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William Brock Renshaw

The Medical History & Use of Psychedelic Drugs

Often in modern societies, psychedelic drugs or substances tend to have a negative stigma surrounding them. The stigma may manifest itself anywhere from music festivals, strange hallucinations, hippies, or mind harming drugs. However, this stigma undermines documented scientific research from the last eighty years, which shows that psychedelics' usefulness medicinally to treat various mental health issues. However, why is it that these mysterious yet medically beneficial substances have had such a negative association in societies worldwide? As psychedelics' visibility grew, fear-mongering, and perceived threats to religious and national identity rather than safety dilemmas or scientific research controlled the narrative around psychedelics. The origin of this negative stigma began during the Spanish Inquisition with the suppression of ceremonial psychedelic use by Mesoamerican Indians, most notably the Aztecs.¹ Another wave of stigma, which has lasted until today, comes forth in the latter half of the twentieth century with President Nixon's Controlled Substance Act and the reaction to the counterculture movement of the 1960s. Recently scientists have faced challenges in their attempts to revitalize research into the potentials benefits of psychedelics medical use because of this negative stigma. As prominent academic and research institutions such as John Hopkins University and the Multidisciplinary Association for Psychedelic Studies (MAPS) conducts studies on a plethora of mental health illnesses, as historians, we should seek to understand how culture has slowed the scientific process of psychedelics' medical use over time.

In contrast, past studies have documented the rise and fall of psychedelics use and the narratives of the people behind them. These, however, are often isolated works, focused on one or two people, or do not consider why psychedelics were made illegal, just advocating for their legality. This paper will seek to reconcile many of these isolated works with various sources to explain why governments and people in positions of authority pushed so hard against the use of psychedelics in any capacity.

1 Albert Hoffman, "Teonanácatl and Ololiuqui, two ancient magic drugs of Mexico," UNODC Bulletin on Narcotics, Issue 1, (1971), 3-4. Accessed September 15, 2020, https://www.unodc.org/unodc/en/data-and-analysis/bulletin/bulletin_1971-01-01_1_page003.html.

This work aims to describe the history of psychedelic drugs, the cause and emergence of the negative stigma surrounding them, and their role in the medical field. Beginning with the ancient tribal and ceremonial use by indigenous people, then moving onto the twentieth-century psychedelic era with the creation of LSD and the banning of psychedelics. Finally, this work will survey the current status of psychedelic drugs in the medical field. This paper will analyze the historical interplay of science, society, and law in the scope of psychedelic substance history with a primary focus on three classic psychedelics: lysergic acid diethylamide (LSD), psilocybin and psilocybin plants (Magic Mushrooms), and the tryptamine compound known as N, N-Dimethyltryptamine (DMT). Secondary attention will be on the lower tier of psychedelic drugs such as ayahuasca, morning glory, peyote, mescaline, and MDMA. The questions will concern the origins of certain psychedelic drugs, how they came to be used by humans, and their religious practices; how different societies, as well as the U.S. government, interacted with psychedelics, and finally, what caused their negative stigma and ultimate unlawfulness, and the revival of psychedelics in the medical field.

Before diving in-depth into psychedelic drugs' historical timeline, necessary and useful terminology is warranted. Firstly, "psychedelic" is defined as or causing extreme changes in the conscious mind, such as hallucinations, delusions, intensification of awareness, and sensory perception.² Psychedelic, as an umbrella term, describes the chemicals and substances that emit psychoactivity in the brain. Secondly, *alkaloids* are a class of naturally occurring organic compounds or plants. Alkaloids can also describe some synthetic compounds that have similar structures to the organic ones. Thirdly, *psychotherapy* is the title given to a particular classification of therapy, which embodies the treatment of a mental or emotional disorder by psychology rather than by consistent medical means. In psychotherapy, psychiatrists use psychedelic substances only a certain number of times to treat patients with mental health issues, and it is usually titled (*psychedelic substance name*) *assisted psychotherapy*. Fourthly, *tryptamine* is a psychedelic compound alkaloid found in these drugs. This compound is a neurotransmitter that releases serotonin or the "happy chemical" in our brains. Lastly, a psychedelic *trip* or experience is the conscious mind's temporary altered state when ingesting psychedelic substances.³

2 "Oxford Languages and Google – English," Oxford Languages. <https://languages.oup.com/google-dictionary-en/>. Accessed on September 15, 2020.

3 Paul Devereux, *The Long Trip: A Prehistory of Psychedelia* (Brisbane, Australia: Daily Grail Pub., 2008), 1.

Prehistory: Ancient Psychedelic Use

Many of the plants considered to be psychedelic predate the written records of history. The prehistory of ancient psychedelic use by humans began well over ten thousand years ago in various parts of the world. Fossil records of psychedelic plants, mainly psilocybin, peyote, and strands of morning glory, with psychedelic properties, can be found in today's Iraq, Europe, and Mexico, and in several parts of South America.⁴ The early or ancient ingestion of psychedelic substances by various cultures was limited to the compounds within plants since no synthetic drugs existed during this time. Psilocybin or magic mushrooms, ayahuasca, morning glories, and peyote are the most prominent psychedelic plants that ancient cultures consumed many centuries ago.

Magic mushrooms contain psilocybin, a psychedelic tryptamine compound found in over 200 types of mushrooms.⁵ Psilocybin is categorized as one of the classics among psychedelic substances and is one of the longest-used drugs in human history.⁶ Ayahuasca is a psychedelic concocted brew made up of individual vines and leaves, which blended to create DMT, one of the most potent psychedelic tryptamines on the planet.⁷ Morning glory is a species of flowers found in Mexico containing psychoactive seeds and can produce a psychedelic state when ingested correctly in liquid form.⁸ Peyote cactus is a slow-growing plant native to Mexico's northern desert areas and containing a substantial amount of mescaline, a naturally occurring pungent psychedelic alkaloid that gives the cactus its psychedelic properties.⁹ All of these substances have similar effects on the human mind and body when consumed. The conscious state of mind that each of these psychedelics exhibits upon the user has nearly indistinguishable psychological and physiologic features based on chemicals released in the

4 Ibid, 12.

5 Gastón Guzmán, "Hallucinogenic Mushrooms in Mexico: An Overview," *Economic Botany* Vol. 62, No. 3 (2008), 404-12. Accessed August 14, 2020.; Tao Lin, "Psilocybin, the Mushroom, and Terence McKenna," *Vice*, (August 12, 2014,) https://www.vice.com/en_us/article/yvqqjp/psilocybin-the-mushroom-and-terence-mckenna-439. Accessed on November 12, 2019.

6 Matthew W Johnson, Peter S Hendricks, Frederick S Barrett, and Roland R Griffiths, "Classic Psychedelics: An Integrative Review of Epidemiology, Therapeutics, Mystical Experience, and Brain Network Function," *Pharmacology & Therapeutics* Vol. 197 (May 2019), 83-5.

7 Gayle Highpine, *et al*, "Unraveling the Mystery of the Origin of Ayahuasca," Ayahuasca Journey, (February 26, 2017), <http://www.ayahuasca.com/amazon/botany-ecology/unraveling-the-mystery-of-the-origin-of-ayahuasca/>. Accessed on November 10, 2019.

