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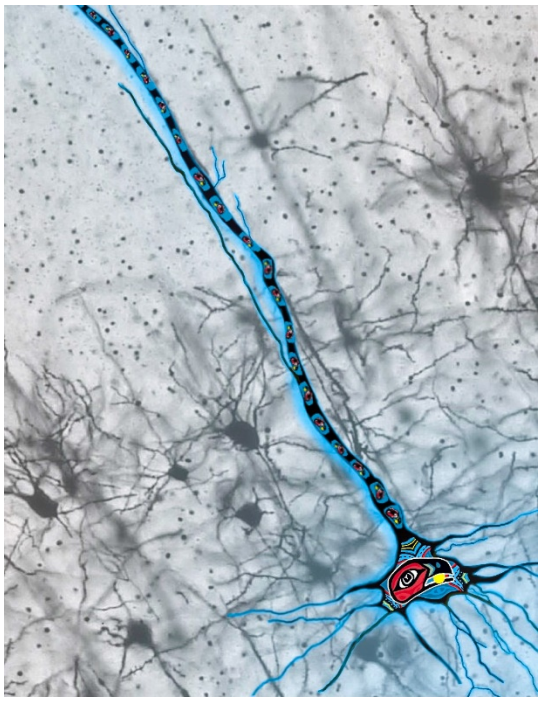
Cover Art—"Indigenizing Neuroscience"

Temerity Bauer*, Biology

Our research community at the University of Oregon is a brain. Each researcher represents a singular neuron, microglia, ion transport channel or other part of the complex machinery that plays a crucial role in our 'brain' as a top tier research institution. My Native American Heritage often makes me feel like an outsider because research, especially scientific, is a predominantly white field. At the University of Oregon, I have been able to express myself and strengthen my connection to my culture and my passions in research. My PI, Dr. Jaramillo, has helped me connect with other Native American researchers through opportunities like the SACNAS conference. We also have a journal club where once a month we read a paper about diversity, socioeconomic problems, and more which helps make me and other students in our lab feel more supported and empowered. So now, instead of a small neuron hiding, I am empowered and confident in my work, as represented by the singular Native neuron. This drawing represents me, indigenizing a field where my people and other minority groups have not been welcomed before. This drawing also represents the beauty that can be found when indigenous people or other minorities are empowered and work in normally predominantly white fields. Most importantly, this image represents the need for more Indigenous students and faculty to diversify and strengthen our scientific community, instead of one neuron there needs to be a push for several more to benefit our "brain" as a whole.



*Temerity Bauer is an enrolled member of the Round Valley Tribes of Northern California. She is a junior biology major in the Clark Honors College, where she conducts research in the Jaramillo Neuroscience Lab. She hopes to pursue an MD-PhD to provide medical care to her people and to study how the environment has negatively impacted the health of her people. Please direct correspondence to temerity@uoregon.edu.

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Letter from the Editor

Starla Chambrose*, Biology and History

Dear Readers,

As for many students this past year, the COVID-19 pandemic completely derailed my research plans. I had been working on my thesis in a lab in the Institute of Ecology and Evolution since the winter of my sophomore year. By the spring of 2020, the end of my junior year, I felt like my project was close to completion. Just a more months of benchwork, I thought, and I would have finished with all my data collection. But then the pandemic hit, and I was prevented from entering the lab for the foreseeable future. I brainstormed with my thesis advisor, but by mid-summer we had reached a sad conclusion; even if the lab were open by the end of the summer, there was no possible way for me to finish my project. I had to scrap my entire thesis. Fortunately, it all worked out in the end. In early June, I finished my thesis—not in biology, but in history instead.

My research story is certainly not unique. Over the past year, students across the university were forced to adapt to the new situation—and adapt they did. The following manuscripts in this edition of *OURJ* are proof of that. When their access to sources was limited, our authors turned to focus on close-reading analysis. When they might have previously conducted research in a lab, they took the opportunity to conduct literature reviews and evaluate prospective areas for future study. Although their research projects may not have panned out in the way that they had originally planned, I am incredibly impressed by and proud of what they were able to accomplish; I hope you, dear reader, are, too.

As much as I am grateful to the authors for submitting their work to *OURJ*, I am equally thankful for the editorial board members who worked tirelessly to ensure that this journal would continue to publish student work even during a pandemic year. To my fellow seniors, Shuxi and Noa, thank you, and best of luck with your future plans. While I am sad to leave *OURJ* after four years and four issues as editor in chief, I am confident that I'm leaving the journal in good hands. Taylor, I know you will be an outstanding editor in chief, especially with Jay, Micah, and Anna by your side. Finally, I owe the biggest thank you to Barbara Jenkins, who retired this spring after helping behind the scenes since the journal's inception in 2010. For all that you have done over the past eleven years, thank you, thank you, thank you.

On behalf of the editorial board, please enjoy this 19th issue of the *Oregon Undergraduate Research Journal.*

*Starla Chambrose is a senior in the Clark Honors College majoring in biology and history. In addition to serving on the *OURJ* editorial board, she is a member of the university's Rotaract club, works as a tutor for Biology 214, and volunteers as a crisis counselor. She conducts research in the Cresko Laboratory and under Professor Valiani in the history department. In her free time, Starla enjoys watching football, cooking, and playing the piano. Please direct correspondence to ourj@uoregon.edu.

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Guest Editorial—"Building Research Communities During a Pandemic"

Lanie Millar, Associate Professor of Spanish and Portuguese

This editorial is adapted from Prof. Millar's presentation "Humanities Research in Covid Times" organized by UO's Center for Latino and Latin American Studies.

What does it mean to do research during a global pandemic? Many of us have grappled with challenges and tragedies over the past year, but we also acquired new skills as our educational lives shifted largely or entirely online. Students and professors have learned to use online technologies to create new scholarly communities, to share resources, and to work around limitations to accessing faraway materials. Together, we have explored new kinds of engagements with our scholarly topics through avenues that we might not have discovered if our research had not been interrupted by the Covid-19 pandemic.

Over the past year I also found myself reconnecting with the basic research skills and working around limitations that I first encountered as an undergraduate. In my fields of Caribbean and African literature, my research relies on travel to distant archives and libraries, which usually do not have online collections or even online catalogs. I study books that are sometimes sold only locally and don't make their way onto global book retail websites. I depend on interlibrary loans from the networks of US and international libraries that share materials through the mail. None of these research pathways has been fully available over the past year. I had to figure out how to change my focus, adjust the scope of my projects, reach out to online communities of other scholars for help, and in one case, acknowledge in my footnotes that there were resources I knew existed that I simply could not include in my bibliography. I did what I could in the circumstances and filed these changes away as new directions I could return to in the future.

Undergraduates make original research contributions to their fields with many of the same constraints, but these can often provide future learning opportunities. One of the most valuable parts of my undergraduate research experience was beginning to learn how to be part of a scholarly community. My senior year of college, one of my professors invited me to present a paper at our university conference, where undergraduates and faculty participate on panels together. I drafted and redrafted my paper and practiced my presentation so it was as polished as I could make it. However, I found the most engaging part of the experience was the part I had not rehearsed: when the audience asked questions. They brought up aspects I hadn't considered and offered new perspectives on my analysis.

Similarly, during my undergraduate thesis defense, my professors asked me questions that I had prepared for through my research and writing, as well as some that I couldn't yet answer. These questions stayed with me and helped guide my research as a graduate student and a professor. Through both my first conference presentation and my first major research project I learned that scholarly research is an ongoing activity, and one in which we collaborate with others in our fields, whether we are part of a team of researchers and authors or writing our own papers. We can be satisfied with finished projects after we have presented them, published them,

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or successfully defended them. At the same time, finished research projects become an opportunity for new audiences to engage with our research, and for new questions to arise that can help us think in new directions.

The pandemic has emphasized these lessons for me, and, I think, for many undergraduates. Our research has often benefited from the connections and collaborations that became possible through Zoom and other online platforms, and the willingness to share and help each other as we all figured out how to reach our research goals amid the challenges of the covid era. Undergraduates should feel proud of their research accomplishments carried out under difficult circumstances. They can also be proud to carry with them in their post-college lives valuable lessons in collaboration and adaptability and being open to future opportunities to put their research skills to new uses.

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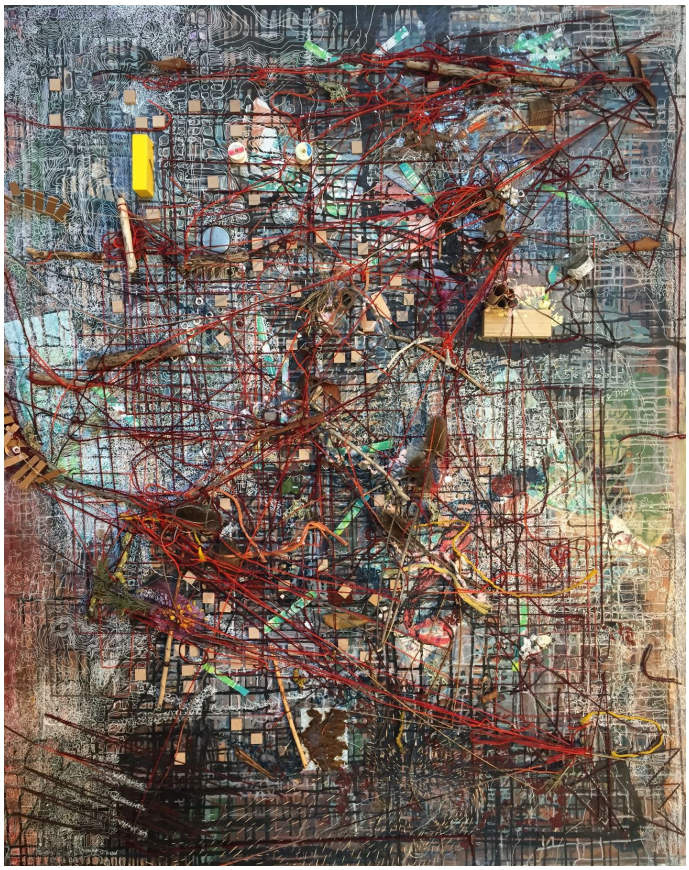
Art Feature—"A Child's Map to a Future World"

Billy von Raven*, Art

"A Child's Map of a Future World" is a mixed media work on wood panel that investigates how a future descendant might map a world of climate breakdown using accumulated everyday fragments. These fragments were chosen according to how a child might respond to materials: regarding felt knowledge, relationships, or experiences, not just aesthetics. Both nonhuman and human-made, the materials embody inextricable relationships between the social world and the nonhuman world. Since neither maps nor relationships are fixed, each arrangement of the world is of its moment and therefore always in flux but, at the same time, is specific, differentiated, and relational. This dynamic world-building is fundamental to producing culture and remaking human relations with each other, place, material, nonhuman kin, and ecosystems. The map supposes an alternative to a fear-based apocalyptic future but does not offer a didactic solution or a moral imperative. It is rather a story, a door, a way into a future—because engagement in specific, material relationships is a method of inquiry, a way of reconfiguring the extractive paradigm that is driving the current climate crisis.



*Billy von Raven is a transdisciplinary artist trained in music composition, writing, and visual art. He enjoys cosmology, backpacking urban and public lands, and critical environmental theory and praxis. In June 2021, he will graduate with a BFA in art with a concentration in painting and drawing. Please direct correspondence to billyv@uoregon.edu.

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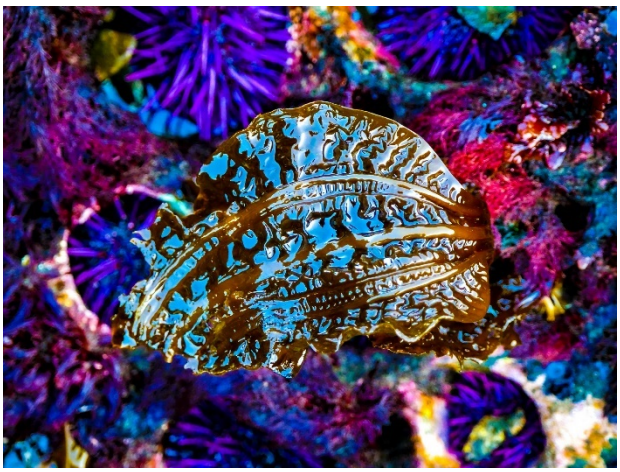
Art Feature—"Intertidal Intricacies"

Anna Lake*, Marine Biology

This photo series was taken while out in the field for a class at the Oregon Institute of Marine Biology (OIMB), the coastal campus of the University of Oregon. These pictures represent the small intricacies in the beautifully diverse world of the rocky intertidal. Shown is the wide spectrum of organisms one can find from invertebrates to many forms of seaweed. My hope is to shed light on how delicate and beautiful this world is to inspire others to search and find this beauty themselves here on the Oregon Coast. This series captures a side of the work done by STEM students at OIMB that is connected to their research. Scientific work needs to draw the attention of the general public; it is important to have an artistic and aesthetically pleasing presentation of scientific work in order to capture interest at first glance. Creative thought stems great scientific discoveries and is provoked by artistic expression; the intersection of art and science is needed to drive innovation.



*Anna Lake is a senior studying marine biology with a strong passion for interdisciplinary communication through different mediums. She has been taught how to see the world as a scientist, but she has the gift of having an artistic view of the world that compliments the other side my myself. Please direct correspondence to alake5@uoregon.edu.

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Meet the Editorial Board

NOA COHEN

Noa Cohen is a senior in the Clark Honors College majoring in biological anthropology and general science and minoring in global health, biology, chemistry, and music. Her research interests include cognitive neuroscience and primate behavior. With the Posner Cognitive Neuroscience Lab, she researchers the effect of electrical stimulation on smoking cessation. She also studies Japanese Macaque male bonding at the Oregon National Primate Research Institute. This year she will study cognitive behavioral therapies to help adolescents with Autism Spectrum Disorder at the HEDCO clinic. In addition to serving as an editor at the OURJ, she works as a contact tracer and case manager for the Corona Corps at the University of Oregon. Outside of school, Noa enjoys playing classical piano, reading, and painting.

TAYLOR GINIECZKI

Taylor Ginieczki is a junior majoring in political science, minoring in global studies, and studying Spanish and French. Her research interests include international relations theory, collective action and cooperation, terrorism studies, and nuclear weapon nonproliferation, and she plans to attend graduate school for political science in order to become an academic in international relations. At the UO, Taylor is a Wayne Morse Scholar, a poetry editor for the student arts journal *Unbound*, the treasurer of the Economics Club, and a member of the Foreign Policy Forum Club. Beyond academics, she loves nature photography, writing poetry, painting, and playing guitar.

ANNA NGUYEN

Anna Nguyen is a junior in the Clark Honors College majoring in economics and political science. She is passionate about public policy and has research interests in eviction, racial inequality, and environmental justice. Her work is grounded in the belief that intersectional advocacy and community-oriented action serve as catalysts for transformative societal change. In addition to her involvement in the UO Vietnamese Student Association and the UO Economics Club, Anna is a Wayne Morse Scholar and conducts research for the US-VN Research Center. She often spends her free time reading and loves discovering new documentaries and podcasts.

JAY TAYLOR

Jay Taylor is a sophomore majoring in linguistics and minoring in computer science and Korean. He currently serves as the Financial Coordinator for the University of Oregon LGBTQA3 office and co-president of the UO Model United Nations club. He recently discovered a strong interest in research and presented on the topic of mental health in South Korea at the 2020 Oregon

Undergraduate Research Symposium. He is passionate about learning new languages, non-profit management, and making the world a better place.

MICAH WOODS

Micah Woods is a sophomore in the Clark Honors College majoring in environmental studies and philosophy and minoring in biology. Their research interests include environmental philosophy, social and political philosophy, transgender theory, issues in sustainable agriculture, and the use of fear rhetoric in relation to environmental issues. Micah is a Presidential Scholar and currently serves as a writing tutor at the UO Tutoring and Academic Engagement Center and as the Student Organizations Liaison Coordinator with the UO LGBT Education Support Services. Their non-academic interests include singing, playing guitar, watercolor, learning about plants, and exploring Eugene on bike and skateboard.

SHUXI WU

Shuxi Wu is a senior majoring in anthropology, Asian studies, economics, and international studies. Her research concerns globalization, urbanization, migration and new media. She plans to go to graduate school in anthropology. She is the associate director of the UO Associated Students of Undergraduate Research and Engagement and the vice president of the UO Anthropology Club.

