuana use does not correlate to any measured behavior, gene, traits, or environment. Additionally, patience that has undergone detox of the drug experience increased aggression that has led to violent criminal crimes. While the benefits of medical marijuana may be beneficial, the psychological effects of the drug should be closely monitored to prevent abuse.

The initial usage of marijuana is found to be correlated with specific phenotypes traits and behaviors. Traits and behaviors are based off of the individuals’ genetics and environmental surroundings. One such phenotype is risk behavior; found to be mostly due to environmental factors. The risk behavior phenotype correlates with a higher number of users of marijuana. Additionally, the behavior of sensation seeking is linked to both genetic and environmental factors, and is correlated with the usage of marijuana. Such sensation seeking traits are: risk taking attitude at a four percent risk of using marijuana, riding motorcycles at twelve percent risk, not wearing a seat belt at twenty-six percent risk, and sexual promiscuity at sixty-six percent risk. The factors responsible for these traits are: familial environmental influencing a fair proportion in motorcycle and sexual promiscuity. Additionally family management characterized by unclear expectations, poor supervision, high family conflict, and low family stability increase risk for adolescent drug abuse and sexual misconduct. Shared genetics contributed to the risk taking attitude, sexual promiscuity and seat belt use. This may reflect the genetic liability to a general personality trait that encompasses risk-taking and substance use behaviors. Significant genetic influences were evident among the risk-taking personality measurements of impulsivity, extra version, novelty seeking or harm avoidance. One factor that should be noted is that adolescents have a general tendency toward deviance and could explain the variance in the criminal behavior and drug abuse, such as marijuana. Familial environment were factors that influenced fair proportion in motorcycle and sexual promiscuity. Age also is correlated with marijuana use, which relates with risky behaviors. The behavior of sexual promiscuity is similar within each age group and is a behavior that has a higher tendency to correlate with marijuana use. The initial marijuana usage is largely influenced based on different genes, environments, and behaviors (2). This information should be used as a guide to prevent individuals from starting marijuana before they have a chance to become addicted. Individuals showing the phenotypes listed, should be mandated to seeing a therapist or at a minimum assigned a person to talk to.

The relationship between individuals and the amount the usage of marijuana is a complex issue. Meta analysis has reveled little correlation between different personality traits, behaviors, and the abuse rate amongst users of marijuana. In the analysis, data was collected from marijuana longitudinal and cross sectional studies mostly in the United States. Participants were drawn from the middle and working class. Subjects were analyzed based on three types of traits and three types of behaviors. Negative traits were depicted as depression, anxiety, and self derogation. Emotionality traits were extroversion, social dis-inhibition, and hyperactivity. Unconventionality traits were tolerance of deviance, high value on independence, and non-
religiosity. Negative affect behaviors were dependency on others and comparing self to others. Negative affect behaviors were described as dependency on others and comparing self to others. Emotionality behaviors were delaying gratification and motor restlessness. Unconventionality behaviors were early sexual activity and non attendance at religious services. Each of these traits and behaviors were broken down into marijuana usage. Use was categorized as once in the past year. Miss-use defined as used in the past month or forty times in the last year, and abuse as once a week or more. The result of the study suggests that there is no correlation for the risk factor of a user of marijuana to abuse the substance (1). This indicates that the usage of medical marijuana has no means of predicting whether or not an individual will become addicted to the drug. Everybody has an equal chance. However, broader studies are needed to confirm this finding.

Marijuana withdrawal has important psychological aspects to consider. Over a twenty-eight day period, chronic abusers of Marijuana experienced increased aggression, anxiety, insomnia, irritability, and changes in depression; most notable symptom being aggression. Individuals who have undergone withdrawal have committed violent crimes and are an issue that should be addressed, especially if marijuana is to be used as a medical treatment. The cause of the aggressive behavior has been found to be due to tetrahydrocannabinol or abbreviated THC, the main psychoactive compound in marijuana. Interestingly under moderate and high dosage of THC, the aggressive behaviors will be suppressed or eliminated. Only under low dosage of THC is the aggressive behavior exhibited. This becomes an issue under detoxing conditions or waning medical patience off of marijuana. It is possible that the change in aggressive behavior is related to changes in mood in with-drawl. Over the detox period, chronic abusers began to show an increase in aggressive behavior on days three and a peak in aggressiveness at day seven. Throughout the rest of the detox, aggressive behavior slowly declined to pre-detoxing levels on day twenty-eight (3). The indications, those patients who have been given medical marijuana should be kept in the hospital until the patient has been detoxed off the drug to prevent aggression that can harm the population.