8 Devereux, *The Long Trip*, 24.

9 Peter G. Stafford and Jeremy Bigwood, *Psychedelics Encyclopedia* (Berkeley, CA: Ronin Pub., 1992), 103.

brain and the feelings described by anyone who has participated in using these psychedelics.¹⁰

Many ancient cultures consumed these plants as part of mystic or religious ceremonies. Psilocybin experts such as Terence McKenna and R. Gordon Wasson have asserted that medicinal purposes, cultural practices, and the goal of consistently reaching spiritual experiences or a spiritual state are the reasons for these plants' consumption.¹¹ The area of the world containing the most evidence of ancient psychedelic use by Mesoamerican civilizations is in modern Mexico. Of those civilizations: Aztec, Zapotec, Tarahumara, and Mazatec Indians all consumed peyote and psilocybin plants.¹² Historians are unsure exactly how long Mesoamericans used these psychedelic plants due to the destruction of several written records in Mexico by the Spanish Catholic priests during the Spanish Inquisition's active years.¹³ However, anthropologists and ethnobotanists have time estimations based on carbon dating techniques and surviving records by Spanish priests that tell how Mesoamericans used psychedelics. The carbon dating method showed Mesoamerican societies collected the mescaline from the peyote cacti as early as 3780 BC, strongly suggesting these cultures used psychedelics for their mind-altering properties ceremonially.¹⁴

One of the most valuable insights into prehistorical psychedelic use by the Aztec civilization comes from Roman Catholic texts written by eye witnessing Spanish priests. Specifically, Spanish priest Bernardino de Sahagun, who wrote the *Florentine Codex*, estimated that Aztec and Mexica tribes used peyote at least 1,800 years earlier than the sixteenth century. Aztec noblemen assisted Bernardino with his estimation work. The nobleman provided him with written texts, drawings, and phrases of Aztec chronologies that they translated from the Aztec language.¹⁵ In Bernardino's chronicle, he also mentions what the Aztecs called their sacred mushrooms, *teonanacatl*. This term meant 'flesh of the gods' when translated.¹⁶ Bernardino's surviving manuscript of Aztec use of psychedelic drugs has provided the world with one of the first-ever written texts of human psychedelic use and practice.

Along with Bernardino, Francisco Hernández de Toledo, a physician to the King of Spain, wrote a guide for the Spanish missionaries coming to

10 David E Nichols, "Psychedelics," *Pharmacological Reviews* Vol. 68, No. 2 (April 2016), 265-7.

11 Devereux, *The Long Trip*, 25.

12 Ibid, 26.

13 Robert A. Byre Jr., "Hallucinogenic Plants of the Tarahumara," *Journal of Ethnopharmacology* Vol. 1 (1979), 25.

14 Devereux, *The Long Trip*, 43.

15 Stafford and Bigwood, *Psychedelics Encyclopedia*, 104.

16 Devereux, *The Long Trip*, 112.

the New World in the mid-seventeenth century.¹⁷ In that guide, Hernández described that the Mesoamerican natives ate various mushrooms that induced a sort of “madness” and put them into a trance-like state.¹⁸ Hernandez also illustrated how the natives consumed the mushrooms, sometimes made into a drinkable beverage with a mixture of agaves and other times eaten with chocolate.¹⁹ Archeological evidence of ancient Mesoamerican artifacts demonstrated how active psychedelic substances were in their cultures. Specifically, there is an Aztec god statue, Xochipilli, which has the figure dressed in *teonanacatl* mushroom caps on his knees and earlobes.²⁰ There is also a group of Mesoamerican Indian artifacts that may shed even more light on the cultural use of psilocybin mushrooms. The “mushroom stones,” as these artifacts are known, were discovered in Mexico, Guatemala, and El Salvador in the early twentieth century. Discovered by A.L. Smith, R.E. Smith, and E.M. Shook, the mushroom stones in Guatemala were the most numerous and most intact out of all the locations.²¹ These little statues depicted a figure sitting down and a mushroom cap emerging out of said figure as if they were one body. Scholars like Maya archaeologist Dr. Stephan de Borhegyi and his anthropologist wife, Dr. Suzanne de Borhegyi, concluded that these stones represent the *teonanacatl* and further conclude that it is highly probable that a few groups of Indians worshipped magic mushrooms.²² Because in *Nahuatl* language, psilocybin mushrooms translate to “flesh of the gods,” many anthropologists and archaeologists (such as Richard Schultes, R. Gordon Wasson, the Borhegyis, J.B. Johnson, among others) have suggested that Aztec religious ceremonies used psychedelic mushrooms. This assertion is further supported by the magic mushrooms imbued on the Aztec statue of Xochipilli and the discovery of other magic mushroom sculptures.²³

During colonial times, the Holy Office of the Inquisition recognized that the Aztecs and other Native peoples in the region used three psychoactive

17 F.J. Carod-Artal, “Hallucinogenic Drugs in pre-Columbian Mesoamerican Cultures,” *Neurologia (English Edition)*, Vol. 30 (January 2015), 43.

18 Carod-Artal, “Hallucinogenic Drugs,” 45.

19 Ibid, 47; U.S. Forest Service. *Plants of Mind and Spirit - Teonanacatl Mushrooms*. 2019. https://www.fs.fed.us/wildflowers/ethnobotany/Mind_and_Spirit/teonanacatl.shtml Accessed on September 15, 2019.

20 Carod-Artal, “Hallucinogenic Drugs,” 45.

21 Robert H. Lister, “The Artifacts of Uaxactun, Guatemala. A. V. Kidder. Publications, Carnegie Institution of Washington, No. 576. Washington, 1947. 76 Pages, 87 Figures,” *American Antiquity* Vol. 14, No 2 (October 1948), 136–37.

22 Stephan F. De Borhegyi, “Miniature Mushroom Stones from Guatemala,” *American Antiquity* Vol. 26, No. 4 (1961), 502-4; Fred Wendorf, “Stephan F. De Borhegyi, 1921-1969,” *American Antiquity* Vol. 35, No. 2 (1970), 194-200.

23 Stanley Krippner, and Michael Winkelman, “Maria Sabina: wise lady of the mushrooms,” *Journal of psychoactive drugs* Vol. 15, No. 3 (1983), 225.

agents: mushrooms, peyote, and morning glories.²⁴ Unlike Bernardino, many other Spanish priests and conquistadors were appalled by Aztec use of these substances; they were seen as heretical in Roman Catholic eyes and associated with the practices of sacrificial rites.²⁵ The Spanish overlords condemned the use of peyote and other mind-altering substances, which made peyote practices a crime, leading to the first anti-drug law of the New World in 1620.²⁶ Because of the ban on these practices, many Indians were tortured and killed by the Spanish during the two centuries of colonial oppression because they did not abandon their ceremonial psychedelic use, among other tyrannical Spanish laws. The Spanish placed indigenous people in a no-win situation. On the one hand, they believed that if they stop using psychedelics to worship their gods, they will face the gods' wrath. On the other hand, if they continued their psychedelic religious ceremonies, they would feel the Spanish empire's wrath.²⁷

The Spanish sought to destroy the peyote practices and mushroom cults of the Mesoamerican Indians. The Roman Catholic Church viewed the Indian's psychedelic practices as a danger to their authority. This challenge to authority center on drug consumption can be understood as an early battle in the now common War on Drugs. Psychedelic plants, as well as their ingesters, were the first casualties.²⁸ It is out of this conflict that the negative stigma began in psychedelic substance history. The Roman Catholic Church's narrative of psychedelic plants as paganism instruments was so significant that it took researchers like R. Gordon Wasson to rescue them from their imposed silence in Mexico centuries later.²⁹ However, by the time researchers like Wasson were on the scene, humanmade substances were leading much of the scientific discussion on psychedelics. The medical community was completely unaware of the similarities between the naturally occurring substances found in Mexico and synthetic psychedelics. But more on that later. The fear of psychedelic substances to institutional authority began with The Roman Catholic Church and the Spanish Inquisition's early War on Drugs. This phenomenon of psychedelics challenge to authority returned within the same framework, but at a different time, with different authorities, different results, and a different fundamental substance: LSD.

Unlike Mesoamerican native practices, the Amazonian people of South America experienced a different, even more tolerant, relationship between

24 Stafford and Bigwood, *Psychedelics Encyclopedia*, 104.

25 Ibid, 104-7

26 Ibid.

27 Ibid.

28 Michael Pollan, *How to Change Your Mind: What the New Science of Psychedelics Teaches Us about Consciousness, Dying, Addiction, Depression, and Transcendence* (London: Penguin Books, 2019), 109.