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"Don't Kill My Buzz, Man!" – Explaining the Criminalization of Psychedelic Drugs

Conrad Sproul*, Political Science and Economics

ABSTRACT

In the 1950s, psychedelic drugs were the subject of extensive psychiatric research in the United States. By 1960, they had been found to be non-addictive, to have remarkable safety profiles, and to potentially be able to treat a range of psychological conditions. However, in 1968, the possession of psychedelics was criminalized by the US federal government. Consequently, medical research has been stifled, and today the possession and distribution of psychedelics are punished more severely than for more dangerous recreational drugs such as methamphetamine. Most scholars argue that psychedelics were criminalized due to a "moral panic" in the late 1960s. However, this theory overlooks several important aspects of the political process that led to psychedelic criminalization. This essay takes an alternative stance. First, early 20th century temperance advocates instilled an anti-drug moral framework into the American cultural consciousness. Then, in the early 1960s, safety concerns and professional biases led most mainstream psychiatrists to reject the therapeutic use of psychedelics. These factors interacted to cause both a moral panic and severe criminalization, but the moral panic did not itself cause criminalization.

1. INTRODUCTION

For thousands of years, multiple cultures have used psychedelic drugs for their medicinal properties and ability to induce mystical experiences (Siff 2015, 68). But today, these substances have been heavily criminalized across the developed world. In the United States, for example, possession or distribution of psychedelic drugs carries more severe penalties than even such notoriously dangerous and addictive substances as cocaine, methamphetamine, or morphine (DEA n.d. "Controlled Substance").

This has not always been the case. In the 1950s, psychedelics were not seen as "hard drugs" but were touted by the American media as a revolutionary psychiatric medicine (Siff 2015, 61). Even in the early 1960s, as recreational use of LSD and other psychedelics became widespread in the US, most Americans were not highly concerned about recreational drug use (143). But between the 1965 and 1971, public opinion shifted radically. Psychedelics were soon after banned for

*Conrad Sproul is a fourth-year student who will graduate in June 2021 with a B.S. in political science and economics. After graduation, he plans to attend law school and pursue a career as an attorney specializing in environmental and/or human rights issues. Please direct correspondence to csproul@uoregon.edu.

medical as well as recreational purposes, first nationally in the US, and then globally via the United Nations Convention on Psychotropic Drugs.

This rapid policy shift is even more intriguing because of its clear disconnect with scientific fact. Most psychedelics are currently classified as Schedule I by the US Drug Enforcement Agency (DEA), a category reserved for drugs with "no currently accepted medical use in the US, a lack of accepted safety for use under medical supervision, and a high potential for abuse" (n.d. "Controlled Substance Schedules"). The latter two assertions are objectively false; psychedelics are remarkably non-toxic and non-addictive, as has been shown in dozens of clinical studies over the past 70 years (Drug Policy Alliance; Carhart-Harris and Goodwin 2017; Anderson et al. 2020; Nichols and Grob 2018). Contrary to popular belief, the psychological risks of psychedelic use are also negligible—very large-*n* studies have demonstrated no increased risk of mental health problems in psychedelic users (Johansen and Krebs 2015). Additionally, while the medical use of psychedelics is not currently legal in the US, studies dating back to the 1950s have demonstrated the drugs' immense potential in treating a range of psychiatric disorders (Liechti 2017; Winkelman 2014; Anderson et al. 2020; Das et al. 2016; Gasser 2014). For example, multiple recent trials have found that psilocybin (the active component in psychedelic mushrooms) produced significant clinical improvements in anxiety, depression, obsessive compulsive disorder, and alcohol dependence (Carhart-Harris and Goodwin 2017).

This thesis will explain the US government's bizarre conclusion in 1968 that, contrary to all available evidence, psychedelics were highly dangerous to society and had to be criminalized at the highest level. The primary objective of this project is to explain the rapid shift in public and governmental opinion in the US in the context of the global drug prohibition regime. The following sections draw extensively from the existing literature on the topic and supplement that secondary source research with careful examination and synthesis of the available historical evidence. Based on this evidence, this paper will challenge the dominant theory—that American prohibition of psychedelics was the result of a "moral panic" sparked by media sensationalism. The final two sections will demonstrate that, although a moral panic did occur, the primary cause of psychedelic criminalization was not the panic. Instead, it was neo-Puritan, anti-drug cultural norms, combined with a series of developments in the psychiatric research community, that persuaded lawmakers to criminalize psychedelics.

Section 2 discusses the methods used to collect and interpret evidence, as well as the limitations of the evidence and the study itself. Section 3 provides a brief overview of the key historical facts, to provide the reader with context for the argumentative portion of the thesis. Section 4 proceeds to review the literature on psychedelic criminalization (including the moral panic theory), as well as drug criminalization in the US more generally. Section 5 addresses at length the moral panic theory of psychedelic criminalization, assessing both its strengths and its shortcomings. Finally, Section 6 synthesizes the information from previous chapters into a cohesive theory, which incorporates the strongest elements of the moral panic theory while also addressing its weaknesses.

2. METHODS

2.1. PROCESS TRACING

In political science, establishing causal relationships is notoriously difficult. Political events may have hundreds of hidden, interrelated causes, none of which would have been enough to trigger the event on their own. Moreover, each specific political event only happens once—control groups and multiple trials are luxuries that the political scientist does not always enjoy. Therefore, theories in political science are built not only on statistics or experiments, but also on logical inference and careful argumentation. These arguments are supported by balanced and thorough investigation of the relevant historical facts. This is the approach used in this thesis—it applies a qualitative, process-tracing methodology to analyze the historical record and develop a theory to explain the global criminalization of psychedelics.

Before beginning the process-tracing step, it was necessary to develop a timeline of important developments, from the discovery of LSD in 1938 to the international prohibition of psychedelics in 1971. This timeline followed several interconnected sequences of events, which include: the early research and therapeutic use of psychedelics by the psychiatric community, the explosion of non-medical psychedelic use (including popular figures like Tim Leary who encouraged it), the association of psychedelics with the 1960s youth counterculture, and the evolving media representations of psychedelics through the 1950s and 60s. This timeline relied mainly on secondary literature, such as Lee and Shlain's (1985) *Acid Dreams* and Stevens's *Storming Heaven: LSD and the American Dream* (1987). Wherever possible, multiple independent secondary sources were used and/or primary sources were located to corroborate key factual points. The results of this analysis are outlined in the Historical Background section.

After the timeline, several plausible hypotheses were assembled to explain each major development in the path to psychedelic prohibition. These hypotheses ranged from narrow, e.g. "Tim Leary's testimony to the Senate in 1966 increased Senators' distaste for psychedelics," to broad, e.g. "When psychedelics were criminalized in 1968, most government officials believed they were legitimately dangerous." Many of these hypotheses were drawn from existing secondary literature on the topic—these are described in the Literature Review section. Others were developed by closely examining the timeline and searching for plausible causal relationships. Once a range of reasonable explanations had been determined for each major development, they were evaluated against the primary source evidence.

In gathering primary sources, the focus was on the 1960s, when the popularity of psychedelic drugs hit its zenith—and when they were criminalized throughout the US and the world. Three main types of sources were used. The first type was media representations of psychedelics, such as newspaper/magazine articles. The second type was governmental communications, such as the minutes from legislative hearings, public statements from government officials, and any private communications on the subject available. The third type was the scientific evidence available at the time, including safety and tolerability studies, research into psychedelics as psychiatric medications, and medical conference proceedings. Once collected, this primary source evidence was used to evaluate the hypotheses described above.

The result of this process is a theoretical account of the criminalization of psychedelics. This account combines the best-supported hypotheses into a single, coherent narrative. Where appropriate, alternative hypotheses are explained and refuted. Most aspects of this theory are drawn from secondary literature on the history of psychedelics, as well as the larger body of work surrounding American drug politics in general. Primary source evidence is also used throughout the paper to substantiate and reinforce important historical points.

2.2. METHODOLOGICAL LIMITATIONS

2.2.1. AVAILABILITY BIAS

The use of primary source evidence was necessarily subject to some availability bias. It was only possible to consider primary-source evidence that exists and is publicly available. This increases the likelihood that certain factors were over- or underrepresented in the evidence base. For example, federal and state governments are disinclined to release information that would harm their public image, and this has had tangible impacts on this project. Much of the primary source evidence on the CIA's psychedelic research program was purposefully destroyed in the 1970s, so it has been necessary to rely on secondary sources and the few primary reports that remain (Lee and Shlain 1985, 285). As another example, since magazine and newspaper articles are relatively easy to obtain, it has been difficult not to place disproportionate weight on media sources.

Availability bias was addressed by carefully considering the quality and nature of evidence, not just the quantity available. The approach used in this thesis was partially modeled after the inferential logic outlined in a 2011 article by David Collier. Collier proposes a process-tracing method which categorizes all pieces of primary evidence as necessary, sufficient, both, or neither to confirm a particular hypothesis. The quantity of evidence is less important than the logical inferences that can be drawn from each clue. The evidence used here was also deliberately gathered from a balanced and diverse range of sources. The bulk of the primary source analysis was based on contemporaneous medical journals, mainstream news media, and government publications. However, the analysis also incorporates whatever evidence could be found from underground newspapers, declassified and/or leaked CIA documents, and other less-conventional sources.

Of course, these measures may not have eliminated availability bias from this study. As with any historical investigation, this one is based on the limited, partial evidence that has survived the test of time. New evidence could emerge to contradict the narrative and theories presented here. If it does, then the conclusions of this thesis must be reevaluated.

2.2.2. SELECTION BIAS AND GENERALIZABILITY

This thesis focuses almost entirely on the specific case of psychedelic criminalization in the US. Although it also examines the UN's 1971 decision to include psychedelics in Schedule I of the Convention on Psychotropic Substances, that is done primarily to evaluate the role the US played

in that decision. This is therefore a within-case analysis—that is, it does not compare the causes of psychedelic criminalization in the US to the causes of psychedelic criminalization in other countries.

Since this study considers only one case, there is substantial potential for selection bias and lack of generalizability. In their paper on selection bias, Collier and Mahoney caution that within-case process tracing research is not generalizable to other cases (1996, 70-72). This is true for two main reasons. First, the researcher often chooses an extreme case to analyze, rather than a representative case. Indeed, this thesis focuses on the US partially for the sake of convenience and partially because the history of psychedelics in the US is dramatic and multi-faceted. So, the US may not necessarily be a good model through which to understand psychedelic criminalization in other nations. Second, even if the chosen case is not extreme, a qualitative, within-case analysis effectively amounts to a sample size of one—not near enough for a generalizable conclusion. In this work, these problems are addressed simply by making no claims of generalizability. The explanations provided here for psychedelic criminalization in the US do not necessarily shed light on the processes that led to psychedelic criminalization in other states.

However, even without attempting to generalize, selection bias may still impact the results of this study. Collier and Mahoney note that studies focusing on a particular case or subset of cases may miss important relationships and patterns present in the complete set (1996, 63-64). That is, there may be hidden factors that contributed to psychedelic criminalization in the US, factors that only become apparent when the US case is compared to many other cases. Extensive comparative analysis is outside the scope of this study, so these hidden factors, if they exist, will have to be uncovered by future research. On the other hand, the depth of analysis provided by the process-tracing method may provide insight that would not be possible with a broader, comparative method. Therefore, although selection bias presents a significant limitation, the process-tracing method was nevertheless the most effective way to investigate the research question at hand.

3. HISTORICAL BACKGROUND

The history of psychedelic use in the Americas dates back thousands of years. Since pre-historic times, naturally occurring psychedelics such as psilocybin mushrooms, mescaline-containing cacti, and ayahuasca brews have been used by Native tribes in North and South America (Frame n.d.; Kuhn et al. 121-128). To Indigenous users, these substances were not recreational; they were conduits to the divine. R. Gordon Wasson, the man who introduced psilocybin to white America, notes that "among the Indians, [psilocybin mushrooms'] use is hedged about with restrictions of many kinds . . . these are never sold in the marketplace, and no Indian dares to eat them frivolously, for excitement" (1957). By the late 19th century, white Americans had begun to experiment with peyote, and in 1897 chemist Arthur Heffter successfully isolated its psychedelic compound, mescaline (Frame, n.d.). But it was in 1938, at a laboratory in Switzerland, that the story of psychedelics in the US truly began.

3.1. ONSET OF ACTION

In that Swiss laboratory, which belonged to the pharmaceutical company Sandoz, Albert Hoffman was attempting to synthesize a new headache medication from the ergot fungus. He produced a wide range of novel compounds, but none passed animal trials—among the discards was an unassuming molecule, lysergic acid diethylamide, which Hoffman labelled "LSD-25." Five years later, in 1943, a "peculiar presentiment" convinced him to take another look at this chemical. In the process of resynthesizing it, Hoffman accidentally absorbed a microscopic amount through his skin—enough to begin the first LSD experience in history (Stevens 1987, 4-5).

Once the drug had worn off, it was clear to Hoffman that he had discovered something hugely significant. LSD was, by far, the most potent hallucinogen known to humanity. Sandoz spent several years attempting to determine what particular medical purpose it could serve. Ultimately, in 1947, Sandoz brought LSD to market under the brand name "Delysid." They distributed large quantities free of charge to researchers in an attempt to discover what exactly LSD was good for, sparking a massive wave of research in the early 1950s (to be discussed later in this section) (Pollan 2018, 142-143). Sandoz encouraged psychiatrists to not only prescribe LSD for a range of mental disorders, but also to consume it themselves, so as to achieve a better understanding of the psychotic mind (Frame, n.d.). As Sandoz peddled their invention on the pharmaceutical market, however, another customer took notice—the US Central Intelligence Agency.

3.2. PSYCHOCHEMICAL WARFARE

Long before LSD was well-known among the American public, it was extensively tested by the US Army and the CIA. Since the beginning of the Cold War in the mid-1940s, the US had been keenly interested in discovering a "truth serum," a substance that would render interrogees more malleable and likely to divulge secrets. Throughout the 1940s and 1950s the CIA conducted secret tests with cannabis, sedatives, and various combinations of other psychoactive substances (Lee and Shlain 1985, 5-12). At some point in the late 1940s or early 1950s (the exact date is not public information), they discovered LSD. The agency began testing it extensively on their own operatives, as well as funding external psychiatric research (Lee and Shlain 1985, 12-20). In 1954, a secret internal CIA memo was distributed, noting that LSD was "better adapted than known drugs to both interrogation of prisoners and use against troops and civilians," and lauding its "great strategic significance" (CIA 1954, 1).

These promising results led the CIA to initiate a secret program in 1953, one so blatantly unethical and illegal that, even today, it remains a major stain on the agency's reputation: Project MK-Ultra (Pollan 2018, 142). The goal of MK-Ultra was to test LSD's usefulness in the field, which was achieved in part by secretly dosing random civilians with large quantities of LSD and then subjecting them to simulated interrogations. The CIA also tested LSD's potential as a "brainwashing" agent on dozens of psychiatric patients, mostly racial minorities, without consent—a clear violation of the Nuremberg Code (Lee and Shlain 1985, 23-35). Internally, the CIA leadership justified their heinous acts with the classic Cold War refrain: *if we do not, the Soviets will get there first* (CIA 1954, 2; Lee and Shlain 1985, 27). In fact, Russia truly was engaged in a mind-control program of their own, although their focus was on electromagnetism rather than chemicals (Kernbach 2013).

Excuses aside, let it be clear: the US government used LSD as an experimental instrument of torture on unsuspecting American citizens, many of whom had committed no crime. Although many sources sugar-coat these experiments with sanitized terminology, this downplays their abhorrence. According to the UN Convention against Torture, "torture" is defined as "any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person by . . . a public official or other person acting in an official capacity" (OHCR 1984). High doses of LSD, administered without consent, combined with aggressive interrogation tactics, certainly inflicted severe mental suffering. That was the point; per the CIA's internal reports, the primary utility of psychedelic drugs was to "produce anxiety or terror" (Bimmerle 1993). In 1963, the CIA's Inspector General warned agents to take great pains to ensure that MK-Ultra remained secret, lest the agency's public image be ruined (Stevens 1987, 84).

By 1958, the US Army had begun its own series of experiments on LSD as a torture instrument. According to testimony by the Army's General Counsel in 1975, these experiments were mainly conducted on a group of about 600 US soldiers (Ablard 1975, 9, 15). One of these soldiers, a Black man named James Thornwell, was imprisoned and psychologically abused for three months, interrogated under the influence of a heavy dose of LSD, then released; mentally, he never recovered (Khatchadourian 2012). Apparently, the Army was satisfied with the results of their experiments, as LSD was then taken overseas and "field-tested" in the early 1960s (Ablard 1975, 12-14). This field testing entailed the detainment of "Orientals of various nationalities" who were suspected of Communist espionage or (ironically) drug trafficking (Khatchadourian 2012). These detainees were given massive doses of LSD in conjunction with more traditional torture methods like extreme temperatures and dehydration—several begged their interrogators for death (Lee and Shlain 1985, 39-40).