The psychological effects of marijuana are broad. Most notably, the initial usage of marijuana should be noted as a concern for all organizations. Phenotypes are easily noted and with an intervention from a friend, coworker, boss, teacher, or therapist could be prevented. Additionally, the risk of marijuana abuse is equal for all individuals and cannot currently be used as a factor in determining if marijuana should be used for medical purposes. However, the medical use of marijuana should be carefully dealt with during detox. Aggressive behaviors will increase at low concentrations of THC that may result in violent actions. Patience undergoing detoxing should be kept in a hospital for twenty-eight days of abstinence from the substance under constant watch.

Physiological Effects (EE)
When it comes to comprehending how marijuana affects people and whether its use should be administered, the observations of its physiological effect on the body caused by heavy use should be closely examined. As previously shown, there are many psychological traits that can develop due to the abuse of marijuana, usually stemming from changes occurring in the brain. This plant has been known to be harshly criticized yet has been on the up rise due to its known medicinal usages. Although the positive effects seem to outweigh the negative, possible adverse effects
have recently emerged providing the need for concern. Some important areas that should be considered with regards to heavy abuse of the plant are the cardiovascular system, respiratory system, and the brain.

There have always been a multitude of studies revolving around the heart which comes to no surprise considering the importance of the cardiovascular system on the human physiology. The heart is commonly seen as the most important muscle; it contains its own myocardial muscle cells that respond to electrical impulses which cause contractions that ultimately determine one’s heart rate and deliverance of nutrients such as oxygen throughout the body. Understanding how essential the heart is to our body, changes in its functioning deserve thorough analyzation. To start, research has showed “typical increases in heart rate associated with a single marijuana cigarette range from 20% to 100%, with the peak in heart rate occurring 10 to 30 minutes after beginning to smoke” (5). This increase in heart rate means more blood is being circulated throughout the body at a faster pace. Along with the drop in blood pressure noticed from the plants use, these effects are thought to correlate to hypertension disorder. However, it should also be taken into account how these effects are thought to be due solely to smoking of marijuana as opposed to any general form of consumption. It has been shown that “smoked marijuana is associated with an increase in carboxyhemoglobin, resulting in decreased oxygen-carrying capacity” (5). If there is a decrease in oxygen supply to the body and its muscles, this can directly affect how our body produces energy, which is also referred to as ATP (adenosine-triphosphate). Perhaps after marijuana consumption the body has to now depend more heavily on anaerobic processes, such as glycolysis, as opposed to oxygen-dependant processes like the citric acid cycle and electron transport chain in terms of energy distribution for the body. This lack of oxygen can also be the culprit of why so many recreational marijuana users are thought to be lazy and unenergetic during daily activities.

Although the heart is the main organ that circulates the body’s needed nutrients around, a better understanding of what is going on behind changes in oxygen levels of blood caused by marijuana can be sought after through research studies on the lungs. Overall, marijuana is known to have varying affects on the lungs. To start off, THC (tetrahydrocannabinol), one of the main psychoactive components of marijuana, is known to cause short-term bronchodilation. This change is expected to be positive since that means there is better airflow in the lungs, hence better exchange of oxygen and carbon dioxide, and ultimately more oxygen for the body. However, there are also a many long-term consequences found caused by marijuana. This could possibly be caused by the fact that many users of marijuana tend to mix it with tobacco when smoking; hence, the combination of the better air flow and increased carcinogens from tobacco can prove more dangerous. Although it would be easy to put all the blame on the tobacco, researches were right to further investigate other compounds in marijuana. Scientists have found that marijuana “contains, in addition to THC, a large number of toxic gases and particulates (including high concentrations of procarcinogenic polycyclic aromatic hydrocarbons) that are capable of causing lung injury and potentially respiratory malignancy” (6). Although direct correlation has not be found yet between some of these other toxins and improper organ functioning, there are a few dettering findings; there is thought to be greater chances of chronic bronchitis in heavy marijuana users as well as the possibility for marijuana to be causing obstructions for airflow in the lungs. There is also always the microscopic possibility that marijuana smoke also causes lung cancer. If these findings prove to be permanent and contain a
direct correlation with heavy marijuana consumption, then deeper analysis should be conducted and the results should be dispersed for the many abusers in our country.