29 Ibid, 59.

their practices and the state. The scattered tribes of indigenous groups along the Amazon region, mostly in Ecuador and Colombia, used ayahuasca for mystical experiences and still do today.³⁰ There is little evidence to trace the timeline of ancient ayahuasca use in the region. The only records of its use do not appear until the nineteenth century. Nevertheless, because of these practices and the interconnectedness of the exchanges of ideas across the Americas, it is plausible that tribal ayahuasca use has been a part of indigenous ceremonies for at least a couple of hundred years. This assertion is further supported based on pre-Columbian rock drawings that depict human visions from ayahuasca experiences.³¹ As stated before, ayahuasca derives from the combination of a vine known as *banisteriopsis* and different types of leaves or bark. However, the main ingredient is *banisteriopsis*; everything else resulted in a mixture with other substances, generally called additives. The combinations of additives and the vine resulted in the making of the compound DMT. This compound has allowed thousands of Amazonian people to have a psychedelic experience that has played an integral role in bringing together their community and connecting these people to a world of spirituality.³²

Psychedelic drugs had a massive role in ancient cultures and societies, as suggested by substantial evidence ranging from cave drawings, artifacts, carbon testing, and written texts. These psychedelic substances were used extensively in modern Mexico and South America's Amazonia regions, but similar substances were used likely in parts of Asia and Europe.³³ Though there are many ancient psychedelic use instances, there are not many records of their presence in periods after the seventeenth century and up until the late nineteenth century. This lack of use or study of psychedelics can be massive, if not entirely, attributed to the negative stigma that the Roman Catholic Church posited in their colonization of the Americas. Despite this, psychedelics would make a remarkable comeback in the twentieth century and showed great medical promise. That promise would soon be unfairly diminished in the latter half of the century under the scope of the negative stigma, as we move on to the psychedelic era.

Twentieth Century Part I: Psychedelic Era

Long after psychedelics vanished as spiritual psychoactive agents for misguided Indians, as colonial Spanish colonial might have it, psychedelic

30 Devereux, *The Long Trip*, 121.

31 Stafford and Bigwood, *Psychedelics Encyclopedia*, 334.

32 Deveraux, *The Long Trip*, 125.

33 Hui-Lin Li, "HALLUCINOGENIC PLANTS IN CHINESE HERBALS," *Botanical Museum Leaflets, Harvard University* Vol. 25, No. 6 (1977), 166; Deveraux, *The Long Trip*, 132.

drugs made an unprecedented return; however, unlike colonial times, they now appeared in the fields of science and medicine. There was a psychedelic rediscovery globally during the twentieth century, calling this period the “psychedelic era.” What sparked this rediscovery? Perhaps one of the most significant inventions of the twentieth century, alongside the atomic bomb, was combining two substances that made up the new compound called lysergic acid diethylamide or better known as LSD. This psychedelic chemical goes by several names worldwide: LSD, acid, Lucy, sunshine, doses, among others. Soon enough, the introduction of LSD impacted the minds of millions. This compound spread across Western civilizations. The man responsible for this remarkable yet unusual invention was Swiss chemist Albert Hoffmann. At the time, the young chemist knew not the impact he would make by creating LSD in 1938, but he and millions of others would soon experience that impact for years to come.

Upon receiving a chemistry degree, Albert Hoffman received employment as a chemist in the laboratories at Sandoz Pharmaceutical, a research company in Basel, Switzerland. Hoffmann emphasized that his career as a chemist intertwined with the origin of LSD, believing this substance would have never been created if he had not accepted employment at Sandoz.³⁴ Even though Sandoz chemists mostly relied on synthetic processing and active creation of chemical substances, Hoffmann preferred the study of natural substances. In 1938 Hoffmann was tasked by Sandoz with performing a systematic research program to find a remedy for pain during childbirth. The end goal of his research program was to develop a substance showing uterotonic activity.³⁵ The study of ergot alkaloids was the main component of Hoffmann’s research. Ergot is a fungus that grows on rye and other cereal species, so it is naturally occurring. The chemical cleavage process isolated the ergot alkaloid nucleus, and this became known as lysergic acid. Hoffmann employed a synthetic procedure to yield new lysergic acid compounds in which uterotonic compounds were not present to see if any of these lysergic acid derivatives demonstrated unique pharmacological properties.³⁶ Thus, the 25th substance in this series of lysergic acid derivatives was created: Lysergic Acid Diethylamide. It was abbreviated as LSD-25 for laboratory purposes. Studies on this substance stopped after seeing that the derivative did not affect uterotonic activity in animal testing. LSD-25 remained shelved for five years, until April 19, 1943.

34 Albert Hoffman, *LSD, My Problem Child: Reflections on Sacred Drugs, Mysticism, and Science* (Santa Cruz, CA: MAPS, Multidisciplinary Association for Psychedelic Studies, 2009), 5.

35 Ibid, 14.

36 Ibid, 15.

Be it intuition or coincidence, but Albert Hoffmann believed there would be a use for LSD-25 in the field of pharmacology and his future research. Hoffmann synthesized the compound again in a tartaric acid salt form. However, this time Hoffman was interrupted by unusual sensations during this experiment. In Hoffmann's own words, he stated:

I suddenly became strangely inebriated. The external world became changed as in a dream. Objects appeared to gain in relief; they assumed unusual dimensions; and colors became more glowing. Even self-perception and the sense of time were changed. When the eyes were closed, colored pictures flashed past in a quickly changing kaleidoscope. After a few hours, the not unpleasant inebriation, which had been experienced whilst I was fully conscious, disappeared. What had caused this condition?³⁷

Hoffmann had accidentally experienced the first psychedelic effects of LSD, in which only one drop was absorbed on the skin of his fingers. That drop of LSD piqued Hoffmann's curiosity to new heights. Specifically, Hoffman was interested in how such a minuscule amount of the substance exhibited its effects on him for two hours. Hoffmann then decided to self-experiment to fully witness the effects of this drug, and without further ado. On April 19, 1943, Hoffman took one-fourth of a microgram of the solution with water, thinking that this small amount would enable him to record his experience, an incorrect prediction. The chemical effects of LSD began to take place within Hoffman's mind, and the origins of the first acid trip have now occurred.

April 19 became regarded as a holiday in some parts of the world, dubbed "Bicycle Day," in honor of when the first effects of Hoffman's acid trip took place during his bike ride home. However, Hoffman did experience a fair amount of fear while under the influence of LSD for the first time.³⁸ The effects only got stronger as time went on, and it seemed like an eternity for Hoffmann. The dosage's strength even made Hoffman believe that he was going insane and had his wife call a doctor to come to examine him. The doctor found no concerning physical abnormalities in Hoffman and believed him to be perfectly healthy. The only unusual feature in Hoffman's physiology was how profoundly dilated his pupils were. Slowly, Hoffmann gained a grip on reality and started to appreciate the effects, having feelings of immense gratitude and confidence that the insanity he thought he was in danger of has passed. The next day, Hoffmann stated that he woke up feeling better than usual, more

³⁷ Ibid, 18.

³⁸ Ibid, 20.

refreshed, just enjoying his morning simplicities.³⁹ Hoffman's reported positive experience, lack of physical or mental damage, and seemingly improved memory lead him to believe LSD-25 was unique. This self-experiment showed that LSD was psychoactive with unbelievable potency upon the minds of the ingesters, claiming the title as the most potent psychedelic substance in such low doses. Hoffman shared the experience with his colleagues, encouraging them to self-experiment to unlock potential beneficial uses.

LSD became a catalyst for psychedelic rediscovery in the twentieth century. Hoffmann and his team devoted all focus on expanding the research of this substance in the medical field. Their primary contention was that LSD could be used to treat mental health issues and psychological disorders, such as schizophrenia.⁴⁰ The researchers based that thesis upon LSD's mood-enhancing properties. Hoffman's creation was and is unlike any other humanmade substance on the planet. A point in why LSD was accepted at this time by researchers in Europe and eventually the U.S. is because of the credibility of Sandoz Laboratories as a professional, scientific institution, and the credibility of the professional scientists working alongside Hoffman researching this substance. In 1947, after multiple rounds of voluntary human testing, studies were beginning to look promising. Sandoz began to manufacture and sell LSD to those in psychology, psychiatry, chemistry, and investigators to further research the regular use of this psychedelic, which caused LSD to reach the United States finally.⁴¹

A new decade of testing was on the horizon for LSD. The U.S. had bountiful resources going into the 1950s, which meant there was much room for enhanced LSD research. However, there was a process of trial and error in the beginning. For example, psychiatrists modeled the ingestion of LSD to experience schizophrenia and use that information to treat the mental disorder; however, these experiments were unsuccessful.⁴² The experiments failed because of the significant chemical differences in a person's LSD induced state of mind instead of the mind of a person with schizophrenia. The silver lining to this failure allowed researchers to explore more avenues rather than focus on one mental disorder. The 1950s saw an immense amount of studies based on the therapeutic use of LSD, with over five hundred papers published discussing the new psychedelic.⁴³ LSD did a world tour of clinical use, with public medical centers stationed in the US, Canada, and all across Europe's continent.