Torture was not the only goal of the CIA and Army's experiments with LSD. In 1959, Major General William Creasy petitioned Congress to fund an Army "psychochemical warfare" project (Lee and Shlain 1985, 36-37). LSD and other hallucinogens could be an alternative to nuclear weapons, Creasy argued, if administered to an enemy population via the air or water supply (Ablard 1975, 4-5). While a city's inhabitants wandered about in a hallucinatory delirium, Creasy believed, the US military could rush in and seize control without any loss of life or infrastructure. Congress approved Creasy's proposal for a psychochemical warfare project, although LSD turned out to be too difficult to administer to large populations (Lee and Shlain 1985, 36-37, 41). Instead, the Army moved on to more potent, easily administered superhallucinogens. One such weapon, BZ, was used in the Vietnam War and may have been considered for use against domestic insurgents (42-43).

None of the information in this section came to light until the mid-1970s, after the CIA had already purged most of the relevant evidence from its records (Lee and Shlain 1985, 285-286). But in hindsight, it is clear that nobody played a larger role in the early history of psychedelics in the US than its own military and intelligence agencies. The CIA not only provided tremendous resources to private researchers investigating LSD, but they also founded the first LSD production operation in the US (20-21, 27). Of course, the agents who authorized these decisions could not

have known that this experimental truth serum would come to revolutionize psychiatry and fuel a cultural upheaval like the US had never seen.

3.3. THE PEAK

After LSD hit the market in 1947, in no small part thanks to the efforts of the CIA and US Army, it spread like wildfire throughout the American psychiatric community. Initially, due to reports from the CIA and Army, it was believed that LSD's primary effect was to induce a temporary state of psychosis, and so it began to be dubbed a "psychotomimetic" (Lee and Shlain 1985, 19-21; Pollan 2018, 145-146). Even in 1951, however, there were those who believed it was something more. Chief among them was Al Hubbard, the "Johnny Appleseed of LSD." Hubbard, after trying LSD in 1951, immediately resolved to devote his life to spreading the psychedelic gospel.

One of Hubbard's close colleagues was psychiatrist Dr. Humphrey Osmond, with whom Hubbard worked to establish LSD treatment centers nationwide. These centers specialized in treating alcoholism and reported an astonishing 50% success rate (Lee and Shlain 1985, 45-50). In 1957, Osmond presented his results to the New York Academy of Sciences and spoke out against the "psychotomimetic" paradigm. The subjective effects of psychedelics, he contended, bore only a superficial resemblance to psychosis. Moreover, if all these drugs did was simulate mental illness, then how could they have such incredible therapeutic effects? (Pollan 2018, 150-151) Instead, Osmond proposed a new term for this novel class of substance, "psychedelic," from the Greek for "mind-manifesting" (Lee and Shlain 1985, 55). Evidently, the term has persevered.

Osmond's research on psychedelics also succeeded in attracting the interest of famous author Aldous Huxley, who volunteered himself for a mescaline trial in 1953 (Lee and Shlain 1985, 46). For Huxley, as for so many others before and after him, the psychedelic experience was life changing. A year later, he published a rapturous account of his trip: *The Doors of Perception*. "I was seeing what Adam had seen on the morning of his creation—the miracle, moment by moment, of naked existence" (Huxley 1996, 17). It is hard to overstate the impact of this book—psychedelics were relatively unknown to the American public, and now one of the greatest writers of the generation was singing their praises! (Lee and Shlain 1985, 47; Siff 2015, 61) Huxley goes so far as to suggest an education system in which intellectuals are "urged and even, if necessary, compelled to take an occasional trip through a chemical Door in the Wall" (1996, 76-78).

In large part due to Huxley's evangelizing, public interest in psychedelics continued to mount throughout the 1950s. This process was accelerated by a 1957 special in *LIFE* magazine entitled "Seeking the Magic Mushroom," an account of businessman R. Gordon Wasson's trip to Mexico to participate in an Indigenous mushroom ceremony. Like Huxley, Wasson was thrilled by his experience and even speculates that psilocybin mushroom experiences might have "planted in primitive man the very idea of god." Wasson, together with Huxley, played a tremendous role in introducing psychedelics to the American public (Lee and Shlain 1985, 72; Siff 2015, 73-86). By 1959, Americans from all walks of life were trying psychedelics for their medical benefits, the news media ran celebrity endorsements, and psychedelic therapists were widespread (Lee and Shlain 1985, 55-57; Siff 2015, 99-101). "By the end of the decade," says Pollan, "LSD was widely regarded

in North America as a cure for alcohol addiction" (2018, 151). Additionally, many artists followed Huxley's advice to turn to psychedelics for inspiration. These included Beat generation pioneers Jack Kerouac and Allen Ginsberg, whose revolutionary poem "Howl" was directly inspired by a mescaline experience (Lee and Shlain 1985, 60-61, 80; Miles 2005, 68; Stevens 1987; 113-114).

Among the many who took an interest in psychedelics after reading Wasson's article in *LIFE* was Harvard psychology professor Tim Leary. Seeking insight into the workings of the human mind, Leary took a trip to Mexico in 1960 to try psilocybin mushrooms for himself (Stevens 1987, 122). He was stunned. To a friend he exclaimed, "I learned more in six hours than in the past sixteen years!" Later, in his book *High Priest*, Leary recounts feeling an overpowering urge to share this "sacrament" with the world: "It will change your life! You will be reborn!" (133) Leary promptly returned to the states and launched the Harvard Psilocybin Project (Lee and Shlain 1985, 73-76).

The project at Harvard conducted a range of controversial experiments, with a range of fascinating results—for example, in the 1962 "Miracle at Marsh Chapel," churchgoers who ingested psilocybin before a service almost universally reported mystical experiences (Lee and Shlain 1985, 76-77; Stevens 1987, 168-169). Ultimately, however, Leary's Harvard colleagues grew uncomfortable with his gung-ho approach to psychedelics, particularly his highly unprofessional habit of taking the drugs alongside his test subjects. After a scathing exposé in the *Harvard Crimson*, the Psilocybin Project was shut down by the FDA, and Leary was dismissed (Lee and Shlain 1985, 87-88). However, he went on to become the single most influential advocate for the spiritual use of psychedelics (Miles 2005, 68-72; Pollan 2018, 139-139).

The FDA did not stop with the Harvard Psilocybin Project in 1962—later that year, they imposed stringent new regulations on pharmaceutical research, and began to deny most applications to research psychedelics (Lee and Shlain 1985, 91). Few researchers had the will or resources to meet the new FDA standards, and psychedelic research sharply declined (Belouin and Henningfield 2018, 9; Carhart-Harris and Goodwin 2017). Then, in 1965, the Drug Abuse and Control Amendments formally banned the unlicensed manufacture or sale of LSD (Lee and Shlain 1985, 93). These Amendments provided the FDA with sweeping authority to enforce this provision and prosecute illicit manufacturers or sellers (Abramson 1966; NIH 1966, 9). The final nail in the coffin for researchers hoping to investigate LSD came in 1966, when Sandoz declared it would no longer produce or sell the drug, cutting off the only legal source remaining (Schumach 1966; Stevens 1987, 281). But although legal psychedelic therapy and research was no longer possible, possession was not yet banned, and the recreational acid wave had just begun.

1965 was the golden age for recreational psychedelic users. The Free Speech movement and hippie counterculture were in full swing, and the black market was saturated with illegally manufactured LSD (Lee and Shlain 1985, 126-127, 146-147). Iconic madcap author Ken Kesey and his band of "Merry Pranksters" roamed the country in a technicolor van, dosing thousands with LSD in their "Electric Kool-Aid Acid Test" parties (Lee and Shlain 1985, 121; Miles 2005, 36, 48, 54). Folk legend Bob Dylan took to the stage and introduced the music world to a revolutionary, psychedelic-inspired style that came to be known as "acid rock" (Lee and Shlain 1985, 137). Many

other world-famous musicians, such as John Lennon and George Harrison of the Beatles and Syd Barrett of Pink Floyd, were similarly enamored with the drugs (Miles 2005, 84, 166). On college campuses, the use of psychedelics surged (Lee and Shlain 1985, 132). It seemed they were beginning to have a real impact on American society. But ultimately, the drug culture was a victim of its own success.

3.4. THE COMEDOWN

The FDA's crackdown on psychedelic research in the early 1960s was not uncontroversial. Senator Robert Kennedy (D – NY) launched an inquiry into the FDA's decisions in spring of 1966 (NIH 1966). "We have lost sight of the fact that [LSD] can be very, very helpful in our society if used properly," he argued. Kennedy was speaking from experience: his own wife had reported great benefits from LSD therapy (Lee and Shlain 1985, 93). Ultimately, the Senate Subcommittee on Juvenile Delinquency called a series of Senate hearings to discuss the problem of recreational psychedelic use.

Among those who testified against criminalizing psychedelics were Beat poet Allen Ginsberg, Tim Leary, and Dr. Stanley Yolles, the former director of the National Institute of Mental Health (NIMH). Leary and Ginsberg were restrained, seeking a compromise between the extremes of total criminalization and unrestricted access (Lee and Shlain 1985, 150-153 ; Walsh 1966, 1729). "The commercial activities involving manufacture, sale and distribution of these substances definitely should be controlled," conceded Leary, but "LSD is not a dangerous drug" (McNeill 1966). Dr. Yolles agreed that criminalization was unwise, observing that "the short-term effects of [psychedelic] treatment are sufficiently interesting to warrant continued support" (the role of Dr. Yolles and other medical experts in the criminalization process will be discussed at length in later sections) (NIH 1966, 22-33). Nevertheless, although the federal government held off, in May 1966, California formally banned the possession of LSD (Desert Sun 1966).

If anything, prohibition in California only made LSD more popular. In January of 1967, members of the San Francisco counterculture hosted the first "Human Be-In"—a massive gathering of hippies and psychedelic acolytes, with Tim Leary as the headline speaker. The resounding success of the event precipitated a frenzy of media attention (Lee and Shlain 1985, 162). Of course, the more the newspapers condemned the counterculture, the more attractive it seemed to rebellious youth nationwide. Young men and women, seeking kicks, escape, or enlightenment, began to descend on the Bay Area. By summertime, San Francisco was swarming with aspiring hippies; the Summer of Love had begun (Stevens 1987, 338-344).

However, the streets of San Francisco were dangerous for lone teenagers, and as hapless prey flooded in, the city's criminal element grew as well (Stevens 1987, 339). Many of the novice hippies also severely underestimated the intensity of the psychedelic experience. San Francisco hospitals admitted thousands of panicked youths in the midst of "bad trips" (341), This problem was exacerbated by black market sales of a long-lasting military super-hallucinogen called STP that was often disguised as LSD—even experienced psychedelic users sought medical help when what they assumed was acid still hadn't worn off after three days (Lee and Shlain 1985, 187). For older

hippies, the counterfeit drugs, naïve poseurs, rising crime rates, and police repression were too much to handle. On the one-year anniversary of LSD being banned in California—October 6, 1967—a mock funeral was held on Haight St. for the "death of the hippie," and counterculture members of all stripes began leaving the Bay Area shortly afterward (191-192).

About a year later, in 1968, possession of LSD was banned by the US federal government. In 1970, the new Controlled Substances Act classified LSD and other psychedelics as Schedule I, signifying that they had no medical potential and the highest possible potential for abuse (Lee and Shlain 1985, 93). The next year, through the UN Convention on Psychotropic Substances, psychedelics were placed in the strictest category, above cocaine and alongside heroin (Bayer 1989, 23). From 1970 to the 2000s, the blanket bans on psychedelic possession made it nearly impossible for legitimate researchers to study the drugs—in the US, the FDA rejected most research applications without explanation (Richert 2019, 90-91). Although there has been a recent revival of interest in the medical possibilities of psychedelics (see "Conclusion and Discussion"), they remain Schedule I illicit drugs in the US. So now we turn to the central question: why did this occur? The following section will explore current scholarly perspectives on the issue.

4. LITERATURE REVIEW

The topic of drug criminalization has attracted significant scholarly attention from political scientists, sociologists, medical professionals, historians, and other interdisciplinary researchers. First, much has been written on the history of drugs and drug criminalization in the US. Second, there have been several investigations of psychedelic criminalization specifically.

4.1. DRUGS IN THE UNITED STATES: EXPANDING CRIMINALIZATION

The substantial body of work on American drug history and policy has laid the theoretical groundwork for the more narrowly targeted analysis in this thesis. Over the past century, American drug policy has been characterized by increasingly harsh criminalization of illicit substances, epitomized by the so-called "War on Drugs." Even in 1986, the *New York Times* recognized that the nation's relationship with drugs was cyclical: periodically, the popularization of new drugs would spark a panic, and that panic would spur heightened criminalization (Kerr 1986). This cycle has ensured that, in the long run, the intensity of drug criminalization is continually ratcheted upward.

In *Policing the Globe,* Andreas and Nadelmann compellingly argue that this pattern began in the early 20th century (2006, 40-41). In the 1800s, drug use was relatively widespread and accepted in the US—Brecher et al. (1972) note that use of opiates was considered a "vice akin to dancing, smoking, theater-going, gambling, or sexual promiscuity," but was not cause for imprisonment. Cocaine was similarly accepted, and used in a wide variety of consumer goods, most famously in the original formulation of Coca Cola (Andreas and Nadelmann 2006, 40). However, Andreas and Nadelmann argue that an increasing recognition of the dangers of these drugs, combined with substantial efforts by Protestant "moral entrepreneurs," caused the US to begin criminalizing recreational substances in the early 1900s (40-41).

In Morgan's (1981) *Drugs in America*, this shift is explored in greater detail. Above all, Morgan blames the prevalence of opium use in the late 19th century. He argues that the addictive and sedative effects of opium contributed to public perceptions of drug users as intrinsically lazy and enslaved to their substance of choice (50, 60-63). Combined with racialized stereotypes of cocaine users, says Morgan, this fed a narrative that drug use was antithetical to social progress and ought to be criminalized (60, 94, 101). By the 1930s, this criminalization had begun in earnest, led by anti-drug fanatics such as Narcotics Division head Harry Anslinger (120-121). Public support for criminalization was based on the common belief that all illicit drugs were functionally equivalent—after 1914, any new drug had to "prove itself by the company it kept" (138, 143). Anslinger took great advantage of this belief, successfully convincing the public in the late 1930s that cannabis, like opiates or cocaine, was highly addictive and dangerous, although there was no scientific evidence to suggest this was the case (Anslinger 1937; Goode and Ben-Yehuda 2009, 198-202). In the following years, concerns about growing rates of heroin use, as well as persistent fear-mongering by Anslinger and his contemporaries, led to a series of "tough-on-drugs" policies, including the 1951 Boggs Act and 1956 Narcotic Control Act (Morgan 1981, 145-148).

The zeal of American moral crusaders extended far beyond the US's borders. From 1909 on, say Andreas and Nadelmann, the US has prosecuted an international campaign of "exceptional scale and scope . . . drafting and lobbying for increasingly far-reaching antidrug conventions, designed first to restrict and then to criminalize most aspects of drug trafficking both internationally and in the domestic legislation of all [UN] member countries" (2006, 43). The culmination of these efforts was the 1961 UN Single Convention on Narcotic Drugs, which was largely modelled after US federal law and driven by US efforts (Andreas and Nadelmann, 43; Crick 2012, 408). Emily Crick argues that this convention marked a crucial turning point, legitimizing the representation of drug use as a national security issue and codifying the global prohibition regime (2012, 407). Sophie O'Manique concurs, noting that the US's focus on drug policy in the international sphere reflects a belief that "drug trafficking . . . poses a threat to international security and human rights. In the discourse, drug traffickers become equated with terrorists" (2014, 49).

The shift to a security framework evidently accelerated the expansion of the US drug criminalization regime. In the 1960s, in parallel with the psychedelic scare, public concern mounted over use of amphetamines, barbiturates, and cannabis by non-white Americans (Morgan 1981, 158-161). This culminated in the election of Richard Nixon, who called drug abuse "public enemy number 1" and dramatically intensified federal drug enforcement (Nixon 1971, Lee and Shlain 1985, 221). For Nixon, the issue was personal. He "felt a reflexive distaste for illegal drugs and the people who used them," and fretted that cannabis and psychedelics were "turning a generation of Americans into long-haired, love-beaded, guru-worshipping peaceniks" (Massing 1998, 97). The cycle repeated in the early 1980s when soon-to-be President Ronald Reagan instigated another panic over drug use for electoral advantage, then dramatically escalated the "War on Drugs" while in office (Hawdon 2001, 420-422, 427-429 ; Morone 2003, 467).