Changes occurring in the brain tissue are also directly correlated with a vast number of psychological traits that can be developed due to the abuse of marijuana. A lot of these changes are happening because of the fluctuations in the density of white and gray matter; the gray matter is like the computer of the brain while the white matter is the connecting cables that allows the computer to communicate with all parts of the system. There are also minute alterations seen to take place in the corpus callosum which is known to be the largest white matter structure in the brain. “Patterns of abnormal brain activation in frequent cannabis users are a common finding linked with widespread recruitment of compensatory brain regions across the hemispheres involving the hippocampus, cerebellum and prefrontal cortex during performance of cognitive tasks” (4). This abnormal and widespread activation throughout the brain has yet to be fully understood, but it is surely the reasoning behind the development of novel psychological traits. By examining the changes and where they are taking place in the brain, scientists are able to start making connections between the physiological linked with the psychological effects from marijuana abuse.

After touching the tip of the iceberg with regards to the negative aspect of marijuana, more research is always useful in finding out whether marijuana demonstrates an overall productive use to our body and society or a nuisance. These harmful effects to the heart, lungs, and brain all seem to be daunting but the scientific community needs to define what heavy usage is and what is considered moderate use of the substance. When it comes down to little or even moderate use of marijuana, it looks as if the plant might not prove as dangerous. One of the main issues that should be addressed is need to determine what constitutes the line between abuse and proper use of the drug that is so commonly used recreationally in our society.

References


Survey Review
The data of the survey group suggest that males are more likely to use marijuana and females are less likely at the full time undergraduate level. Interestingly, responses stated that only 38% believed that marijuana inhibits success, 32% believes that it doesn't, and the rest are uncertain. Additionally, on the scale of 1-10 regarding society’s perceived outlook (with 10 being the most negative), there was an average result of 6, meaning society is not sure how to perceive the substance but it seems to most to be slightly negative. Most of this information indicates that society does not truly know whether marijuana is harmful to physical capabilities and psychological stresses. As for most people, believing that the marijuana appeal comes from its illegality is a possibility as agreed upon for 73% of responses. It should also be accounted for however that marijuana has a strong appeal in countries that it is not illegal. Overall, people are not sure how to perceive the drug, hence further scientific analysis should be conducted and provided to the public.

Editorials
Submitted to the South Plainfield Observer (Michael Oprysk)

To the Editor,

Marijuana has various effects on the psychology of the individuals that take the drug. Should marijuana be used as a medical drug, these psychological effects should be addressed. The risk of an individual first time drug usage is measurable based on behavior, surrounding environments, and genetics. Risk taking behaviors, poor family relationships, stressful environments, and genes all play a part in the risk of being exposed to marijuana. This information can be used to stop at risk individuals from using the drug before becoming an addict.

While the risk of a person trying the drug is correlated to personality traits, the amount of marijuana usage does not correlate to any measured behavior, gene, traits, or environment. Implying that addiction to marijuana is not based on a person’s actions and everyone has the same risk factor for addiction. The medical implementation of this information suggests that there should be no discretions upon medical marijuana based on patient behavior.

Submitted to NY Times Editorial (Elishay Eliezer)

The growing field of research science next to modern technology has been teaching the public of the numerous effects that stem from an ever-expanding catalog. A particular substance that has blown back into the spotlight is Cannabis; this plant has been known to be harshly criticized yet has been on the up rise due to its medicinal usages. Although the positive effects seem to outweigh the negative, possible adverse effects have recently emerged providing the need for concern. Some important areas that should be considered with regards to heavy usage of the plant are the cardiovascular system, respiratory system, and the brain.
The heart is commonly seen as the most important muscle; it contains its own myocardial muscle cells that respond to electrical impulses which cause contractions that ultimately determine one’s heart rate and delivery of nutrients such as oxygen throughout the body. To start, research has shown that there are typical increases in heart rate associated with a single marijuana cigarette ranging from 20% to 100%, with the peak in heart rate occurring as soon as 10 minutes after smoking. Some of these effects are thought to be due solely to the smoking of marijuana as opposed to any general form of consumption which is partially true. It has been shown that smoked marijuana is associated with an increase in carboxyhemoglobin which correlates to a decreased oxygen-carrying capacity within the circulatory system. If there is a decrease in oxygen supply to the body and its muscles, this could directly affect how our body produces energy and consequentially functions during our daily tasks.