39 Ibid, 21.

40 Ben Sessa and Michael Winkelman, *Advances in Psychedelic Medicine: State-of-the-Art Therapeutic Applications* (Santa Barbara: Praeger, 2019), 20.

41 Hoffman, *LSD, My Problem Child*, 25.

42 Stafford and Bigwood, *Psychodelics Encyclopedia*, Bigwood, 35.

43 Ibid, 40.

During the 1950s, several researchers mainly used LSD to help treat alcoholism and depression. Specifically, in Canada, at the Hollywood Hospital in Vancouver, B.C., the preliminary tests were quite promising for LSD treating alcoholism. The results show that over thirty percent of the patients that underwent LSD therapy to treat alcoholism were improved and had no desire to keep drinking.⁴⁴ Dr. Humphrey Osmand, a prominent LSD researcher in the 1950s, had better results when treating alcoholics.⁴⁵ Over six years, Humphrey and his team saw that forty-five percent of his patients did not return to alcohol after a year.⁴⁶ Lastly, at the University of Gottingen's Psychiatric Hospital headed by Dr. Hanscarl Leuner, they made use of LSD-assisted therapy for patients with anxiety, depression, and phobias who saw that seventy-six percent of those patients were improving with their mental health issue or recovered "fully."⁴⁷

One of the frightening sides of LSD's history occurs in the 1950s when the U.S. military and CIA found interest in using the psychedelic as a psychological weapon. Due to the Cold War with the USSR, the U.S. government was looking into several avenues to combat the Soviets if it ever came to be a hot war. This led to the creation of project MK-Ultra, a CIA operation with the goal of "investigating whether and how it was possible to modify an individual's behavior by covert means."⁴⁸ The CIA bought all of the LSD that Sandoz had when the project began to ensure that the Soviets had no access to this substance while covert testing was ongoing. Sandoz cooperated and determined to make more LSD after the CIA bought twenty-two pounds or 100 million doses of LSD from the research facility.⁴⁹ Once the CIA had possession of the substance, they began their experimentation. The experiment consisted of CIA agents giving LSD to human subjects, unaware that they had ingested the substance. This experiment was a covert operation, and the main tactic was spiking drinks of the unfortunate participants at restaurants and bars. The CIA tested various people in the general public,

44 Ibid, 80; "Hollywood Hospital program and lecture notes," Purdue University Archives and Special Collections, MSP 90, Purdue University Libraries <https://archives.lib.purdue.edu/repositories/2/resources/128>. Accessed August 16, 2020.

45 "History of LSD: Accidental Discovery, Recreational Use to Microdosing Treatment." Recovery.org, (October 31, 2019), <https://www.recovery.org/lsd-addiction/history/>. Accessed on September 8, 2020.

46 Ibid.

47 Stafford and Bigwood, *Psychedelics Encyclopedia*, Bigwood., 80; Hanscarl Leuner, *Monogr Gesamtgeb Neurol Psychiatr*. Vol. 95 (1962): 1-275.

48 U.S. Committee on Human Resources, *Human drug testing by the CIA, 1977: hearings before the Subcommittee on Health and Scientific Research of the Committee on Human Resources, United States Senate, Ninety-fifth Congress, first session, on S. 1893, September 20 and 21, 1977*, U.S. Government Printing Office, 1977, 206.

49 Stafford and Bigwood, *Psychedelics Encyclopedia*, Bigwood, 43

including prostitutes, mentally ill patients, military personnel, doctors, and the administration's agents. However, in 1966 CIA operatives determined that LSD was too dangerous to keep administering to so many people; it became more challenging to keep this covert operation under wraps.⁵⁰ The CIA did face several lawsuits once the project became public knowledge in 1976, but only a few cases were heard and settled by the authorities.⁵¹

Project MK-Ultra played a significant role in the propaganda for stigmatizing LSD and other psychedelics in American society. The CIA branding LSD as a psychological weapon overshadows the medical benefits it possesses and misguides anyone who is not aware of this psychedelic's properties and research. The CIA caused the public to become skepticism about this substance due to the project resulting in thousands drugged unknowingly, which assumed the unwilling participants had an adverse reaction or experience. On the one hand, people pointed to fear and even death associated with LSD because of the secrecy because of MK-Ultra. On the other hand, the CIA experiments with LSD ironically strengthened the hippie movement of the 1960s by inspiring prominent members of the counterculture movement, such as novelist Ken Kasey.

Kasey had his first experience with LSD at Menlo Park Veterans Hospital. He received seventy-five dollars compensation from participating in the program authorized and funded by the MK-Ultra program.⁵² Ken Kasey's acid experience inspired him to lead his "revolt of the guinea pigs," which entailed Kasey and his camp to distribute LSD to thousands of young people in the Bay Area.⁵³ The CIA had regrettably "turned on the wrong man," and added more fuel to the counterculture movement of the 1960s.⁵⁴ The intervention and management of these trials by the federal government provided the foundations that resulted in a full-on propagandized assault on LSD and other psychedelic drugs in the 1960s, all while paradoxically helping inspire the actors of the counterculture by exposing them to their covert research program.

One of the most profound discoveries with LSD came at the end of the decade in the 1950s; unfortunately, for LSD advocates, this was one of the last legal studies done in the first half of the century. Soon, an ethnobotanist named Richard Schultes studied ancient morning glory seeds in Mexico for the last five years of the decade. During Schultes' studies, something baffled

⁵⁰ Ibid, 47

⁵¹ Ibid, 48

⁵² Pollan, *How to Change Your Mind: What the New Science of Psychedelics Teaches Us about Consciousness, Dying, Addiction, Depression, and Transcendence*, 206.

⁵³ Ibid,

⁵⁴ Bruce Shlain and Martin A. Lee, *Acid Dreams: the complete social history of LSD: the CIA, the sixties, and beyond* (New York: Grove Press, 1992), 124.

him about the properties of these psychoactive plants. He was amazed when he noticed the similarities of the properties within morning glory seeds to LSD's properties, as far as effects go. Schultes wanted to find out if the two had any connection. Schultes contacted Hoffmann to see if he could run some tests on the morning glory seeds; Hoffmann's results show that there was indeed a connection.⁵⁵ The connection was that the seeds contained ergot alkaloids, which is an astonishing discovery because a synthesized compound, LSD, shared the same properties as an organic compound.⁵⁶ Ergots also belonged to a different plant kingdom branch than morning glories, making it even more of an exciting find. In 1958 another sagacious connection was found between psilocybin and LSD, based on tests comparing each psychedelic alkaloid. Through this connection, Hoffman was also able to synthesize psilocybin into a pill form by isolating the psychoactive compounds in magic mushrooms.⁵⁷ Today, researchers continue to use Hoffman's synthetic psilocybin method in their work.⁵⁸ Hoffmann had created a substance that shared similar psychedelic effects and properties to naturally occurring plants, the first in this field of study.⁵⁹ No scientist had ever created a substance that shared identical chemical similarities to that of a plant until Hoffman discovered the connection between morning glories, psilocybin, and LSD.

Twentieth Century Part II: Psychedelic Banning

With all the promising research of psychedelics' medical uses in the first half of the twentieth century, what happened that made psychedelics become so taboo and feared in American society? The sixties ushered in a new cultural relationship with psychedelics. During this decade, frequent LSD distribution to research facilities in the U.S. caused the psychedelic to become more accessible to the public. Access also became increasingly alarming to several psychologists, physicians, and government officials. Psychiatrists published several papers in the early 1960s to warn against LSD and other psychedelics recreationally without supervision or adequate knowledge.⁶⁰ Because set and the setting were at the core of the positive psychedelic experience, which simply refers to the frame of mind before taking a psychedelic drug and the environment in which it happens, many recreational users may have had

55 Stafford and Bigwood, *Psychedelics Encyclopedia*, 96.

56 *Ibid*,

57 Hoffman, *LSD, My Problem Child*, 128.

58 Pollan, *How to Change Your Mind*, 83, 113.

59 Hoffman, *LSD, My Problem Child*, 60-63.

60 "Human Psychedelic Research: A Historical and Sociological Analysis," MAPS. https://maps.org/index.php?option=com_content&view=article&id=5468; "adequate knowledge" refers to knowing the effects of psychedelics, understanding the dosage measurements, and knowing about the psychedelic rule of thumb: set & setting.

a harmful or dangerous experience by not being aware of this psychedelic rule of thumb. Several professionals believed that the public lacked enough education to use psychedelics without guidance, leading to potential dangers.⁶¹ These ideas eventually led to stricter regulations by the Food and Drug Administration (FDA) to limiting production and distribution to only certified companies.