The War on Drugs has achieved shockingly little success curbing drug use in the US—or in any other nation that has adopted harsh criminalization policies (The Economist 2018; Shultz and

Aspe 2017). Degenhardt et al. (2008, 1065) observe that "countries with more stringent policies towards illegal drug use did not have lower levels of such drug use." In fact, the US has the highest levels of all. Massing estimates suggest that, by investing in treatment rather than law enforcement, the US could have achieved far better results at a fraction of the cost. "Every study of drug treatment has arrived at the same conclusion: . . . impressive reductions in both drug consumption and criminal activity, at a relatively low cost" (1998, 51). This is not a new concept—in 1975, a government task force produced an in-depth report critiquing American supply side drug policy and recommending a shift to a treatment-first paradigm. The Ford administration flatly ignored these results, however, opting instead to ratchet up paramilitary operations against opium growers in Mexico (Massing 1998, 135). With the notable exception of cannabis legalization in many states, the US's drug criminalization regime has continued unabated to the present day (see "Conclusion and Discussion").

No discussion of drugs in the US can be complete without addressing race, which has been entwined with drug rhetoric from the beginning. As early as the turn of the 20th century, the news was pervaded by sensationalized tales of opium-smoking Chinese immigrants seducing white women and Black cocaine users going on furious rampages (Goode 2008, 536 ; Morone 2003, 464-466). Then, in the 1930s, Harry Anslinger's anti-cannabis campaign heavily leveraged public fears of Mexican immigrants (Goode and Ben-Yehuda 2009, 200-202; Halperin 2018). He lamented over "what a small marihuana cigarette can do to one of our degenerate Spanish-speaking residents . . . most of who are low mentally" (Anslinger 1937). The racialization of the drug problem, and the resultant harm to communities of color, has only increased in the decades since. Kevin Gray argues compellingly that today, "for white America, the drug problem has a black face" (1998, 166). Particularly in federal courts, he notes, non-white defendants are convicted of drug crimes at massively disproportionate rates (168). Once incarcerated, these individuals are forced to labor for meager wages, providing immense profits for the stakeholders of the prison-industrial complex (196). To fully examine the racial history of drugs in the US would require an entire additional thesis—suffice it to say, the relationship between drug criminalization and racism features heavily in the literature base and is crucial to a complete understanding of drug policy.

4.2. PSYCHEDELIC CRIMINALIZATION: THE MORAL PANIC HYPOTHESIS

Up until now, this section has explored the literature on American drug policy in general. It will now turn to the literature on psychedelic criminalization specifically, which is somewhat sparse, and almost invariably centers on the theory of "moral panics." The theory of moral panic was first articulated in 1972 by Stanley Cohen in his seminal work *Folk Devils and Moral Panics*. He defines a moral panic as an abrupt explosion of public fear regarding a perceived "threat to societal values and interests" (9). This threat is nearly always blamed on a particular agent or group of agents, the "folk devils: visible reminders of what not to be" (10). Cohen devotes substantial attention to the role of the media—the media, he argues, play a dominant role in setting a nation's moral agenda (16-17). Yet the media are incentivized to exaggerate and distort

reality to conform to their viewers' preconceptions and generate "newsworthy" reporting—moral panics, says Cohen, begin with deliberate "news manufacturing" (44, 46-48).

In a 1994 article, Goode and Ben-Yehuda add further clarity to moral panic theory. They outline a set of specific criteria that can be used to determine whether an incident constitutes a moral panic. These include: public concern about a certain behavior; hostility towards those who practice the behavior; consensus among a significant portion of the population that a threat exists; disproportionality between the actual scale of the problem and the public response; and volatility, meaning the panic emerges suddenly and fades quickly (156-159).

Debate about psychedelic criminalization has largely centered on moral panic theory. Goode and Ben-Yehuda point to LSD criminalization in the late 1960s as the result of an "unprecedented" moral panic (2009, 202). They cite sensationalist media accounts, which exaggerated and fabricated dangers of LSD use and demonized its proponents. "The media seized upon and reported the very small number of untoward LSD-related episodes . . . in the context of the 1960s, LSD 'freak-outs' were news; stories that LSD does not cause psychotic outbreaks were *not* news" (203). Goode and Ben-Yehuda believe, like Cohen, that the media's self-interested cherry-picking of sensational information plays a crucial role in generating moral panics. "The media hysteria," they conclude, "brought forth criminal legislation that penalized the possession and sale of LSD" (205).

Media portrayals of psychedelics were later explored in much greater detail in Stephen Siff's 2015 book, *Acid Hype*. Siff largely agrees with the moral panic interpretation but adds nuance to the discussion. He argues that even prior to the 1960s, media representations of psychedelics were out of touch with reality. In the 1950s, the media were quick to heap unearned praise on psychedelics, portraying them as potential wonder-drugs (Hyams 1959; Siff 2015, 61). But in the mid-1960s, when public concerns about the dangers of psychedelics were growing, media outlets capitalized on the fear by publishing unsubstantiated negative reports about the substances (Siff 2015, 151). This instigated a feedback loop of bad press and negative public response, culminating in the late 1960s' moral panic (177).

Another variant on the moral panic hypothesis was proposed by Miranda DiPaolo in 2018. DiPaolo takes the moral panic hypothesis as a starting point but argues that the panic did not emerge organically, or as the simple result of media sensationalism. Rather, she claims, criminalization of LSD was a purposeful government effort to persecute the hippie counterculture of the 1960s. She points to the extensive history of aggressive police action against the hippie community (discussed in greater detail by Barry Miles in his 2003 book *Hippie*). The hippies were seen as a threat to the "national character," argues DiPaolo, and their association with psychedelic drugs was a convenient avenue through which to cement their public image as deviant and criminal. This argument will be considered at greater length in the next section.

In 2002, Cornwell and Linders published a direct rebuttal to the moral panic hypothesis, singling out Goode and Ben-Yehuda's study in particular. Cornwell and Linders's primary objective in their essay is to discredit moral panic theory as a whole, claiming that "the moral

panic concept serves as an analytical distraction of sorts rather than a useful conceptual tool" (314). But in in the process, they develop an alternative account of LSD prohibition. They argue that despite the media hysteria, criminalization of LSD was a slow process, characterized by cooperation and deliberation—not typically associated with a "panic" (308). Cohen's entire theory of moral panic, say Cornwell and Linders, is based on the inaccurate assumption that people respond selfishly and irrationally in crisis situations like natural disasters. In fact, Cornwell and Linders claim, this sort of breakdown in social relations rarely occurs. In crises, natural or moral, people tend to cooperate and respond in an organized fashion (311-313). Cornwell and Linders also argue that moral panic theory reduces the public to gullible, passive media-consumers, and reduces the "folk devils" to mere objects of demonization. Cornwell and Linders contend that both the public and the "folk devils" play more active roles in the public conversation. Tim Leary, for example, was undoubtedly demonized by the government and media, but also was highly influential in shaping the public's views of psychedelics (323-325).

Goode wrote a piece in 2008 to defend his argument against Cornwell and Linders's attack. Moral panics, Goode says, are a frequent occurrence, particularly surrounding drugs. He argues that Cornwell and Linders misunderstand moral panic theory. A moral panic is clearly not identical to the literal panics that occur in disaster situations, such as fires; Cohen's disaster analogy was meant to be somewhat loose. Goode then provides extensive evidence that the media and public response to LSD in the 1960s was disproportionate to the actual threat the drug posed—the main indicator of a moral panic. This evidence includes the spate of factually untrue reports of psychedelic-related calamities and the prevalence of hyperbolic, moralizing rhetoric like "scourge," "epidemic," "crazed," and "cult" in 1960s reports on psychedelics by the media (538-540, 542).

Up to this point, this section has presented the views of various authors without commentary. However, the debate between Cornwell and Linders and Goode requires some clarification. Nowhere else in the literature base is the question of psychedelic criminalization debated so explicitly and thoroughly. However, the debate is muddied on both sides by substantial mischaracterization of the opposition. Cornwell and Linders, for their part, are far too focused on Cohen's disaster analogy, which Goode accurately observes is by no means essential to moral panic theory (Goode 2008, 540-541). Additionally, contrary to Cornwell and Linders's characterization, Cohen quite clearly explains that in the aftermath of a disaster or a moral panic, social relations do *not* break down, and in fact play a major role in determining the response (1972, 22-24).

Goode's response, meanwhile, completely misses the thrust of Cornwell and Linders's essay and responds to a straw man argument instead. Cornwell and Linders agree with him that the media and public response to psychedelics in the 1960s was disproportionate (2002, 319-320). Their point of contention is largely semantic; they use the example of LSD criminalization to illustrate that the process of deviance construction is slow, deliberative, and cooperative, and therefore should not be called a "panic" (308). Goode's response does not substantially address these points, but instead focuses on reasserting the disproportionality of the response to psychedelics, which Cornwell and Linders had never disputed (Goode 2008, 538-540).

Ultimately, both sides agree on most substantive points: there was a media-driven surge in negative public response to psychedelics in the 1960s, disproportionate to actual harms, which led the US to criminalize them after a period of deliberation.

In the following section, the moral panic hypothesis will be examined and evaluated against the historical facts. Layers of analysis will also be added to explain gaps in current theories. Conspicuously absent from prior works is an explanation of how the moral panic in the US, if it occurred, relates to the 1971 global prohibition of psychedelics by the UN. Also absent is a clear summary of the scientific evidence available at the time of criminalization—this is key to determine whether the public response was actually disproportionate, given the information available.

5. DID A MORAL PANIC CAUSE PSYCHEDELIC CRIMINALIZATION?

As explained in the literature review section, the criminalization of psychedelics has almost always been blamed on a moral panic. But does this theory hold up under scrutiny? There are two key questions: first, was there a moral panic in the US about psychedelics in the 1960s? There is abundant evidence to suggest there was. The public response was disproportionate to the problem, and made "folk devils" out of psychedelic researchers (e.g. Tim Leary) and users. Second, was this moral panic the cause of psychedelic criminalization? That is, would psychedelics have remained legal if the moral panic had not occurred when it did? This question is harder, but a careful review of the evidence suggests that the moral panic was, at most, a proximate cause of psychedelic criminalization. The US government and the UN were already beginning to contemplate criminalization before the moral panic began. Although the panic may have added urgency to these efforts, it is likely that psychedelics would have been criminalized regardless.

5.1. WAS THERE A MORAL PANIC?

If there were in fact a moral panic about psychedelics in the 1960s, what clues would be expected? Recall from the Literature Review that one of the primary indicators of moral panic is a sudden surge in public attention paid to a problem, disproportionate to its real scale. Also recall that moral panics generally entail the media portrayal of certain individuals or groups associated with the problem as "folk devils:" scapegoats for public rage and fear. Both of these factors were evident in the 1960s public response to psychedelics.

5.1.1. DISPROPORTIONATE REACTION

To establish that public attention was disproportionate to the actual scale of the psychedelic problem, it is necessary to evaluate what was known to science at the time. If the evidence legitimately seemed to suggest that psychedelics were highly dangerous, then the reaction may not have been disproportionate to the apparent threat. However, this was not the case. A massive meta-analysis by esteemed LSD researcher Sidney Cohen, analyzing over 25,000 therapy sessions, reported in 1960 that "untoward events occurring in connection with the experimental or therapeutic use of the hallucinogens have been surprisingly infrequent . . . no instance of

serious, prolonged physical side effects was found" (Cohen 1960, 30). He concludes that "with proper precautions [psychedelics] are safe" (39). No analysis emerged in the 1960s to challenge Cohen's reults (Stevens 1987, 181).

Not only were psychedelics known to be safe, but most published evidence suggested that they had immense medical potential. In a 1957 experiment, LSD therapy was administered to fifty institutionalized patients with treatment-resistant neuroticism. Of those patients, forty-five reported significant improvement, and thirty-six were still improved two years after the LSD session (Martin 1957). A 1965 assessment of the research-to-date on psychedelic therapy found that "LSD has been found to facilitate improvement in patients covering the complete spectrum of neurotic, psychosomatic, and character disorders" (Mogar 1965, 157). Many psychiatrists were dubious of such results, as will be discussed in the next section. However, based on actual, published studies, an objective observer in the mid-1960s would conclude that psychedelics were a safe and valuable tool in the psychiatric toolbox.

However, an observer who based their opinions on newspapers and magazines would come to a very different conclusion. Stanley Cohen and other moral panic theorists (see "Literature Review") emphasize the media's tendency to blow threats out of proportion (Cohen 1972, 32-33). Indeed, after the 1966 Senate hearings brought psychedelics into the public eye, the news media produced a non-stop barrage of horror stories. These ranged from garden-variety freakouts, to teens blinding themselves by staring at the sun under the influence, to LSD-crazed murderers, to vague and overblown claims about the dangers of psychedelics ("more dangerous than heroin!") (Siff 2015, 151-155). There are several clues that these stories were exaggerated, if not outright fabricated. For one thing, even as newspapers were flooded with such accounts, psychedelic-related hospital visits and arrests remained uncommon (Stevens 1987, 275-276). Another strong hint is provided by the Netherlands today, where hundreds of thousands of doses of psilocybin are legally sold every year; Dutch authorities report that psychedelic-related accidents and disturbances are "extremely rare" (Huber n.d.).

Nevertheless, searching for "LSD" in the archives of the *New York Times* and *Los Angeles Times* reveals dozens of sensational headlines from the late 1960s, including "Damage to Mind from LSD Feared," "Slaying Suspect Tells of LSD Spree," "LSD Victim Felt He Was Devil Stealing Souls," "LSD Linked to Dead Youth," "Victim of LSD Starts Long Return Trip," and merely "Beware of LSD!" (NYT 1963; NYT 1966; Dreyfuss 1967; NYT 1971; Torgerson 1967; Winkler 1960). Psychedelics were "the nation's newest scourge," and users' minds were "disintegrating under the influence of even single doses" (Laurence 1963). *Life* magazine led the attack with a 1966 cover story about LSD: "The Exploding Threat of the Mind Drug That Got Out of Control" (Life 1966).

In addition to the usual spate of uncorroborated horror stories, the authors of the *Life* special fret that psychedelics can "can convince those with criminal propensities that they are above the law" (Life 1966). This provocative claim is quite consistent with moral panic theory. In their 2009 work on moral panics, Goode and Ben-Yehuda observe a pattern: "new drugs are usually . . . attributed with a criminogenic effect – that is, many more people than is normally the case believe

that they cause violence and crime" (2009, 198). Vatz and Weinberg examine this misperception extensively, noting that in fact, "drug-related crime is obviously more closely tied to . . . the criminal black market than to the chemical effects of the drugs. . . it is largely their illegality that makes them dangerous" (1998, 61-78). Of course, that is not to say that drugs cannot be conducive to criminal behavior. Michael Massing notes that, although many drug-related crimes are attributable to prohibition, some are indeed caused by the drugs themselves. For example, stimulants like cocaine may loosen users' inhibitions and promote violent behavior, and addictive drugs may drive their users to theft to fuel their habit.

However, in the case of psychedelics, the criminogenic effect was illusory. Contemporary research suggests that psychedelic use is associated with less criminal behavior, not more (Hendricks 2014; Hendricks 2017). In the context of moral panic theory, the conflation of psychedelic use with crime is an excellent example of what Cohen (1972) calls "spurious attribution." During a moral panic, a deviant group (e.g. drug users) is assumed, without evidence, to be deviant in a host of other ways (53-54). This aids their transformation into living stereotypes, symbols of public fear— "folk devils" (44).

5.1.2. THE HIPPIES AS FOLK DEVILS

The "folk devil" phenomenon can be seen quite clearly in the way mainstream America reacted to the "hippie" counterculture. Miranda DiPaolo (2018) argues convincingly that the moral panic of the 1960s, while ostensibly focused on psychedelic drugs, likely had much to do with their users: "young adults who fervently promoted views of unconventionality, sexual liberation, and constructive dissent." DiPaolo takes the argument a bit too far—there is no evidence to suggest that psychedelics were banned as a purposeful attempt to persecute the hippie population, as she claims (see "Literature Review"). Indeed, the FDA crackdown on psychedelic research largely predated the hippie movement. However, the hippies' role in the 1960s moral panic cannot be overstated.