A better understanding of what is going on behind changes in oxygen levels within the blood caused by marijuana can be sought after through research studies on the lungs. Scientists have found that marijuana contains, in addition to the more-known THC compound, numerous toxic gases and particulates capable of causing damage to the lungs and the minuscule possibility of respiratory disease. In addition to those findings there is thought to be greater chances of chronic bronchitis in heavy marijuana users as well as the possibility for marijuana to be causing airway obstructions within the lungs. All these findings can be worrisome if these effects are established as true and irreversible.

Changes occurring in the brain tissue are directly correlated with a vast number of psychological traits that can be developed due to the abuse of marijuana. A lot of these changes are happening because of the fluctuations in the density of white and gray matter; the gray matter is like the computer of the brain while the white matter is the connecting cables that allows the computer to communicate with all parts of the system. These changes are thought to be responsible for patterns of abnormal brain activation in frequent cannabis users. These unusual patterns can also result in widespread recruitment of compensatory brain regions across the hemispheres involving the hippocampus, cerebellum and prefrontal cortex during the performance of cognitive tasks. It is important to find out whether this irregular form of brain activity is ultimately harmful or not.

After touching the tip of the iceberg with regards to the negative aspect of marijuana, more research is always useful in finding out whether marijuana demonstrates an overall productive use to our body or a nuisance. These harmful effects to the heart, lungs, and brain all seem to be daunting but the scientific community needs to define what heavy usage is. When it comes to little or even moderate use of marijuana, it looks as if the plant might not prove as dangerous. The issue is determining what constitutes the line between abuse and proper use of the drug.

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Editorial: Marijuana and Stress Submitted to Pasquinade Press (Ben Grobshteyn)

In an era so oversaturated with technological advancement, it is ironic how much stress the average individual ultimately experiences. The self-same devices which keep people so
closely connected are undoubtedly a cause of this, a potent stressor requiring that we constantly keep tabs on all of our potential levels of interactivity. Add this rapidly evolving element to the already well established ones of maintaining interpersonal relationships, determining financial priorities, and managing ones time and there is a potent impetus for removing oneself from the environment. Enter the advent of substance abuse, historically promoted as a distraction from the arduous elements of life, and often having a detrimental effect if abused. The term substance is rather broad here, primarily because too much of any “good thing” can be dangerous. And herein lies the main issue: moderation. Moderation changes from person to person, a concept brought on by a myriad of factors. But it is important to look at how the variation in an individuals understanding of moderation can color a substance in a negative light as opposed to looking at our varying human natures as the culprit.

Marijuana is easily the most logical choice for an example in this situation, an ambiguously regarded substance which has arguably become one of the most controversial drugs in use and abuse today. Historically proven to relax an individual, this drug has seen both ends of the spectrum in terms of its acceptance, with detractors going as far as to call it a killing machine and promoters suggesting that a lifestyle saturated with it is nearly harmless. The main issue here is that these two spectrum are the loudest voices rather than the middlemen. That there aren’t any prominent individuals with a voice suggesting that this plant is as dangerous as tobacco or alcohol. Alcoholism is every bit the issue in the united states, and again there is a spectrum of the substance’s use across the board, from individuals who can handle a casual beer to those who need to wake up and buy a metric ton of scotch. The comparative to marijuana is just as poignant, and while some are content with using it every so often in a controlled environment, there will always be those who do not know when enough is enough, a mindset that could occur for any available “drug” and which is readily grabbed up by detractors of marijuana. What is clear is that moderation needs to be enforced and promoted by an individual who understands its principles. There needs to be an education on the idea that marijuana is no more physically detrimental than some legal substances, but that it needs to be handled in a responsible fashion. But while simple to put on paper, this is an incredibly daunting task, more so for the aforementioned principle that the radical views are usually the loudest.