The public image of psychedelics, especially LSD, did a complete 180-degree turn from the 1950s to the 1960s. LSD therapy gained much positive press toward the end of the 1950s, and much of that was due to Hollywood personalities participating in LSD therapy. The like Jack Nicholson, Stanley Kubrick, James Coburn, and many more celebrities gave interesting yet positive reports to the media about their LSD experience.⁶² Even within the 1960s, some still expressed puzzlement in the shift from positive to negative psychedelics views. Most notably, Senator Robert F. Kennedy, whose wife, Ethel, had been treated with LSD at Hollywood Hospital in Vancouver, the same hospital mentioned before. Kennedy was in a Senate subcommittee hearing in May of 1966 about the abuses of LSD and the possible defunding of FDA psychedelic research programs.⁶³ During the committee, Kennedy stated, "I think we have given too much emphasis and so much attention to the fact that it [LSD] can be dangerous and that it can hurt an individual who uses it [...] perhaps to some extent we have lost sight of the fact that it can be very, very helpful in our society if used properly ..."⁶⁴ Kennedy's assertions fell on deaf ears, especially when the FDA did respond to why they abruptly canceled all LSD research programs. Apart from Robert Kennedy, Hollywood's psychedelic advocates, and those within the counterculture, it would seem that the media and most of the general public would forget the positive press by the dawn of the new decade; in the 1960s, psychedelics would carry a new negative narrative distorted by propaganda, flawed research, and full-on moral panic.⁶⁵

The 1960s saw great conflict within the United States, and psychedelics exacerbated the decade's turbulence. The wave of young rebel members of the

61 Potential dangers include the possible occurrence of a bad trip, i.e. the development of severe fearful and anxiety states that can lead to suicide; psychic trauma for youths who have underdeveloped characters or those with either pre-existing psychiatric disorders or are genetically linked to severe psychiatric disorders like schizophrenia; and the distortion of reality as a side effect spells out possible harm for the user by not being aware of their surroundings, mental state of mind, or incapacity to perform certain tasks like driving a car.

62 Shlain and Lee, *Acid Dreams*, 62.

63 Pollan, *How to Change Your Mind*, 217.

64 Shlain and Lee, *Acid Dreams*, 93; "When Bobby Kennedy Defended LSD," MAPS, July 11, 2012. <https://maps.org/news/media/3152-when-bobby-kennedy-defended-lsd>.

65 Pollan, *How to Change Your Mind*, 211.

counterculture pioneered psychedelics' recreational use in American culture. Due to the increasing access of LSD for recreational use, the psychedelic started to gain a reputation among the youth and pop culture as a wonder drug where one can have a direct spiritual experience. Many youths in the sixties found such an experience incredibly enticing. LSD and other psychedelics quickly became synonymous with hippies, a sector of U.S. society becoming increasingly progressive and anti-government.⁶⁶ Many famous advocates for LSD and other psychedelics like Timothy Leary, Alan Watts, Aldous Huxley, and Richard Alpert were coming from a place of good intention in pushing for psychedelic experimentation. However, their intentions found no traction as some of their reputations, like Leary's, became tarnished in the public eye by advocating for psychedelic substances. In his speech at a hippy festival in San Francisco, Timothy Leary's famous quote became a slogan for those wanting psychedelic use and a banner for those against it; "Turn on, tune in, and drop out."⁶⁷ The famous phrase's meaning meant different things by the traditional American public sector vs. the counterculture's perception, but in Leary's own words, this phrase meant:

Turn on' meant go within to activate your neural and genetic equipment. Become sensitive to the many and various levels of consciousness and the specific triggers engaging them. Drugs were one way to accomplish this end. "Tune in" meant interact harmoniously with the world around you—externalize, materialize, express your new internal perspectives. "Drop out" suggested an active, selective, graceful process of detachment from involuntary or unconscious commitments. "Drop Out" meant self-reliance, a discovery of one's singularity, a commitment to mobility, choice, and change. Unhappily, my explanations of this sequence of personal development are often misinterpreted to mean 'Get stoned and abandon all constructive activity.'⁶⁸

It did not take long for traditionalist Americans and the U.S. government to notice LSD and psilocybin's growing popularity. The more conservative areas of society were quite concerned with the counterculture. Not only were

⁶⁶ Ibid, 58.

⁶⁷ Timothy Leary, *Flashbacks: A Personal Cultural History of an Era* (Los Angeles: G.P. Putnam's Sons, 1983), 253; "The Mind Explained." Netflix Official Site, September 12, 2019. https://www.netflix.com/watch/81062192?trackId=14170287&tctx=0%2C0%2C42446147-d81a-432d-blad-f7355afc52d9-654080914%2C681cbfda-819a-4039-a597-d203da10d2fb_117023625X3XX1574179206151%2C681cbfda-819a-4039-a597-d203da10d2fb_ROOT.

⁶⁸ Leary, *Flashbacks: A Personal Cultural History of an Era*, 253-4.

these young people a part of an anti-war movement and anti-establishment, but they were also using mind-altering drugs. There was a divide in U.S. society, and then came a consensus between opponents of the counterculture to demonize psychedelics because they were ruining the youth's minds. Even though nothing could be further from the truth, as there were no instances of or known lethal amounts for the potential of overdose with the classic psychedelics, but there were many dangers of taking them in high doses without guidance.⁶⁹

The media joined the fight against psychedelic drugs to further ignite the hysteria in the adult world. The press went from reporting the positive findings on the medicinal use of psychedelics to demonizing them as agents of terror upon those who ingest them. For instance, *Time* magazine published an interview article of Aldous Huxley in 1954 that talked about LSD in glowing terms, but by 1966 that same magazine published an article titled "Epidemic of Acid-Heads," which highlighted that psychotic illness was the result of LSD ingestion.⁷⁰ Likewise, *Life* magazine published an article in 1966 describing the threatening nature of psychedelics based on false claims, but it is ironic because *Life* also published a magazine in 1957 talking about the potential benefits of psychedelics in the medical field.⁷¹ These examples illustrate the second wave of psychedelic's negative stigma and the media's hypocrisy through the two different articles by *Life* and *Time* magazine. Among many others, these publications shared the blame for spreading the second act of psychedelics' negative stigma, which ultimately ceased their research and beneficial integration into the medical field. In 1966, the Drug Control Amendments forbade the manufacture and selling of LSD and other psychedelics, and all research with these substances abruptly stopped.⁷²

After President Richard Nixon's inauguration in 1969, he firmly came down on psychedelic drugs and other substances with psychoactive properties.⁷³ Nixon's rejection of psychedelics marked the beginning of the government's campaign for a war on drugs as all substance abuse was labeled

69 Hoffman, *LSD, My Problem Child*, 17.

70 Stephen Siff, "Henry Luce's Strange Trip: Coverage of LSD in 'Time' and 'Life', 1954-68," *Journalism History* Vol. 34, No. 3, (Fall 2008), 126-34.; "Epidemic of Acid-Heads," *Time*, March 11, 1966, 44.

71 Gerald Moore and Lawrence Schiller, "A Remarkable Mind-Drug Suddenly Spells Danger: LSD," *Life*, March 25, 1966, https://books.google.com/books?id=-UsEAAA-MBAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false; Bert Lahr, "Seeking the Magic Mushroom," *Life*, May 13, 1957, <http://www.psychedelicalibrary.org/lifep2.htm>.

72 "Human Psychedelic Research: A Historical and Sociological Analysis," MAPS.

73 Chris Barber, "Public Enemy Number One: A Pragmatic Approach to America's Drug Problem," last modified June 29, 2016. <https://www.nixonfoundation.org/2016/06/26404/> Accessed on September 8, 2020.