The hippie movement achieved mass notoriety in the aftermath of the First Human Be-In in 1967 (see "Historical Background") (Lee and Shlain 1985, 163-164). There were many reasons the hippies were frightening to "respectable" mainstream American society. Perhaps the most obvious was their commitment to "sexual liberation," which conservative Christians saw as nothing less than an all-out assault on American moral values (Miles 2005, 273-274). Hippies also ruffled feathers with their opposition to the Vietnam War and their association with the left wing and the peace movement (Lee and Shlain 1985, 194). This association may not have been entirely fair to the leftists and peace activists—many of them were scornful of hippies, whom they saw as naïve and apathetic (Miles 2005, 10). Hippies, for their part, often considered political activism just another form of selling out to "the Establishment" (Lee and Shlain 1985, 165-167). However, there was substantial overlap between the two groups. The Youth International Party ("Yippies") was a substantial force in late 1960s peace activism but was also composed of die-hard hippies, whose primary political aims were free love and "acid for all!" (206, 215)

Per Cohen, moral panics often lead to extreme, preemptive policing of the "folk devils" (1972, 86-87). In this case, public fear about the hippie movement translated into hyperaggressive police action against their events and communities. Writing in 1969, Brown argues that hippies in San Francisco faced not merely criminal law enforcement, but a form of "social control as terror." By this, he refers to unlawful raids on hippie residences, insulting billboards, and unjust arrests. Worst of all were the "street sweeps" in hippie gathering areas: "club-wielding policemen . . . closed exits from the assaulted area and then began systematically to beat and arrest those who were trapped" (Brown 1969). Arrests were generally based on vague or trumped-up charges; anyone without a draft card on their person could easily be detained as a "suspected draft dodger," for example (Miles 2005, 211).

Ironically, it was the hippies who protested against violence that faced the most of it. In October 1967, peace activists staged a mass protest at the Lincoln Memorial, famously stuffing soldiers' rifle barrels with daisies. Of course, flower power did not protect them from being savagely beaten and arrested (Lee and Shlain 1985, 202-204). Yippies protesting in Chicago a year later were attacked not only by the local police, but the National Guard and the Army as well (219). The brutality and overkill of Chicago's response was infuriating to leftists, but most Americans approved (221). In fairness, the Yippies were partially responsible for their negative image, with their radical stunts and inflammatory threats to put LSD in the water supply, seduce politicians' wives, and "burn Chicago to the ground" (215). They were so successful at terrifying mainstream America that even massively disproportionate response seemed justified—the hallmark of a moral panic.

5.1.3. WEAPONIZING THE LAW

The federal government was quite conscious of the ties between the hippie movement and psychedelic drugs. A 1967 FDA report on LSD asserts that "for many of the 'hippy' groups . . . [LSD] provides an easy and automatic means to membership . . . allegiance to drug values is regarded as a 'loyalty test'" (Smith 1967, 14). Once psychedelics were illegal, politicians had a convenient excuse to ramp up law enforcement harassment of hippies. Cannabis laws had already been used extensively to criminalize hippie communities, even while "respectable" middle-class white Americans could smoke pot with relative impunity (Morgan 1981, 158, 161). In the late 1960s, and early 1970s, the federal government made extensive use of drug laws, particularly the new psychedelic ban, to target hippies, anti-war protestors, and other leftists.

This was not so much *1984*-style totalitarianism as the fulfillment of a campaign promise. Nixon had ridden into office on the tide of moral panic. After the 1968 Chicago protests, he was able to capitalize on public fear via a "law and order" campaign, promising to eradicate the "hippie freaks" (Lee and Shlain 1985, 221). Under his administration, the CIA expanded its domestic spying operation, as well as its practice of harassing and poisoning leftist organizers (225). Nixon's crackdown on hippies was heavily entwined with his crackdown on drugs (see "Literature Review"). In a top-secret internal memo, Nixon's FBI Chief Edgar Hoover advised his agents, "since the use of . . . narcotics is widespread among members of the New Left, you should be on the alert for opportunities to have them arrested on drug charges" (Lee and Shlain 1985, 225).

Evidently, such opportunities were plentiful; in the early 1970s, myriad anti-war organizers and counterculture figures (including Tim Leary himself) were served draconian sentences for possessing small quantities of psychedelics or cannabis (225-226).

By the time the crackdown started, however, the moral panic over psychedelics was effectively over (Siff 2015, 185). The media had turned to fear-mongering over other drugs, with encouragement from Nixon's PR team (182). This illustrates another of the key characteristics of a moral panic, as explained by Goode and Ben-Yehuda (1994): volatility. Even if it leaves a long-lasting institutional legacy, the panic itself is quick to emerge and quick to die out (158-159). From the initial media firestorm after the 1966 Senate hearings, until public attention shifted to other drugs after Nixon's election, the moral panic over psychedelics lasted a mere three years.

5.2. DID THE MORAL PANIC CAUSE CRIMINALIZATION?

Having determined that there was indeed a moral panic in the late 1960s about psychedelics, it is now necessary to evaluate whether it was the main cause of psychedelic criminalization. If it were, what historical evidence should be expected? First, the government would be relatively uninterested in the problem until the moral panic began—obviously, if the government was already planning to ban psychedelics before the panic, then the panic did not cause the ban. Second, there would be a relatively rapid government reaction, without measured evaluation of the available evidence, as is typical of legislation designed to address moral panics. Third, if the moral panic caused international criminalization, criminalization of psychedelics would probably occur first in the US, and the international community would follow suit. If many other countries independently chose to criminalize psychedelics, it is unlikely that the US moral panic was the primary cause. The evidence does not seem to bear out any of these criteria, implying that the criminalization of psychedelics was not exclusively the result of the 1960s moral panic.

5.2.1. DID MORAL PANIC PRECEDE GOVERNMENT ACTION?

The first criterion is easily disproven, as the government had been moving in the direction of criminalization for years when the moral panic erupted. Most scholars place the beginning of the panic in mid-1966 (Siff 2015, 151; Stevens 1987, 273-274). As explained in the previous subsection, this was after the spring Senate hearings discussing LSD criminalization. The government had already begun to seriously consider criminalizing psychedelics by the time that the media seized on the issue.

That is not to say that psychedelics received no press before the Senate hearings, but the coverage was more balanced. A legal scholar writing in 1966 noted that, ever since the Harvard Psilocybin Project was shut down in 1963, "an alarmist press fanned . . . artificially created hysteria" (Rosborough 1966, 313). Although this may be true, there were also many positive reports, perhaps equally exaggerated, such as a 1964 article in *Horizon* magazine, "Can This Drug Enlarge Man's Mind?" (Siff 2015, 139-141) Stephen Siff writes that "LSD was on the media agenda in the early 1960s, but as a cultural and scientific phenomenon rather than a political problem that called for a government response" (141) Additionally, prior to the Senate hearings, the general

public was relatively unworried about psychedelics. A 1964 Gallup poll asked Americans to name the nation's most pressing problems, and only 2% brought up drugs (142). Although the media was beginning to take a stronger interest in psychedelics, most Americans did not consider them a major concern until the mid-1960s.

This strongly suggests that the moral panic had not begun in earnest until the Senate was already contemplating criminalization. Moreover, it was years after the FDA began to crack down on psychedelic research in 1962, and again in 1965 (see "Historical Background"). Admittedly, it is quite possible that the moral panic accelerated the decision to criminalize psychedelic drugs. Considering the timeline, however, one is inclined to agree with Siff, who argues that "quite likely, state and federal officials would have acted the same way against LSD even had it not been discussed so frequently and at such length in the news" (2015, 177).

5.2.2. WAS THE CRIMINALIZATION PROCESS "PANICKED"?

The second criterion also does not hold up under scrutiny. Cohen observes that when moral panics result in legislative changes, the changes are usually enacted quickly, framed as "emergency" measures, and primarily inspired by public outcry rather than genuine consideration of the issue (1972, 133-138). Cornwell and Linders (2002) argue, rightly so, that the process of psychedelic criminalization was far more measured and deliberate than would be expected if legislators had been caught up in a moral panic (see "Literature Review").

At the 1966 Senate Hearings, although the debate was heated, the Senators spent substantial time hearing from independent medical experts, and even the most vocal proponents of psychedelics, such as Tim Leary and Allen Ginsberg (NIH 1966). A contemporaneous observer notes that "the not unfriendly confrontation" between Ginsberg and the Senators "reflected a congressional attempt to understand the new problems about which it is legislating" (Walsh 1966, 1729). Additionally, at least some of the Senators seemed well-aware of the media's propensity to exaggerate. Senator Kennedy noted that LSD is "not as widely used amongst our university students and amongst the rest of our population as has sometimes been reported" (NIH 1966, 47). Senator Abraham Ribicoff (D – CT) encouraged his colleagues "to strike a balance and not to throw overboard those elements of a drug that may be good because there are certain elements that are bad" (65). Clearly, the Senators were not blindly following the media narrative of the late 1960s.

5.2.3. DID THE U.S. SPEARHEAD INTERNATIONAL CRIMINALIZATION?

The final criterion relates to the international community's condemnation of psychedelics in the 1960s. If a moral panic, instigated by the American news media, was the primary cause, then one would expect the US to have led the charge to criminalize psychedelics worldwide. It would not be the first time a moral panic in the US translated into international law. The US was the dominant architect of the 1961 Convention on Narcotic Drugs and has been a key player in constructing the global drug prohibition regime (see "Literature Review") (O'Manique 2014, 36-38).

However, in the case of psychedelics, the US did not play such a role. The UN and W.H.O. had been debating psychedelics since 1963, well before the moral panic in the US began (Bayer 1989, 5). In August 1966, a Special Committee was convened to discuss the issue, and they singled out LSD "as presenting the most acute problem and showing signs of such spread as to demand immediate action" (7). Certainly, the decision to create the Special Committee was related to the sudden flood of negative press from the American media. However, there is no reason to believe that the Committee's official decisions were based on magazine articles. Unlike Congress, the Committee was not accountable to the American public, and so would have seen no need to assuage their fears with unnecessary policies.

By January 1968, the UN's Commission on Narcotic Drugs had unanimously agreed that the strictest possible controls should be imposed on psychedelics. Some nations, including the USSR, India, and Ghana, called to ban psychedelics immediately through amendment of the 1961 Convention. However, most countries opposed such a rapid move, the US included. Instead, the next several years were spent developing the new Convention on Psychotropic Substances, which regulated psychedelics as well as prescription stimulants and sedatives. (Bayer 1989, 8-9)

When the Convention passed in 1971, Psychedelics were placed in Schedule I, the strictest category. This aligned with the advice of the W.H.O., who reported that psychedelics posed "an especially serious risk to public health and . . . they have very limited, if any, therapeutic usefulness" (Bayer 1989, 15). The US was one of the only nations to challenge this move, as it objected to international control of mescaline cacti (23). This history makes it clear that, if anything, the US dragged its feet on the inclusion of psychedelics into the global drug prohibition regime. Multiple times, in 1968, and then again in 1971, the US explicitly opposed the wishes of anti-psychedelic hardliners in other nations. If an American moral panic were the root cause of global psychedelic criminalization, one would expect the opposite.

Certainly, there was a moral panic in the US about psychedelics, as all the classic signs (disproportionate response, media hysteria, and hyper-criminalized folk devils) are present. However, the moral panic hypothesis cannot convincingly explain criminalization in the US or abroad, for three key reasons. First, the US government was already preparing to ban psychedelics before the moral panic began. Second, the process of criminalization was too slow and deliberative to be the result of moral panic. Finally, rather than leading the international community to ban psychedelics, the US took a relatively moderate position in UN deliberations. Explaining why other countries were even more vehemently opposed to psychedelics than the US is largely beyond the scope of this thesis (see "Methods: Selection Bias and Generalizability"). However, the next section will develop an alternative theory to explain why psychedelics were criminalized in the US. It is possible that this theory applies to other nations as well.

6. AN ALTERNATIVE THEORY OF CRIMINALIZATION

Having examined the moral panic hypothesis and found it insufficient to explain the criminalization of psychedelics, this thesis will conclude with an alternative theory. This theory, like the moral panic hypothesis, is constructionist, positing that psychedelic use was deviantized

due to socially constructed notions of morality, rather than objective risks. As previously discussed, there was a preexisting moral aversion to drug use in the American cultural consciousness, dating back to Prohibition-era moral crusaders (see "Literature Review: Expanding Criminalization"). In this moral framework, objective risk is less important than medical potential for determining a drug's legal status. By the early 1960s, the mainstream psychiatric community had concluded that psychedelics were not suitable for medical use. Viewed through the anti-drug moral lens, lawmakers saw this alone as sufficient reason to criminalize them.

6.1. THE DISENCHANMENT OF THE PSYCHIATRIC COMMUNITY

Based on the published evidence available in the early 1960s, psychedelics appeared to be quite safe and medically promising (see "Was There a Moral Panic?"). Yet, at the time, most psychiatrists were unconvinced by the body of medical research. In the early to mid-1960s, the psychiatric community came to largely reject psychedelics as a potential treatment. This was in part due to legitimate concerns about their safety, spurred by the early association of the drugs with military and intelligence operations, anecdotal reports of adverse reactions, and fears of genetic damage. It also reflects the professional biases of many psychiatrists, for whom altered states of consciousness were associated with mental illness and dysfunction rather than healing.

6.1.1. SAFETY CONCERNS

The primary reason that medical professionals turned against psychedelics was the perception that they were dangerous. At the 1966 Senate hearings, former director of the NIMH Dr. Yolles remarked that using them was like "playing chemical Russian roulette" (NIH 1966, 38). Although it was hard to deny that psychedelics were remarkably non-toxic, other concerns were not so easily dismissed. Chief among them was the notion that, as Dr. Keith Ditman argued at the 1967 NIMH Conference, psychedelics were "*psychologically* toxic" (Meyer 1967, 27). The theory that psychedelics often trigger psychosis, although largely incorrect, gained traction as recreational users began showing up in emergency rooms in the early 1960s. These fears were compounded by research in the late 1960s which seemed to link LSD to genetic damage.

Psychedelics were, to some extent, set up for failure by their early association with the military and CIA. Through their experiments, the CIA concluded that LSD was "extremely dangerous," as it induced psychosis and terror (Lee and Shlain 1985, 85). They pushed this narrative relentlessly on the psychiatric community, including at the first international conference on psychedelics in 1959, which was chaired by a CIA and Army consultant, Dr. Paul Hoch (68-70). It is not surprising that the CIA and Army observed high rates of adverse psychological reactions. The effects of psychedelics, unlike most drugs, are highly dependent on the environment, mindset, and expectations of the user (Bunce 1979; Lee and Shlain 1985, 200). Taking a psychedelic drug, say Lee and Shlain, "reinforces and magnifies whatever is already in [the user's] head" (1985, 231). This is why hippies—influenced by Huxley's *Doors of Perception*, Tim Leary's mysticism, and other glowing reports—tended to have positive, enlightening experiences with the drugs (Becker 1967). By contrast, non-consenting CIA test subjects, who underwent brutal interrogation

methods and were told they were going insane, predictably experienced panic and temporary psychosis (see "Historical Background: Psychochemical Warfare") (Lee and Shlain 1985, 69-70).

The CIA's initial reports of psychedelic-induced psychosis were seemingly corroborated in the early 1960s, as emergency rooms saw an influx of panicked, apparently psychotic patients under the influence of psychedelics (Pollan 2018, 209). By 1967, a doctor from Bellevue Hospital in New York reported admitting about two patients per week "for whom we feel that the LSD experience played, at the very least, a precipitating role in the admission" (Meyer 1967, 21). Of course, it had already been established by Cohen in 1960 that true psychotic reactions to psychedelics are very rare (35-36). But to many practicing doctors, it appeared that psychedelics were triggering psychotic breaks left and right. How can the disconnect between the objective research and medical professionals' anecdotal experience be explained?

Some of these emergency room cases may have been legitimate psychotic reactions; it is still not clear whether psychedelics can actually cause psychosis. However, current research suggests they do not—a recent study of 130,000 US adults "failed to find evidence that psychedelic use is an independent risk factor for mental health problems" (Johansen and Krebs 2015). If the risk of psychedelic-induced psychosis exists at all, it is miniscule, affecting somewhere around 0.2% of users, comparable to other psychiatric medications (Cohen 1960, 35-36; Kuhn et al. 2019, 139; Stevens 1987, 173). Additionally, those users who experience psychotic reactions may have already been predisposed to psychosis, due to undiagnosed underlying conditions like schizophrenia (Anastasopoulos and Photiades 1962; Kuhn et al. 2019, 139). Most likely, the overwhelming majority of the patients admitted for supposed psychedelic-induced psychosis in the 1960s were merely having "bad trips," (see glossary) and experienced no lasting negative effects once the drug wore off (Pollan 2018, 209-210).

The psychiatric community's concerns about psychedelic-induced psychosis may have stemmed in part from the post-hoc fallacy—the tendency to assume that, because event Y followed event X, X caused Y. Psychedelics were exciting and new, and the psychedelic experience was intense, so users and medical professionals alike were quick to dubiously attribute any subsequent changes in the user's state to the drug. Sidney Cohen observes this effect in his landmark 1960 meta-analysis. He describes patients complaining that their sessions of LSD therapy had caused side effects ranging from migraines to influenza to paraplegia. However, "it so happened that these people were all in the control group and had received nothing but tap water" (38).

Examples of the post-hoc fallacy permeate the minutes of the 1967 NIMH conference on psychedelics. One of the more observant doctors noted that, upon examination, many ostensible acid casualties "turn out to be people with problems that have existed prior to LSD ingestion, but LSD becomes the diagnosis or the excuse" (Meyer 1967, 31). Indeed, many others at the conference were eager to draw general, causal conclusions from very limited evidence, such as case studies and anecdotes, and to overlook confounding factors. For example, one doctor referenced a patient he treated for schizophrenia, supposedly "precipitated by LSD"—never mind that the patient had already suffered from occasional psychotic episodes before ever touching psychedelics (13). Faulty inferences like this one may partially explain why so many experts

believed psychedelics often induced psychotic reactions. This belief dissuaded most respectable psychiatrists from prescribing or researching psychedelics (Pollan 2018, 209).

Concerns about the safety of psychedelic drugs were compounded in 1967, when a paper in *Science* reported that, in a test tube, exposure to LSD damaged chromosomes (Siff 2015, 155). Coming when it did, at the height of the psychedelic-related moral panic, the media quickly seized on this discovery (Blakeslee 1970). "If you take LSD even once," warned the *Saturday Evening Post*, "your children may be born malformed" (Siff 2015, 156). These conclusions were clearly overstated; for one thing, chromosome breakages do not necessarily cause birth defects, and there were no examples of LSD-damaged infants (Goode and Ben-Yehuda 2009, 204; Siff 2015, 156-157). Indeed, at the 1967 NIMH conference, where the chromosome issue was discussed extensively, several doctors observed that among Indigenous tribes and hippie communities who used psychedelics extensively, there were no more birth defects than normal (Meyer 1967, 2-4, 50). Additionally, at high concentrations in a test tube, many benign substances, such as caffeine, can also damage chromosomes. That does not mean they do so in living humans (Lee and Shlain 1985, 154-155). "For the data that we have in the *in vivo* study," said Dr. Charles Shagass at the NIMH conference, "the results suggest that not much is happening. The fact that *in vitro* and *in vivo* data are very different sometimes is borne out by this discussion" (Meyer 1967, 46-47).

Within a few years, the chromosome myth was conclusively debunked. A 1970 article in the *Journal of the American Medical Association* reported that, *in vivo*, "no difference was found in the rate of chromosomal aberrations before and after administration of LSD" (Pahnke et al. 1970, 1862). A year later, *Science* published a new meta-analysis on the subject, this time concluding that "pure LSD ingested in moderate dosages does not produce chromosome damage" (Siff 2015, 158). As an interesting aside, the US Army and CIA were already aware of this, having unsuccessfully attempted to replicate the chromosome studies. They made no effort, of course, to share these results with the scientific community (Lee and Shlain 2985, 154-155)

The media, which had so enthusiastically reported on the possibility that LSD caused genetic damage, paid little attention to the new finding that it did not (Goode and Ben-Yehuda 2009, 204; Pollan 2018, 209). "At the time," Goode explains, "LSD pathology was news; non-pathology was not" (Goode 2008, 539). Not that it mattered—by 1970, psychedelics were already criminalized. Concern over genetic damage played a significant role. In a 1967 FDA paper, broken chromosomes were one of the primary justifications for government control of LSD (Smith 1967, 13). At the precise time that criminalization was under consideration, the chromosome studies provided medical professionals and policymakers with further cause to suspect that psychedelics were dangerous.

6.1.2. PROFESSIONAL PREJUDICE, LEGAL OBSTACLES, AND UNSAVORY ASSOCIATIONS

Undoubtedly, the specters of psychosis and genetic damage gave medical professionals in the 1960s valid cause for concern about psychedelics. However, for many doctors, these concerns mainly served to confirm their preconceptions about the drugs. Psychedelics themselves, and the ways they were commonly used in therapy, were fundamentally incompatible with the paradigms

of mid-twentieth century psychiatry. Their effects were unpredictable and difficult to test, a problem significantly compounded by legal barriers established by the FDA in the early 1960s. Moreover, the few effects that were consistent—hallucinations, ego dissolution, emotional volatility—were considered symptoms of mental illness. The drugs' dubious reputation was exacerbated by their association with maverick doctors and scientists, who ranged from unconventional to downright outlandish. Consequently, despite years of evidence suggesting that psychedelics were medically useful, most experts were unconvinced.

One of the factors which made it difficult to accept the medical potential of psychedelics was their apparent unreliability. Although psychedelics were tested extensively in the 1950s, the results were frustratingly inconsistent. One study reported that when a hundred painters were dosed with LSD, all of them reported a boost to creativity. Yet, other studies claimed that LSD impaired mental functioning (Lee and Shlain 1985, 61-62). At the 1959 international conference on LSD, many participants reported success treating various mental illnesses with LSD. Others, such as the CIA-affiliated chair Dr. Paul Hoch, saw no such improvements, and observed that "no patient asks for [LSD] again" (Lee and Shlain 1985, 69). At the 1967 NIMH Conference, one doctor exasperatedly remarked, "I doubt that we would find much, if anything, that we here can all agree upon concerning the LSD situation" (Meyer 1967, 5). These discrepancies can be partially explained by the influence of setting and mindset on the experience (see previous subsection). Psychiatrists who successfully treated their patients with psychedelics, such as Dr. Humphrey Osmond, took pains to create a welcoming, relaxed environment, and made sure their patients knew what to expect before administering the drugs (Lee and Shlain 1985, 56-59).

Not only did they appear vexingly inconsistent, but it was extremely difficult to design rigorous medical experiments with psychedelics. Although many patients reported phenomenal results from Dr. Osmond's style of psychedelic therapy, mainstream psychiatrists were skeptical. Osmond's method, and psychedelics in general, were not easily tested by double-blind experiment (Pollan 2018, 208; Richert 2019, 83-84). Of course, researchers could try—there are several published studies on psychedelics from the 1960s which purport to be double-blind (Blacker et al. 1968, 342; Stevens 1987, 168-169). But generally, the intensity of the psychedelic experience made it quite clear who had received the real drug, especially with the high doses used by Osmond and his disciples. If a patient, an hour or so after ingestion, began experiencing vivid hallucinations, they could be reasonably sure they were not in the control group. The researchers, for their part, usually found it rather obvious which of their participants were given the real thing; most adults do not spontaneously exhibit visible ecstasy, awe, or terror after consuming sugar pills.

The impracticality of testing psychedelics in the same manner as other experimental treatments became a major problem in 1962, with the new FDA restrictions on pharmaceutical testing. Any researcher or psychiatrist hoping to test experimental medication now required FDA approval (Belouin and Henningfield 2018, 9). Since psychedelic experiments could not meet the "gold standard" of double-blind testing, they were rarely approved. Brian Rosborough, a legal scholar, complained in 1966 that "LSD is having to bear the brunt of mushrooming controls while trying to prove itself" (319). As a result of these restrictions, say Lee and Shlain, "some of the most distinguished and experienced investigators were forced to abandon their work and the conditions

that might have demonstrated LSD's therapeutic potential virtually ceased to exist" (1985, 90-91). The medical community had to base their opinions off the limited research that had been done prior to 1962, most of which was not adequately controlled.

These issues with testing protocols and regulations may seem pedantic, but their impact on the political process cannot be overstated. As will be discussed in the next subsection, the decision to criminalize psychedelics so severely was largely based in the psychiatric community's reluctance to embrace them as medicine. This reluctance stemmed from an aversion to any substance that could not meet the standard of double-blind testing. But the barriers imposed by FDA regulation and the intrinsic nature of the drugs made it very difficult for psychedelics to meet that standard. It is not surprising, then, that most experts were skeptical of the near miraculous results claimed by psychedelic therapists.

Not only were the effects of psychedelics inconsistent and difficult to test, but they were also commonly associated with mental illness. When psychedelics were first introduced to Western medicine, they were generally assumed to produce a "model psychosis" of sorts (see "Historical Background: The Peak"). Later research by Dr. Osmond and others demonstrated that psychedelic-induced hallucinations are quite different from those experienced in psychosis (Meyer 1967, 28). However, for many experts, this was beside the point—mainstream psychiatry treated any form of hallucination or atypical perception as pathological. (Lee and Shlain 1985, 68). Mogar's 1965 meta-analysis of psychedelic research describes "traditional scientific and cultural resistances to such phenomena as psuedo-hallucinations [sic], hypnogogic and dream images, extrasensory perception, and hypnosis . . . each of these . . . have traditionally been associated with the negative, bizarre, and abnormal" (149-150). Consequently, many psychiatrists found it absurd that psychedelics might successfully treat mental illness—how could they when they appeared to temporarily induce it? These perceptions also reinforced the concerns over psychosis. Since the effects of psychedelics at least superficially resembled psychosis, it seemed quite reasonable that a psychedelic experience could trigger a psychotic break.

Even more problematic than the drugs themselves, however, were the researchers and therapists who advocated for them. Psychedelics were generally the domain of younger psychiatrists, recently graduated and eager to make a name for themselves with this radical new technique. These new therapists' disregard for established psychiatric norms, accompanied by results that seemed too good to be true, invited suspicion (Stevens 1987, 176-178). Lee and Shlain (1985) argue that, like Galileo, the psychedelic therapists were condemned by the old guard for daring to challenge the dominant paradigm of their field. They were branded as eccentric and misguided, if not drug-addled charlatans (68). The president of the American Medical Association scathingly remarked that "it was impossible to find an investigator willing to work with LSD-25 who was not himself an 'addict'" (Lee and Shlain 1985, 91).

The most influential upstart of all was Timothy Leary (see "Historical Background: The Peak"). According to a 1966 account, "the notoriety of LSD . . . dates back only a few years, probably specifically to 1963 when Timothy Leary, a psychologist at Harvard and an apostle of LSD, was dropped from the faculty" (Walsh 1966, 1729). As a national celebrity and impassioned advocate

for the psychiatric, recreational, and spiritual use of psychedelics, Leary contributed more than anyone to their popularity among the American public (Belouin and Henningfield 2018, 9; Pollan 2018, 185). However, he also contributed more than anyone to psychedelic research's bad name. He shared the drugs freely with students, and often used them himself while conducting his research (Lee and Shlain 1985, 88). The "experiments" conducted by the Harvard Psilocybin Project ranged from psychedelic-fueled Bible readings to ancient Hindu "sex rituals" (Miles 2005, 68). After being dismissed, Leary venomously remarked that psychedelics were "more important than Harvard" (Lee and Shlain 1985, 88). He donned white robes, dubbed himself the "High Priest" of LSD, and founded what amounted to a psychedelic party mansion in upstate New York (96-102). To most outside observers, it appeared that psychedelics had reduced a formerly respectable Harvard professor to a spiritual, hedonistic quack.

Thanks to the antics of overenthusiastic evangelists like Tim Leary, psychedelic research took on a veneer of mysticism and subjectivity. This perception was magnified by the difficulty of gathering high quality data on psychedelics, as well as their inherent unpredictability. It is therefore understandable why many doctors believed that "the words LSD and scientific objectivity are mutually exclusive," as one commented in 1967 (Meyer 1967, 5). All the research that had supported medical psychedelic use was now suspect. Pollan laments that "in the mid-1960s, an entire body of knowledge was effectively erased from the [psychiatric] field, as if all that research and clinical experience had never happened" (2018, 142). Psychedelics now seemed too risky and unreliable for most psychiatrists to recommend their medical use. Then, just as the federal government began to debate criminalization, new research emerged suggesting that psychedelics could cause genetic damage. This confluence of factors ensured that, at the crucial moment when they were being asked to testify, very few experts were comfortable vouching for psychedelics' medical potential. In the next subsection, it will become clear that this chilliness from the medical community was the decisive element in the criminalization of psychedelics.

6.2. THE ANTI-DRUG MORAL FRAMEWORK

Up to this point, this paper has covered a broad range of historical processes that contributed to the criminalization of psychedelics. The literature review explored the pattern of expanding drug criminalization in the US. Then, the Moral Panic section observed that there was indeed a moral panic about psychedelics, but it was not the cause of criminalization. Up to this point, this section has focused on how the American psychiatric community came to believe that psychedelics were not medically useful. All these factors must now be considered together.

The history of drug policy in the US suggests a moral framework, shared between many Americans, in which recreational drug use is considered not only unwise, but evil. This belief is justified by a range of socially constructed stereotypes about drugs and drug users—Fish writes that "the field of drug prohibition is rife with reified concepts that have led to untold mischief" (1998b, 16). This underlying moral current produces occasional instances of drug-related moral panic—sometimes organically, sometimes engineered by politicians for electoral advantage. It also ensures that, panic or not, the government's default response to the emergence of new recreational drugs is to criminalize them. The objective risks associated with the drug are

irrelevant—the degree of criminalization is determined not by danger, but by medical potential. Consequently, in the mid-1960s, when most experts seemed to agree that psychedelics had no medical potential, US lawmakers took that as sufficient justification to criminalize them at the highest level.

6.2.1. PROTESTANT INFLUENCES: DRUG TAKERS PORTRAYED AS DEVIANTS

The early 20th century saw a turning point in American cultural understandings of drug use ("Literature Review: Drugs in the United States"). Thanks to the efforts of a handful of influential, dedicated "moral crusaders," public opinion began to condemn intoxication of any sort. The biggest success of this movement was Prohibition in the 1920s—although that victory was short-lived, since alcohol was simply too popular to permanently outlaw (Levine and Reinarman 1998, 260-261, 268). Other substances, however, were much more easily demonized by moral crusaders; recall how Narcotics Bureau Chief Harry Anslinger managed to turn the American public against cannabis. A similar aura of fear and danger surrounds all new recreational drugs. Vatz and Weinberg note that Americans tend to incorrectly assume that all recreational drugs are highly dangerous (1998, 65-66). This has created a pattern of drug-related moral panics in the US: opium, alcohol, and cocaine in the 1900s; cannabis in the 1930s; psychedelics in the 1960s; crack in the 1980s, etc. (Goode and Ben-Yehuda 2009, 198). It seems a new substance cannot emerge in America without being subjected to moral panic and criminalization. However, it is important to understand that these moral panics are mere symptoms of a broader, more constant cultural disposition against consciousness alteration.

The origins of the anti-drug moral framework are multi-faceted. As discussed in the literature review, scholars like Morgan (1981) argue that anti-drug attitudes originated in response to the prevalence of alcohol and opium use around the turn of the century. Alcohol and opium are addictive, sedating, and disinhibitory. For the American public, it seemed reasonable to assume that other, more unfamiliar drugs, such as cannabis, would have similar effects (62-63). However, this does not explain the origins of the moral crusaders who led the charge.

Ultimately, the early 20th century anti-drug campaigns were a product of American Protestant culture. In a previous paper, I explore this connection extensively (Sproul 2019). I compare the case of the US, a predominately Protestant nation with harsh drug laws, with Portugal, a predominately Catholic one that has decriminalized drug use nationwide. Although the two countries share a similar history of drug epidemics, Protestant moral activism, I argue, made all the difference (11-13). Protestants are much more inclined than Catholics to pursue organized "temperance movements" to outlaw intoxicants. In fact, previous research by Harry Levine shows that, of the European nations to undergo major temperance movements, all have been predominately Protestant (1993, 2). The brand of Protestantism that pervaded late 19th century America was particularly disposed to moral crusading. L. A. Schmidt describes the emergence around that time of "a new theology focused on religious salvation through the suppression of vice. This new religious ideology provided a core of beliefs and powerful justification for organizing a public crusade to 'exterminate' vice" (1995, 1). In his *Hellfire Nation*, James Morone links this neo-Puritan creed to nearly every facet of American political life. "Visions of vice and

virtue define the American community," he says (2003, 5). Consequently, more so even than other Protestant nations, American history is pervaded by mass social movements to combat sin (10-12).

For these Puritan crusaders, intoxication of any sort was a social disease to be eradicated. Levine explains, "Protestantism produced a psychology which stressed the importance of self-regulation and self-restraint" (1993, 9). Since drug use intervenes with one's capacity for self-control, Puritans considered it morally intolerable (Morone 2003, 16). As noted by both Morgan and my own research, the rhetoric used by anti-drug moral crusaders was pervaded by references to "free will" (Morgan 1981, 50; Sproul 2019, 11-12). In one of his infamous anti-cannabis tirades before Congress, Harry Anslinger (1937) asserted that "qualities of the drug render it highly dangerous to the mind and body upon which it operates to destroy the will." As will be seen in the next subsection, the same exact stereotypes were extended to psychedelic users in the 1960s.

These perceptions tend to catalyze moral panics when a new drug or pattern of drug use is revealed to the public. However, the anti-drug moral framework also ensures that all new psychoactive substances without apparent medical potential are met by the government with demonization and criminalization—independently of whether a moral panic is occurring. In the 1930s, for example, despite the best efforts of anti-drug proselytizers like Harry Anslinger, no major moral panic over cannabis emerged among the general public. Nevertheless, despite the lack of public concern or widespread use of the drug, lawmakers elected to severely criminalize cannabis possession (Goode and Ben-Yehuda 2009, 198). The American cycle of drug-related moral panics is related to, but not the cause of, its cycle of expanding criminalization.