“public enemy number one.”⁷⁴ This classification made a clear statement that drugs and their users did not fit into the U.S. national identity. Psychedelics’ therapeutic potentials became buried under false claims by the media and the U.S. government’s hypocritical stance on these substances. In 1970, The Controlled Substance Act came into existence, which made psychedelic drugs illegal in every way and form. The Act categorized substances into five drug schedules. Violations for the use of Schedule-I substances included criminal prosecution to full-length sentencing, which remains in place today.⁷⁵ Schedule-I described its drugs as without medical use and unsafe to use even under medical supervision, with a high potential for abuse.⁷⁶ The other four Schedules all considered their substances to have the potential for medical use but went in descending order of high, medium, or low potential for abuse. The psychedelics that fell under the Schedule-I category were LSD, psilocybin, mescaline, peyote, and the psychoactive plant known as marijuana.⁷⁷ The U.S. government then applied international pressure for other countries worldwide to do the same, which many of them did.⁷⁸ Today, LSD, marijuana, and peyote remain in the Schedule-I category.

Many of those in psychiatry and psychology contended that the government’s hard stance on psychedelics was due to social considerations during the latter half of the twentieth century. Others have noted that this was because of health concerns, even though any health issues related to psychedelics were rare, as were crimes committed under these substances’ influence.⁷⁹ Therefore, many believe that the government took a hard stance against psychedelics because the officials were trying to dismantle the counterculture movement’s non-conformist attitude. Banning psychedelics may have been the easiest way to turn the world against the counterculture, psychedelics, and cut off their resources to continue fueling the movement. The root cause of psychedelics’ criminalization came from the negative stigma surrounding them, not scientific studies. The government authored the prevailing narrative, one which saw psychedelics as incompatible with the American identity. The stigma began with the Spanish Inquisition, then finalized with the counterculture and The Controlled Substance Act. Nixon’s

74 Ibid.

75 “Drug Scheduling,” DEA, Accessed August 16, 2020. <https://www.dea.gov/drug-scheduling>.

76 Ibid.

77 Ibid.

78 “United Nations Convention on Psychotropic Substances,” *International Legal Materials* Vol. 10, No. 2 (1971), 277.

79 Peter S Hendricks, *et al.* “The Relationships of Classic Psychedelic Use with Criminal Behavior in the United States Adult Population,” *Journal of Psychopharmacology* Vol. 32, No. 1 (January 2018), 37–8.

Act helped keep actual harmful drugs away from the public, but it did prevent those in American society from access medicinal psychedelic use from mental illnesses. Of course, there are several complex political factors at play with psychedelics in the twentieth century, but one cannot deny that the cultural stigma eclipsed psychedelic drugs' practical medical use.

Psychedelic Renaissance

The sixties and seventies' political climate, combined with U.S. legislative powers, caused psychedelic research to dismantle in full. The War on Drugs abruptly stunted research into psychedelic substances, which are now being studied as uniquely capable tools for treating mental illness. The governmental and a small sector of scientists' claims of psychedelic substances, primarily LSD, possessing harmful properties such as chromosome damage, congenital disabilities, and psychotic episodes, were enough to inspire fear and hatred toward these substances. However, these claims have proven false based upon thousands of studies throughout the years, and so the veil of negative propaganda has slowly lifted from psychedelics in the scientific community and the American public alike.⁸⁰ After almost half a century of clandestine and secretive use, a psychedelic revival once again has returned globally.⁸¹ One prominent contribution to this growing revival would be the difference in generations. Those who were in the counterculture or grew up watching it, now in the workforce, can now loosen the grip of older traditionalist generations that demonized psychedelics. Academic interests and scientific studies in psychedelic research began to trickle forth in the 1990s and 2000s, and by the determination of several scientists, psychiatrists, and activists, we are amid a psychedelic renaissance.⁸²

There are numerous factors in the reason why we are currently in a psychedelic renaissance. One of the first breakthroughs happened in 1990 at the University of New Mexico, which involved the first FDA approved psychedelic research program on healthy human subjects, headed by the University's own Dr. Rick Strassman, a professor, and a psychiatrist. Dr. Strassman sought approval and funding for over two years to study DMT's physiological effects on humans, a powerful psychedelic found in many plants and even in our human bodies in small amounts.⁸³ DMT was the perfect psychedelic substance to use for the first government-approved

80 Lester Grinspoon and James B. Bakalar, *Psychedelic Drugs Reconsidered* (Basic Books, 1979), 129.

81 Stephen Bright, "The Psychedelic Renaissance," YouTube Video, 16:12, July 13, 2017, <https://www.youtube.com/watch?v=Yt35dile6d4>.

82 Ben Sessa, "The 21st Century Psychedelic Renaissance: Heroic Steps Forward on the Back of an Elephant." *Psychopharmacology* Vol. 235, No. 2 (February 2018), 552..

83 Pollan, *How to Change Your Mind*, 48

tests. The government approved the tests because DMT exhibits a much shorter duration of effects than LSD or psilocybin, and DMT was relatively obscure to authorities and the public alike. After the test completion in 1995, Dr. Strassman contended that there were no physiological benefits to taking DMT; instead, the set and setting in which the individual takes it was far more critical due to the results showing that all participants had a mystical or spiritual experience that impacted them profoundly.⁸⁴ Many scholars have even theorized that DMT was a candidate for the origins of religion and spirituality.⁸⁵ Dr. Strassman's DMT research program was of enormous value to scientific research and psychedelic's political image. This study opened the door to the approval of further research into psychedelic medicinal use and played a significant role in paving the way for today's psychedelic studies.

Psychedelic research had even more traction in the twenty-first century than the past decades before. Psychiatrists and scientists are now exploring the old forms of psychotherapy with a growing variety of psychedelic substances. The next two psychedelics to gain momentum in legal-scientific research would be psilocybin and MDMA, better known as ecstasy. MDMA can be semi-grouped into the psychedelic category due to the similar mental releasing effects on the patient in a clinical setting to that of the other classical psychedelics.⁸⁶ Though MDMA does not possess magical or spiritual effects, this substance does contain properties that allow the user to explore and address trauma or painful realities without being overwhelmed by the past's negativity.⁸⁷

Psilocybin was the first psychedelic substance to emerge in the twenty-first century as a study for treating OCD and other personality disorders.⁸⁸ John Hopkins University School of Medicine, one of the top medical universities in the U.S., published the results that were quite positive in psilocybin based treatment for OCD and other mental disorders. Most notably, Roland Griffiths, a Doctor of psychiatry and neuroscience, contended that psilocybin caused mystical experiences and lasting positive personality

84 Rick Strassman, *DMT: The Spirit Molecule: A Doctors Revolutionary Research into the Biology of near-Death and Mystical Experiences*, Rochester (VT: Park Street Press, 2001), 17.

85 Strassman contends that religious experiences closely resemble a DMT experience in Zen Buddhism and in the Hebrew Bible. Many of his patients or participants report having spiritual experiences akin to being in the presence of a higher power or supernatural being(s).

86 Stafford and Bigwood, *Psychedelics Encyclopedia*, Bigwood, 71.

87 Louise Morgan, "MDMA-Assisted Psychotherapy for People Diagnosed with Treatment-Resistant PTSD: What It Is and What It Isn't," *Annals of General Psychiatry* Vol. 19, No. 1 (May 12, 2020), 1-2.

88 Sessa and Winkelman, *Advances in Psychedelic Medicine: State-of-the-Art Therapeutic Applications*, 3.

change.⁸⁹ Psilocybin has also been efficient in clinical trials of subjects with treatment-resistant depression.⁹⁰ Psilocybin carries properties that allow deep, personal insights to enhance mood and social skills, contributing to positive therapy findings for those with treatment-resistant depression.⁹¹

MDMA is most notably used to treat PTSD and addiction. MDMA psychotherapy trials and results are published and continually researched by the well-known scientific organization, Multidisciplinary Association for Psychedelic Studies (MAPS). Both psilocybin and MDMA have successfully treated alcoholism, PTSD, and anxiety.⁹² MDMA has also been used in psychotherapy to assist young adults with social anxiety on the autism spectrum, with results showing a significant and sustained decrease in social anxiety amongst the subjects in the study.⁹³ LSD has also clinically treated anxiety, but extensively to those who are terminally ill.⁹⁴ Psychedelic assisted psychotherapy for patients with terminal diagnoses has been an excellent area for psychedelic medicine for patients and those in the psychiatric medical field. Studies in the 1960s and the 2010s showed that LSD-assisted psychotherapy for terminally ill subjects reduced their anxiety and no adverse side effects, which persisted in the patients a year after the treatment.⁹⁵ Additionally, Psilocybin usage in psychotherapy for patients with cancer has shown patient improvement in mood, fear of death, and quality of life after clinical sessions.⁹⁶

Psychedelic research has emerged from the shadows, and testing is no longer confined to underground experimentation. Today, psychedelic research programs conduct experiments at top-tier universities worldwide, such as Cambridge University, John Hopkins University, Harvard, Yale, and many more.⁹⁷ Scholarly articles and medical journals on psychedelics multiply by the month, providing scientifically rooted information on the powerful healing effects that these substances possess in the field of medicine. There is

89 Ibid.

90 R.L. Carhart-Harris, "Psilocybin with Psychological Support for Treatment-Resistant Depression: Six-Month Follow-Up," *Psychopharmacology* Vol. 235, No. 2 (February 2018), 399–401. doi:10.1007/s00213-017-4771-x.

91 Ibid, 399.

92 Sessa and Winkelman, *Advances in Psychedelic Medicine*, 18-21.

93 Ibid, 21.

94 "LSD-Assisted Psychotherapy," MAPS, Accessed September 10, 2019. <https://maps.org/research/psilo-ld>.

95 Sessa and Winkelman, *Advances in Psychedelic Medicine*, 19.

96 Roland Griffiths, et al. "Psilocybin Produces Substantial and Sustained Decreases in Depression and Anxiety in Patients with Life-Threatening Cancer: A Randomized Double-Blind Trial," *Journal of Psychopharmacology* Vol. 30, No. 12 (December 2016), 1195-97. doi:10.1177/0269881116675513.

97 Sessa and Winkelman, *Advances in Psychedelic Medicine*, 1.

a formal recognition of psychedelics' long-lasting medical potential as mighty agents for the scientific exploration of consciousness and the mind. The implementation of psychedelics in the medical field would help the growing need for improved psychiatric treatments.

However, for the many benefits that psychedelics exhibit in the medical field, the risks for taking such recreational drugs must be known. These substances are not for everyone, and if taken without any prior knowledge of where they came from, their effects, or the legal consequences, then the experience could be quite unpleasant or dangerous. The campaign continues to displace psychedelics from the Schedule-I category, as it is evident that these substances have medicinal values. Hopefully, the psychedelic renaissance we see today will only grow in all parts of the world. For the medical community's benefit, psychedelics' stigma is growing weaker through every article, paper, and piece of research there is today. Furthermore, what is beneficial to the field of medicine is symbiotically beneficial to humankind. By combining today's technology, past research, and ancient cultural wisdom, the world will be able to use psychedelics as a microscope into the human mind.⁹⁸

Primary Sources:

Aaronson, Bernard Seymour, and Humphry Osmond. *Psychedelics; the Uses and Implications of Hallucinogenic Drugs*. New York: Anchor Books, 1970. <https://search.ebscohost.com/login.aspx?direct=true&db=cat01028a&AN=ishare.13302948&site=eds-live&scope=site>.

Barrett, Frederick S., and Roland R. Griffiths. "Classic Hallucinogens and Mystical Experiences: Phenomenology and Neural Correlates." *Current Topics in Behavioral Neurosciences* 36, (2018): 393–430. doi:10.1007/7854_2017_474.

DEA. "Drug Scheduling." Accessed August 16, 2020. <https://www.dea.gov/drug-scheduling>.

De Borhegyi, Stephan F., "Miniature Mushroom Stones from Guatemala." *American Antiquity* 26, no. 4 (1961): 498-504. doi:10.2307/278737.

Dishotsky, Norman I., William D. Loughman, Robert E. Mogar, and Wendell R. Lipscomb. "LSD and Genetic Damage." *Science*. American Association for the Advancement of Science, April 30, 1971. 431-440. <https://science.sciencemag.org/content/172/3982/431>.

"Epidemic of Acid-Heads," *Time*, March 11, 1966, 44. <http://content.time.com/time/subscriber/article/0,33009,899088,00.html>.

⁹⁸ The term "microscope" here reflects a quote from Alan Watts in his *The Joyous Cosmology: Adventures in the Chemistry of Consciousness*. The quote reads, "If you get the message, hang up the phone. For psychedelic drugs are simply instruments, like microscopes, telescopes, and telephones. The biologist does not sit with eye permanently glued to the microscope, he goes away and works on what he has seen."

- Hofmann, Albert. *LSD, My Problem Child: Reflections on Sacred Drugs, Mysticism, and Science*. Santa Cruz, CA: MAPS, Multidisciplinary Association for Psychedelic Studies, 2009.
- "Hollywood Hospital program and lecture notes," Purdue University Archives and Special Collections, MSP 90, Purdue University Libraries. <https://archives.lib.purdue.edu/repositories/2/resources/128>. Accessed August 16, 2020.
- Lahr, Bert. "Seeking the Magic Mushroom." *Life*, May 13, 1957. <http://www.psychedelic-library.org/lifep2.html>.
- Leary, Timothy. *Flashbacks: A Personal Cultural History of an Era*. Los Angeles, CA: G.P. Putnam's Sons, 1983.
- Leuner, Hanscarl. "Experimental Psychosis." *Monogr Gesamtgeb Neurol Psychiatr* 95, (1962):1-275. <https://pubmed.ncbi.nlm.nih.gov/13929987/>.
- Mooe, Gerald and Lawrence Schiller. "A Remarkable Mind-Drug Suddenly Spells Danger: LSD." *Life*, March 25, 1966. https://books.google.com/books?id=-UsEAAAAMBAJ&printsec=frontcover&source=gbg_summary_r&cad=0#v=onepage&q&f=false.
- Strassman, Rick. *DMT: The Spirit Molecule: A Doctors Revolutionary Research into the Biology of near-Death and Mystical Experiences*. Rochester, VT: Park Street Press, 2001.
- "UNITED NATIONS CONVENTION ON PSYCHOTROPIC SUBSTANCES." *International Legal Materials* Vol. 10, No. 2 (1971): 261-88. www.jstor.org/stable/20690737.
- U.S. Committee on Human Resources, *Human drug testing by the CIA, 1977: hearings before the Subcommittee on Health and Scientific Research of the Committee on Human Resources, United States Senate, Ninety-fifth Congress, first session, on S. 1893, September 20 and 21, 1977*, U.S. Government Printing Office, 1977.

Secondary Sources:

- Barber, Chris. "Public Enemy Number One: A Pragmatic Approach to America's Drug Problem." Last modified June 29, 2016. <https://www.nixonfoundation.org/2016/06/26404/>
- Blainey, Marc G. "Forbidden Therapies: Santo Daime, Ayahuasca, and the Prohibition of Entheogens in Western Society." *Journal of Religion and Health* 54, no. 1 (2015): 287-302. www.jstor.org/stable/24485257.
- Bright, Stephen, TEDxUniMelb. "The Psychedelic Renaissance." YouTube, July 13, 2017. <https://www.youtube.com/watch?v=Yt35di1e6d4>.
- Byre Jr., Robert A. "Hallucinogenic Plants of the Tarahumara." *Journal of Ethnopharmacology*. Vol. 1 (1979): 25, Amsterdam; New York: Elsevier.
- Carod-Artal, F.J. "Hallucinogenic Drugs in pre-Columbian Mesoamerican Cultures," *Neurologia (English Edition)*, Vol. 30 (January 2015): 45-55.
- Carhart-Harris, R. L., M. Bolstridge, C. M. J. Day, J. Rucker, R. Watts, D. E. Erritzoe, M. Kaelen, et al. "Psilocybin with Psychological Support for