The framing of drug users as deviant and deserving of punishment informs not only US policy, but international law. As discussed previously, the US has been the primary architect of the international drug criminalization regime (see "Literature Review: Drugs in the United States"). Andreas and Nadelmann recount how "the United States has advocated for the imposition of punitive control systems in all countries . . . US drug enforcement officials have persistently criticized foreign governments . . . for their emphasis on public health approaches to the drug problem" (2006, 43). Moreover, Emily Crick (2012) argues that moralizing anti-drug rhetoric has spread from American political discourse to the world at large. Through international agreements like the 1961 Single Convention on Narcotic Drugs, she says, the "global 'Self'" was "constructed as being morally good in contrast to the 'evil' of narcotic drugs . . . no other international convention describes the activity it seeks to prevent in such terms" (408). Of course, say Andreas and Nadelmann, other nations were already sympathetic to these views—if they were not, US efforts to export its drug policy and discourse would have failed as miserably as its attempt to globalize alcohol prohibition (2006, 43). Nevertheless, America's Puritan anti-drug moral framework provided the theoretical grounding for the international prohibition regime.

Of course, that is not to say that drug criminalization, wherever it occurs, is always the result of Puritan crusading. Many of the countries with the most draconian drug laws, such as China, North Korea, and Iran, are largely outside the American sphere of influence (American Addiction Centers 2020). These nations' severe penalties for drug possession and trafficking, up to and

including execution, are likely the result of domestic politics. For example, the severe criminalization of drugs in Muslim nations like Iran and Saudi Arabia, and the United Arab Emirates was likely driven by a similar anti-drug moral framework to that in the US but was based in Islam rather than Puritanism. Although a detailed analysis of drug policy in the Islamic world is outside the scope of this thesis, interested readers should look to Mansur Ali's (2014) essay on the subject. As for southeast Asia, the RAND corporation has produced a thorough report on drug policy in the region, which would be an excellent starting point for further research (Pardo, Kilmer, and Huang 2019). In any case, though some countries may treat their drug users even more harshly than the US, it was Americans who orchestrated the criminalization of drugs throughout most of the Western world. Puritanism is not the only cause of drug criminalization, but in the US and in international law, it has been a crucial driving factor.

Under the anti-drug moral framework, which views all drug use as equally unacceptable, the objective risks associated with a particular drug are largely irrelevant. If a drug has no medical use, it is criminalized to the highest degree. Note the way that drugs are divided by the 1970 Controlled Substances Act. Schedule I, the most highly criminalized category, is distinguished from lower scheduled not by extreme danger, or addiction potential, but by "no currently accepted medical use in the United States" (DEA n.d.). Of course, drugs in this schedule are supposed to also have a "high potential for abuse," but if a drug's "potential for abuse" does not correspond to its health risks or addictiveness, the criterion is functionally meaningless. The DEA itself admits that "the term 'potential for abuse' is not defined in the [Controlled Substances Act]" (DEA 2017).

In practice, the drugs in Schedule I are often far safer and less addictive than those in lower schedules. Cannabis and psychedelics are in Schedule I, whereas morphine, methamphetamine, and cocaine are in the less severe Schedule II, and highly addictive benzodiazepine tranquilizers like Xanax are all the way down in Schedule IV (DEA n.d.). To compound the problem, once a drug has been condemned as medically useless and placed in Schedule I, it becomes almost impossible to redeem. David Nutt, a contemporary drug researcher, bemoans the "regulatory jungle" that anyone hoping to study Schedule I drugs must navigate. "Limitation to clinical research produced by the regulations almost certainly has done much more harm than good to society by impeding medical progress" (2015, 5). No matter how safe a drug may be, if it appears to lack medical applications, it will be banned, and that ban will make it nearly impossible to conduct further medical research, perpetuating a vicious cycle of unfounded fear.

This was the dominant paradigm of drug policy in the US around the time that psychedelics became popular for recreational use. In 1966, in a scathing critique of the FDA crackdown on psychedelics, Rosborough effectively summed up the popular view: "society has not accepted the use of drugs for pleasure. To experience synthetic emotions is believed to be immoral" (324). This view resulted from the efforts of Protestant moral crusaders in the early 20th century. These activists established the notion, both at home and abroad, that the non-medical use of psychoactive drugs was not merely dangerous but a direct threat to the social fabric. The objective dangers of each substance were hardly relevant—all non-medical drug use was considered deviant and worthy of punishment. By examining government discourse on psychedelics in the late 1960s,

one can see how the anti-drug moral framework impacted the national discussion and led to the criminalization of these substances.

6.2.2. THE ANTI-DRUG MORAL FRAMEWORK AND PSYCHEDELICS

As discussed in the previous section, by the mid-1960s, most reputable psychiatrists had concluded that psychedelics lacked clear medical potential. So, when the time came to consider the criminalization of psychedelics, scientists were reluctant to give the drugs their full-throated endorsement. Under the anti-drug moral framework, an apparent lack of medical use was sufficient cause to criminalize psychedelics at the highest level.

In the public discourse about psychedelics, the Protestant concern with self-regulation and productivity was on full display. A 1966 article in the *Catholic Transcript*, decrying Tim Leary's "LSD cult," asserts that psychedelics could not possibly be used for good since "no personal and responsible act can be performed when . . . the intellect and free will are deliberately frustrated" (The Catholic Transcript 1966). Indeed, the common thread linking the various horror stories about psychedelics was the fear that users would be unable to refrain from self-destructive, violent, and/or criminal behavior. TV star Art Linkletter famously attributed his 20-year-old daughter's suicide to an LSD-induced panic, and other reports of psychedelic-addled youngsters inadvertently throwing themselves out of windows or off roofs were quite common (Torgerson 1969; Dreyfuss 1967; Gordon 1963, 40; NYT 1971). The papers were also especially infatuated with stories of college students blinding themselves by staring at the sun under the influence of LSD—stories which later turned out to be entirely fabricated (Siff 2015, 154-155).

The national news also blamed psychedelics for innumerable murders, sexual assaults, and other acts of violence (see "Was There a Moral Panic?") (NYT 1966). However, these reports are dubious: they were based on anonymous sources and often had clear inconsistencies (Stevens 1987, 277). Additionally, police testifying before Congress were unable to provide any concrete examples of violent crimes attributable to psychedelics (275-276). Contemporary research suggests that, if anything, psychedelic use reduces criminality and violent inclinations (Hendricks 2014; Hendricks 2017; Thiessen et al. 2018). The stories are, however, highly reminiscent of the rhetoric used by Harry Anslinger in the 1930s about cannabis users: "some people will fly into a delirious rage, and they are temporarily irresponsible and may commit violent crimes" (Anslinger 1937; Stevens 1987, 276-277). Stevens comments that "if you changed a few nouns in any of the antimarijuana stories of the Thirties, you ended up with a reasonable facsimile of the standard 'LSD madness' story" (1987, 277). The panic that emerged surrounding psychedelics in the late 1960s was not an isolated occurrence, but rather was symptomatic of the same moral framework that drove the criminalization of cannabis. Indeed, this framework ensures that nearly all new drugs, deservedly or not, are associated with crime and violence in the public and government eye (for further discussion, see "Disproportionate Reaction").

Another core element of the anti-drug moral framework is the fear that drug use inhibits productivity (Siff 2015, 177). Morgan observes that throughout the 20th century, Americans have condemned recreational drug use, while happily accepting the "medical" use of the same

substances to promote productivity (1981, 158). For example, amphetamines are illegal for adults to use recreationally, but totally acceptable to administer to young children who struggle to focus in class (in the form of prescription drugs like Adderall). Morgan theorizes that the stereotype of the lazy drug user emerged in the early 20th century due to perceptions of opium users as lethargic and unmotivated (50). Since then, he says, it has been applied to all recreational drug users.

Indeed, one of the most common worries about psychedelics was that they would turn their users into shiftless deadbeats. According to *Life* magazine, psychedelic users often "discover that life is only a game, then begin playing it with less and less skill. Their vision becomes a beguiling scrim drawn over a life of deepening failure" (Life 1966). The article provides no statistics, research, or even anecdotes to support this claim. Another article from the *New York Times* asserted that "Of all of LSD's effects, the worst may be . . . permanent dulling of users' objective judgement and its replacement by purely subjective values" (Hill 1967). This allegation is so vague as to be ludicrous—how exactly is "objective judgement" measured? With both articles, the reader is meant to take it as self-evident that recreational drug use (of any sort) erodes the will.

All these stereotypes about drug users were at least in part derived from—and inextricably connected to—racial and cultural bias. Throughout US history, discourse about drug laws has been couched in racial language, and the laws themselves have been weaponized against marginalized racial populations (see "Literature Review: Drugs in the US"). Morgan argues, "The hippie became the racial image of the 1960s drug debate . . . The identification of many drugs, especially the hallucinogens . . . with mystical eastern religions reawakened the old stereotypes of passivity and weakness long associated with those cultures" (1981, 165). This association was not merely subconscious. Opponents of Tim Leary's Harvard Psilocybin Project often drew derogatory connections to the history of hallucinogenic drug use in India, which one critic called "one of the sickest social orders ever created" (Stevens 1987, 160, 199).

One of the media's biggest concerns about psychedelics was the direct threat they posed to Puritan values. Communities devoted to psychedelic experimentation were frequently and disparagingly referred to by journalists as "cults" (Abramson 1966; Gordon 1963; The Catholic Transcript 1966). The *New York Times* flatly stated in 1967 that "LSD is a threat to aspects of traditional religion" (Fiski 1967). Some even argued that the inherent evil of drug use outweighed any medical benefits psychedelics might possess. One doctor wrote for the *LA Times* that, even if LSD can effectively treat alcoholism, "by giving man by drugs what he ought to earn through moral efforts, we may have committed . . . sin against the meaning of his earthly existence" (Winkler 1960).

These worries emerged because, even more than other drugs, psychedelics appeared fundamentally incompatible with the American Christian tradition. As was shown in the 1962 "Miracle of Marsh Chapel" (see "Historical Background: The Peak"), psychedelics could reliably induce mystical, even spiritual experiences (Lee and Shlain 1985, 76-77). For proponents of psychedelic use, like Aldous Huxley, and Tim Leary, this was the main objective. If there was any doubt that psychedelics posed a threat to mainstream religion, it was put to rest in 1965 by Leary's founding of the "League for Spiritual Discovery" (abbreviated, of course, "LSD"). The league was

a religious organization devoted to the exploration of inner spirituality through psychedelics. They propounded Eastern mysticism, particularly the *Tibetan Book of the Dead*, as a complement and guide to the psychedelic experience (Lee and Shlain 1985, 105-110). Leary's psychedelic religion was far from the only one—in fact, by the end of 1966, there were two other, separate religious organizations (the Neo-American Church and the Adanda Yogic Ashram) headquartered in Leary's own house (Miles 2005, 228). Something about the psychedelic experience tended to persuade users that they had undergone genuine spiritual revelation.

The moral backlash to these psychedelic proselytizers was inevitable. Stevens observes that, "to discover, in the recesses of the mind, something that felt a lot like God, was not a situation that . . . organized religion wished to contemplate" (1987, 180). Indeed, the most common reaction to claims of psychedelic-induced enlightenment was outrage and dismissal. In a 1966 article, the *Catholic Transcript* asserts that "despair is a logical corollary of dependence on a drug like LSD for religious experience." But despite the horror of mainstream religious leaders, the late 1960s saw more and more young people turning up their noses at Christian tradition in favor of drug-fueled ecstasy.

In light of these developments, it is not at all surprising that a moral panic emerged around psychedelics. Due to the dominant Puritan culture, Americans were already predisposed against recreational drug use of any sort. Drugs were presumed to be highly dangerous, and to cause criminal behavior and unproductivity; psychedelics were no exception. However, the mysticism associated with psychedelics made them even more concerning than other drugs. In the eyes of neo-Puritans, psychedelics were not just intoxicants, but false idols.

6.2.3. THE ANTI-DRUG MORAL FRAMEWORK AND THE U.S. FEDERAL GOVERNMENT

Of course, it was not the media nor the public who criminalized psychedelics. The anti-drug moral framework was similarly entrenched in the minds of policymakers. At the 1966 Senate Hearings, most Senators considered criminalization the default position. Indeed, notes Stephen Siff, "deliberation ranged only from control to prohibition, not the full gamut to inaction or further liberalization" (2015, 176). Additionally, most Senators leaned heavily toward the prohibition side of the spectrum. "The burden of proof," said Senator Jacob Javits (R – NY), "is on the scientists and the government departments which contend against individual prohibition" (NIH 1966, 8).

One such scientist was Dr. Yolles of the NIMH, who made it quite clear that psychedelics were not especially addictive or dangerous. "Psychological dependence on drugs of the LSD type . . . is usually not intense," he says, and "the number of adverse reactions . . . is in the same range of magnitude of occurrence as in any other type of psychiatric treatment" (NIH 1966, 22, 24). However, he admitted that the jury was still out on the drugs' medical potential (26). For Senator Ribicoff, this alone was sufficient reason to criminalize. The chief question he had for Dr. Yolles was, "Why should not [psychedelic] possession be prohibited? . . . What about heroin and similar narcotics? You think that we should prohibit their possession, don't you?" (NIH 1966, 33). For Ribicoff and his colleagues, it was irrelevant that psychedelics had completely different safety and

addiction profiles than heroin—both were drugs without medical potential, and therefore should be considered equal in the eyes of the law.

To be clear, the scientists and doctors generally did not recommend the criminalization of psychedelics, or any drugs for that matter. At the 1966 Senate hearings, Dr. Yolles was vocally opposed to fully criminalizing LSD: "If we make the possession of LSD illegal, it will drive it further underground and make what is perhaps the beginning of flaunting of authority . . . a more pathological process and a more strongly accented act of rebellion" (NIH 1966, 32). At the 1968 FDA hearings on psychedelics, the medical professionals who testified were almost unanimously "of the opinion that making the possession of dangerous drugs a crime would be ineffectual as a deterrent to their use" (Burnett 1969, 638).

This reflects a broader pattern within the history of American drug policy; since the early 20th century, medical professionals have resisted efforts to criminalize drug use. Morgan describes how a massive drug control bill was defeated in 1910 by the advocacy of medical professionals (1981, 107). The medical establishment also sharply criticized the 1915 Harrison Act, which Massing (1998, 86) calls the "legal foundation of drug prohibition in the United States." (Morgan 1981, 116). However, by the 1930s the law-enforcement approach was entrenched, and medical experts' calls to treat drug abuse as a medical issue went unheard (134-135). So it went with psychedelics. As researchers like Dr. Sidney Cohen attempted to balance the medical promise of psychedelics with an appropriate degree of caution, policymakers exercised selective hearing (Pollan 2018, 210-211). The prevailing expert opinion was: *these drugs have potential but are unproven and possibly risky—we should approach them with caution.* What lawmakers heard was: *these drugs are unproven and risky—ban them.*

This was the message that the FDA took away from its hearings on the subject and the message that they shared with lawmakers in a remarkable 1967 report titled "LSD: The False Illusion" (Smith 1967). As the FDA was tasked with enforcing regulations on psychedelics before criminalization, they were the chief government authority on the subject and their opinion held great sway. Indeed, FDA Commissioner James Goddard was one of the most important advocates for the criminalization of psychedelics, calling LSD "one of the most dangerous drugs with which I am acquainted" (NYT 1968). In their report, the FDA echoes the concerns of medical professionals over the safety of psychedelics, while largely ignoring the same professionals' opposition to criminalization (Smith 1967, 13-15). Indeed, the report tends to overstate the risks of psychedelics, even relative to the worries of psychiatrists at the time. For example, although experts largely agreed that it was a small minority of LSD users who experienced adverse effects (see previous section - Safety Concerns), the FDA asserted that "most 'triers' and users go through intensely frightening and terrifying experiences under the drug" (13).

Even more striking than their inflation of the dangers, however, was the FDA's explicit endorsement of the anti-drug moral framework. The very first page of the report asserts that any civilization which incorporates drugs into recreation or spiritual practice is "primitive." The author opines, "In more sophisticated societies drugs have served more limited goals—those of treatment and prevention of disease" (Smith 1967, 10). Here, the attitudes of racial and cultural

supremacy that inform the anti-drug moral framework are on full display. The report also evokes Fish's observation that, in the eyes of most Americans, "drugs that are not medicine are evil" (1998b, 16). The FDA report on LSD shows that this attitude is not merely a cultural norm, but the official position of the US government.