- Treatment-Resistant Depression: Six-Month Follow-Up." *Psychopharmacology* Vol. 235, No. 2 (February 2018): 399–408. doi:10.1007/s00213-017-4771-x.
- Devereux, Paul. *The Long Trip: A Prehistory of Psychedelia*. Brisbane, Australia: Daily Grail Pub., 2008.
- Else, James W.B. "Psychedelic Drug Use in Healthy Individuals: A Review of Benefits, Costs, and Implications for Drug Policy," *Drug Science, Policy and Law* Vol. 3 (January 2017): 1-11. doi:10.1177/2050324517723232.
- Griffiths, Roland R., Matthew W. Johnson, Michael A. Carducci, Annie Umbricht, William A. Richards, Brian D. Richards, Mary P. Cosimano, and Margaret A. Klinedinst. "Psilocybin Produces Substantial and Sustained Decreases in Depression and Anxiety in Patients with Life-Threatening Cancer: A Randomized Double-Blind Trial." *Journal of Psychopharmacology* Vol. 30, No. 12 (December 2016): 1181–97. doi:10.1177/0269881116675513
- Grinspoon, Lester, and James B. Bakalar. *Psychedelic Drugs Reconsidered*. Basic Books. 1979.
- Guzmán, Gastón. "Hallucinogenic Mushrooms in Mexico: An Overview." *Economic Botany* 62, no. 3 (2008): 12-404. www.jstor.org/stable/40390479.
- Hendricks, Peter S, Michael Scott Crawford, Karen L Cropsey, Heith Copes, N Wiles Sweat, Zach Walsh, and Gregory Pavela. "The Relationships of Classic Psychedelic Use with Criminal Behavior in the United States Adult Population." *Journal of Psychopharmacology* Vol. 32, No. 1 (January 2018): 37–48. https://doi.org/10.1177/0269881117735685.
- Highpine, Gayle, Sachahambi, Alex, Martha Hoffer, Lynette Yetter, and Robert Hudson. "Unraveling the Mystery of the Origin of Ayahuasca." *Ayahuasca Journey*. February 26, 2017. http://www.ayahuasca.com/amazon/botany-ecology/unraveling-the-mystery-of-the-origin-of-ayahuasca/.
- "History of LSD: Accidental Discovery, Recreational Use to Microdosing Treatment." Recovery.org, October 31, 2019. https://www.recovery.org/lsd-addiction/history/.
- Hoffman, Albert. "Teonanácatl and Ololiuqui, two ancient magic drugs of Mexico." *UNODC Bulletin on Narcotics* Issue 1 (1971):3–14. https://www.unodc.org/unodc/en/data-and-analysis/bulletin/bulletin_1971-01-01_1_page003.html.
- "Human Psychedelic Research: A Historical and Sociological Analysis." MAPS. Accessed September 10, 2019. https://maps.org/index.php?option=com_content&view=article&id=5468.
- Johnson, Matthew W, Peter S Hendricks, Frederick S Barrett, and Roland R Griffiths. "Classic Psychedelics: An Integrative Review of Epidemiology, Therapeutics, Mystical Experience, and Brain Network Function." *Pharmacology & Therapeutics* Vol. 197 (May 2019): 83–102. doi: 10.1016/j.pharmthera.2018.11.010.
- Krippner, Stanley, and Michael Winkelman. "Maria Sabina: wise lady of the mushrooms." *Journal of psychoactive drugs* Vol. 15, No. 3 (1983): 225-8. doi:10.1080/02791072.1983.10471953.

- "Legal Status of Ayahuasca in Brazil." Erowid Ayahuasca Vault: Notes on Brazilian Ayahuasca Law, March 2001. https://erowid.org/chemicals/ayahuasca/ayahuasca_law6.shtml.
- Li, Hui-Lin. "HALLUCINOGENIC PLANTS IN CHINESE HERBALS." *Botanical Museum Leaflets, Harvard University* Vol. 25, No. 6 (1977): 161-81. <http://www.jstor.org/stable/41762784>.
- Lin, Tao. "Psilocybin, the Mushroom, and Terence McKenna." *Vice*. August 12, 2014. https://www.vice.com/en_us/article/yvqqpj/psilocybin-the-mushroom-and-terence-mckenna-439.
- Lister, Robert H. "The Artifacts of Uaxactun, Guatemala. A. V. Kidder. Publications, Carnegie Institution of Washington, No. 576. Washington, 1947. 76 Pages, 87 Figures." *American Antiquity* Vol. 14, No 2. (October 1948): 136-37. doi:10.2307/275231.
- "LSD-Assisted Psychotherapy." MAPS. Accessed September 10, 2019. <https://maps.org/research/psilo-ld>.
- "The Mind Explained: Psychedelics." Netflix Official Site, September 12, 2019. https://www.netflix.com/watch/81062192?trackId=14170287&tctx=0%2C0%2C42446147-d81a-432d-b1ad-f7355afc52d9-654080914%2C681cbfda-819a-4039-a597-d203da10d2fb_117023625X3XX1574179206151%2C681cbfda-819a-4039-a597-d203da10d2fb_ROOT.
- Morgan, Louise. "MDMA-Assisted Psychotherapy for People Diagnosed with Treatment-Resistant PTSD: What It Is and What It Isn't." *Annals of General Psychiatry* Vol. 19, No. 1 (May 12, 2020): 1-7. doi:10.1186/s12991-020-00283-6.
- Nichols, David E. "Psychedelics." *Pharmacological Review* Vol. 68, No. 2 (April 2016): 264-355. doi: 10.1124/pr.115.011478
- "Oxford Languages and Google - English." Oxford Languages. Accessed September 16, 2020. <https://languages.oup.com/google-dictionary-en/>.
- Pollan, Michael. *How to Change Your Mind: What the New Science of Psychedelics Teaches Us about Consciousness, Dying, Addiction, Depression, and Transcendence*. London: Penguin Books, 2019.
- Schultes, Richard Evans, Albert Hofmann, and Christian Rätsch. *Plants of the Gods: Their Sacred, Healing, and Hallucinogenic Powers*. Healing Arts Press. 2001.
- Sessa, Ben. "The 21st Century Psychedelic Renaissance: Heroic Steps Forward on the Back of an Elephant." *Psychopharmacology* 235, no. 2 (February 2018): 551-60. doi:10.1007/s00213-017-4713-7.
- Shlain, Bruce and Martin A. Lee. *Acid Dreams: the complete social history of LSD: the CIA, the sixties, and beyond*. New York: Grove Press, 1992.
- Shroder, Tom. *Acid Test: LSD, Ecstasy, and the Power to Heal*. New York: Plume, 2015.
- Siff, Stephan. "Henry Luce's Strange Trip: Coverage of LSD in 'Time' and 'Life', 1954-68." *Journalism History* Vol. 34, No. 3 (Fall 2008): 126-34.
- Stafford, Peter G., and Jeremy Bigwood. *Psychedelics Encyclopedia*. Berkeley, CA: Ronin Pub., 1992.

- TEDMED. "The Science of Psilocybin and Its Use to Relieve Suffering." YouTube. YouTube, April 20, 2016. <https://www.youtube.com/watch?v=81-v8ePXPd4&list=WL&index=137&t=0s>.
- TEDx Talks. "Can Magic Mushrooms Unlock Depression?" YouTube. YouTube, February 28, 2017. <https://www.youtube.com/watch?v=8kfGaVAXeMY&list=WL&index=132&t=436s>.
- TEDx Talks. "Psychedelics: Past, Present and Future." YouTube. YouTube, November 21, 2017. <https://www.youtube.com/watch?v=JI1dwVsPw2E&list=LLI6rgoDPUT8CZLaCP8wFmMA&index=22&t=0s>.
- U.S. Forest Service. *Plants of Mind and Spirit - Teonanacatl Mushrooms*. 2019. https://www.fs.fed.us/wildflowers/ethnobotany/Mind_and_Spirit/teonanacatl.shtml.
- Wendorf, Fred. "Stephan F. De Borhegyi, 1921-1969." *American Antiquity* Vol. 35, No. 2 (1970): 194-200. www.jstor.org/stable/278148.
- "When Bobby Kennedy Defended LSD." MAPS, July 11, 2012. <https://maps.org/news/media/3152-when-bobby-kennedy-defended-ldd>.
- Winkelman, Michael, and Ben Sessa. *Advances in Psychedelic Medicine: State-of-the-Art Therapeutic Applications*. Santa Barbara, CA: Praeger, 2019.