The report proceeds to bring a series of allegations against recreational psychedelic users. Hippies have a "pharmacocentric ideology," the author says, with these core tenants: "stimulate the senses as much as possible, change the internal world with drugs, and ignore constructive actions to improve the external world" (Smith 1967, 14). He goes on to assert that "personality patterns of people who ingest LSD indicate strongly that they are less able to postpone pleasure and to withstand the frustrations of everyday life" (14). The FDA cites no source—in fact, the research that had been done at the time on frequent LSD users suggested just the opposite (Mogar and Savage 1966). However, the claim quite vividly demonstrates the anti-drug moral framework in action. It is taken as a given that recreational drug use of any kind must destroy self-control (one of the main tenants of the anti-drug framework).

Later in the report, the author makes a truly remarkable claim: "Even more serious and prevalent than . . . negative reactions are the adverse consequences of so-called 'positive trips' which lead the user to feel that he has found the answers to life's problems . . . he only too often winds up disengaging himself from productive, focused personal and social activities" (Smith 1967, 15). First, note the implicit message: individual well-being and happiness are less important than productivity. This quote also reaffirms the unfounded notion that psychedelic drug use inhibits productivity. No evidence for this claim is needed; under the anti-drug moral framework, it is a given that any drug not prescribed by a doctor must inhibit productivity and self-control.

With these beliefs in mind, Congress's 1968 vote to criminalize psychedelics is perfectly comprehensible. The federal government's position was that any drug without undoubted medical potential ought to be criminalized, since drug users would inevitably be driven to listlessness, if not violence. Since experts were not willing to vouch for psychedelics' medical potential, and recreational use was accelerating, federal lawmakers chose to address the issue the same way they had addressed drug problems since the turn of the century—severe criminalization.

Does that mean that psychedelics would have remained legal if more experts had been willing to vouch for their safety and medical efficacy? Probably not—the anti-drug moral framework would have guaranteed criminalization sooner or later, as it has for nearly every other intoxicating substance (tobacco and caffeine notwithstanding). However, the *severity* of psychedelic criminalization is directly attributable to the perceived lack of medical benefits. As evidence, look to amphetamines, which were extremely popular in the 1960s for recreational use, and are more dangerous and addictive than psychedelics by every measure. Amphetamines were criminalized as well, around the same time as psychedelics, but the penalties for illicit amphetamine possession or sale were far less stringent (Bayer 1989, 24). Criminalization itself was most directly due to the anti-drug moral framework, but the degree of criminalization was a result of psychedelics' abandonment by the psychiatric community.

6.2.4. DRUG HYSTERIA, PARTISON POLITICS, AND THE 1968 ELECTION

Of course, the timing of the decision was not entirely coincidental. As is discussed in the Moral Panic section, the federal push to criminalize psychedelics preceded the moral panic which surrounded drugs in the late 1960s. However, by 1968, the moral panic was in full swing. Capitalizing on this anxiety, the Nixon campaign highlighted drug abuse as one of the nation's most pressing issues (Lee and Shlain 1985, 221; Massing 1998, 97 ; Siff 2015, 184-185). When Congress voted on the question of LSD criminalization, each legislator must have been acutely aware that a presidential election was just over the horizon, and that their voting record on drug legislation would be thoroughly scrutinized.

With drugs so prominent in the public eye, voting against the criminalization of psychedelics would be a risky move. Due to the anti-drug moral framework, American politicians on either side of the aisle who dare to speak out against prohibitionist policies are branded "soft on drugs" (Fish 1998a, 2). Especially with a moral panic in full swing, voting for criminalization was the politically expedient choice, independent of the lawmakers' own beliefs. Of course, their beliefs mattered; Morgan observes that drug prohibition is almost never due to electoral incentives alone (1981, ix). But, in addition to the genuine moral outrage that government officials felt about recreational drug use, the 1968 election provided a compelling reason to vote "yes" on criminalization.

It is important to note that, though the election undoubtedly played a role, banning psychedelics was not a partisan issue. Of course, Nixon and his supporters were Republicans, but most Democrats were similarly loath to tolerate recreational drug use. In 1965, the Drug Abuse Control Amendments (DACA), which banned the unauthorized sale and manufacture of psychedelics, passed Congress unanimously (GovTrack n.d. a). Then, in 1968, the amendment to DACA that criminalized personal possession of psychedelics passed the House of Representatives by a vote of 320-2 (GovTrack n.d. b). Finally, in 1970 Controlled Substance Act, which placed psychedelics in the strictest possible enforcement category, passed in the House by a vote of 341-6. In the Senate, there was not a single "no" vote (GovTrack n.d. c). These nearly uncontested votes imply that, in the late 1960s, the anti-drug moral framework dominated the minds of voters and politicians so thoroughly that opposing criminalization was unthinkable, regardless of party affiliation.

6.2.5. EXPORTING MORALITY

One question remains—how does this theory square with the 1971 UN Convention on Psychotropic Substances? As discussed in the Methods Section, the domestic politics of other UN member nations are outside the scope of this analysis. Since this paper has already established that the US was not the primary driver of psychedelics' inclusion in the Convention, it can only speculate as to the cause. There is evidence, however, to suggest that the anti-drug moral framework extends to the international sphere.

The 1971 Convention, like US drug policy, looks to medical potential before considering objective risk. In fact, notes an eyewitness account of the Convention, the degree to which a drug

was criminalized in 1971 was almost exclusively determined by medical potential. The Convention, he says, "consists of two treaties: one for 'street drug' hallucinogens in Schedule I and one for pharmaceuticals in Schedule II, III and IV. There are extremely strict control measures for Schedule I substances and very weak ones for Schedule II and III substances and nothing for Schedule IV" (Bayer 1989, 24). These pharmaceuticals, namely amphetamines and tranquilizers, have well-established medical applications, but are also far more dangerous and addictive than psychedelics (Nutt and Phillips, 2010, 1591). This implies that scheduling decisions were based almost exclusively on medical utility, with little attention paid to other characteristics.

To explain how American morals might have shaped international drug law, O'Manique invokes a phenomenon called "international norm diffusion" (2014, 5). The US's outsize role in shaping the international drug criminalization regime, she argues, may have functionally exported its anti-drug moral framework to other nations. A fruitful avenue for future research would be to evaluate this claim, perhaps by looking to the domestic politics of other countries who advocated for psychedelic criminalization, such as Russia.

7. CONCLUSION AND DISCUSSION

The preceding pages examine an odd phenomenon in American politics. In the 1950s, psychedelics seemed set to revolutionize mental healthcare. A relatively safe class of substances with extraordinary results in early experiments, psychedelics could have joined anti-psychotics and tranquilizers in the core psychiatric toolkit. Instead, in 1968, the US federal government voted to criminalize the personal possession of psychedelics and prohibit their medical use entirely. How can this series of events be explained?

To answer this question, this thesis used a qualitative process-tracing method, detailed in the Methods section. By collecting and synthesizing a range of secondary and primary sources, a historical timeline was constructed. This timeline (see Historical Background) traces the rise and fall of psychedelic use in the US, beginning with the military-intelligence community's secret experiments with LSD in the 1950s. It describes how psychedelics grew into a cultural phenomenon in the early 1960s and the connection between psychedelic drugs and the "hippie" counterculture. Finally, it details the federal government's meandering path toward criminalization, beginning with new FDA regulations in 1962 and culminating with psychedelics' inclusion in Schedule I of the US's Controlled Substances Act of 1970 and the UN Convention on Psychotropic Substances in 1971.

Next, in the literature review, the secondary literature on drug policy and psychedelic criminalization was explored. Many independent sources agreed that the US has exhibited a pattern of expanding drug criminalization over the past century, beginning with the efforts of early 20th century temperance advocates, and culminating in the ongoing "War on Drugs." As for the criminalization of psychedelics specifically, most scholars invoke the concept of "moral panic" to explain the rapid policy transition. In the mid-1960s, the argument goes, there was a sudden explosion of media attention paid to psychedelics, almost entirely negative. The media rushed to capitalize on public concerns by publishing uncorroborated stories of psychedelic users who had

died, gone insane, or committed heinous acts under the influence. The resulting wave of public hysteria forced the government's hand, and they criminalized psychedelics to soothe the fears of the masses (Goode and Ben-Yehuda 2009). There are variations on the moral panic hypothesis, such as DiPaolo's (2018) theory that the moral panic was deliberately engineered by the government in order to criminalize the hippie community. However, most scholars accept the core argument that negative media representations and public hysteria were the primary causes of psychedelic criminalization.

The Moral Panic section of this thesis evaluated the moral panic argument against the historical record. There was substantial evidence to support the first half of the story—there was undoubtably a surge of negative media portrayals of psychedelics in the mid to late 1960s. Additionally, moral panic theory offers many other helpful explanatory tools. For example, the concept of "folk devils" helps explain why hippies and other psychedelic users faced such excessive persecution and demonization. Particularly, the notion of "spurious attribution" helps explain why psychedelic users were so frequently cast as violent or prone to crime, despite clear evidence to the contrary (Cohen 1972, 54-55).

However, although moral panic theory helps to explain many of the events that occurred in conjunction with psychedelic criminalization, it falls short in explaining why the drugs were criminalized. Most obviously, the FDA had already been tightening controls on psychedelic research for years, and the Senate had already conducted its 1966 hearings on LSD criminalization, before the moral panic ever began. Moreover, government actors approached criminalization slowly, deliberately, and with extensive input from independent experts. This does not align with the knee-jerk governance that tends to follow a moral panic (Cohen 1972, 133-138). Finally, the moral panic theory is entirely unable to explain the global criminalization of psychedelics. The US was not one of the primary advocates for psychedelics' inclusion in the 1971 Convention on Psychotropic Drugs, so American politics could not have possibly caused that outcome. To reconcile the strengths of moral panic theory with its weaknesses, the Alternative Theory section of this thesis provides a more nuanced account of psychedelic criminalization.

That section argues that, due to the American Protestant culture and the popularity of opium, the turn of the century saw a moral crusade against intoxication of all kinds. This crusade resulted not only in Prohibition, but in a set of cultural stereotypes and moral convictions surrounding drug use. Since then, most federal lawmakers, as well as their constituents, have believed that recreational drug use invariably saps the user's productivity and self-control, promoting crime and violence. As such, the only appropriate response to any novel psychoactive substance without medical potential was severe criminalization.

It was with these beliefs in mind that federal legislators considered criminalization in the late 1960s. At the time, psychedelics were relatively untested, appeared to have several legitimate risks, and flew in the face of many of psychiatry's conventional assumptions. Additionally, psychedelics' reputation was tarnished by their use as an instrument of torture by US military intelligence agencies, and by their association with controversial public figures like Tim Leary. Therefore, few reputable medical professionals were willing to endorse them as a medicine during

the 1966 Senate hearings and other contemporaneous investigations. Although those same experts advocated against criminalization, for lawmakers and laypeople it appeared to be the natural option. As for the international decision to criminalize psychedelics in 1971, this may be at least in part the result of American influence on global culture and moral beliefs. However, there are likely many other contributing factors, such as the domestic politics and culture of other UN member states, that play a role as well. So, although criminalization in the US is explained well by this theory, further research will be necessary to explain global criminalization.

This thesis is heavily indebted to prior investigations. The majority of the historical information included here has already been reported in much more extensive detail by Lee and Shlain's *Acid Dreams*, Siff's *Acid Hype*, Stevens's *Storming Heaven*, and Pollan's *How to Change Your Mind*, among others. This paper builds upon the foundation of these well-researched accounts and checked them against each other, other secondary sources, and the available primary source evidence. It is through this process that the account of historical events described in this thesis was developed.

This study is also far from the first to describe the anti-drug moral framework in the US. Most notable, perhaps, is Morgan's 1981 work *Drugs in America*, an in-depth examination of the history and culture surrounding US drug policy. Additionally, in their analysis of the American discourse surrounding drugs, Vatz and Weinberg devote considerable attention to the popular notion of drugs as invariably dangerous and a major cause of crime (1998, 64-66). This thesis expands on these analyses and integrates them with other literature documenting the history of drug-related moral panics in the US, such as Goode and Ben-Yehuda's 2009 work on the subject.

Moral panics, this paper argues, emerge occasionally as a direct result of the anti-drug moral framework. However, criminalization of drugs is not always a result of moral panics—the anti-drug moral framework ensures that, when new psychoactive substances emerge, lawmakers tend to see criminalization as a default option, regardless of whether the public is highly concerned. This aligns neatly with Hawdon's (1998) analysis of the state's role in generating moral panics. Rather than merely translating public opinion into law, he writes, "state initiatives regarding drugs often precede public opinion and create concern independently of the objective extent or seriousness of the problem" (420). Evidently, in the case of psychedelics, this is precisely what occurred.

In the literature review, significant attention was paid to the scholarly debate between Goode and Ben-Yehuda, the most impassioned advocates of the moral panic theory of psychedelic criminalization, and Cornwell and Linders, its most severe critics (see "Literature Review"). The theory developed in this paper suggests that both sides have merit, but Cornwell and Linders are more successful at explaining psychedelic criminalization. Goode and Ben-Yehuda quite persuasively argue that the response to psychedelics in the late 1960s was entirely disproportionate to their actual harms (2009, 202-205). But without disputing that point, Cornwell and Linders correctly observe that the moral panic theory fails to explain the cautious, deliberative manner in which lawmakers approached the question of criminalization (2002, 308).

Cornwell and Linders's alternative theory—that "prohibition emerged from a process of deliberation, communication, and debate among various segments of the public as well as members of the legislative bodies"—is fundamentally sound (2002, 326). However, they are overly critical of moral panic theory. Although they are correct that a moral panic alone is insufficient to explain psychedelic prohibition, moral panic theory provides a variety of useful analogies and analytical tools (see the discussion of folk devils and spurious attribution above). A general defense of moral panic theory is beyond the scope of this paper. However, one is inclined to agree with Goode that, although it may not perfectly explain every instance of deviantization, "The moral panic notion continues to illuminate social processes and deserves to remain in the sociologist's conceptual tool-box" (Goode 2008, 533).

One final point bears consideration: today, the winds seem to be changing for psychedelics once again. In the 21st century, there has been a major revival of medical research into psychedelics in the US as well as in the U.K. and Switzerland (Richert 2019, 92-93). The FDA has granted the "breakthrough therapy" designation to MDMA, which is currently in Phase 3 efficacy trials as a treatment for Post-Traumatic Stress Disorder (PTSD) (MAPS n.d.). Oregon recently became the first state to legalize psilocybin for medical use and to decriminalize possessing small amounts of all drugs, psychedelics included (Acker 2020). Additionally, several US cities have decriminalized psychedelics in recent years, and the California legislature is currently considering a bill to decriminalize them statewide (Lozano 2021).

These developments ought to be welcomed. If the new research into psychedelics bears out their medical potential, and they are authorized for psychiatric use, that could lead to quality-of-life improvements for millions suffering from addiction and other mental health issues. Regardless of one's position on recreational drug use, providing sick patients with effective medicine should be non-controversial. For this to happen, it is essential that federal controls on psychedelic drugs be updated to reflect the growing consensus that they are medically useful and pose a minimal public health threat. Liechti notes in 2017 that, despite the recent expansion of research, studying psychedelics remains "extremely costly because of overregulation . . . the scheduling of LSD still impedes or prohibits clinical research."

Fortunately, there is good reason for optimism. Granted, neo-Puritanism remains the dominant philosophy in the American drug discourse (Morone 2003, 474). But, although it is too soon to say for sure, the anti-drug moral framework may be losing its grip on the American collective psyche. Nadelmann and Lasalle (2017) note that, although the US lags behind much of the world in evidence-based, harm reduction drug policies, there is a wide base of support pushing lawmakers in that direction. The growing wave of cannabis legalization across the nation is an especially encouraging sign, suggesting that voters are becoming less unequivocally supportive of criminalization, and recognizing the harms inflicted by the War on Drugs.

Polling bears this out; in 2014, a Pew Research Center survey determined that two thirds of Americans would prefer for drug policy to shift away from criminalization and toward a more public health-oriented approach. I theorize in a previous paper that this is in part due to the heavy toll the ongoing opioid epidemic has inflicted on white, upper-middle class America. "Firsthand

experience may be changing the dominant narratives among these powerful social groups," I argue. "It is hard to advocate for drug addicts to be imprisoned rather than treated if the addict in question is your child, spouse, or close friend" (Sproul 2019, 20-21).

Although cultural norms and stereotypes are slow to change, the US may have finally reached a tipping point, and not a moment too soon. Even ignoring the medical possibilities, the hasty criminalization of psychedelics has caused decades of harm. On the black market, far more dangerous substances are often sold as "LSD," causing entirely preventable overdoses and deaths (DEA 2013; Kohn 2018). Indeed, considering the relative safety of psychedelics, criminalization has almost certainly caused more deaths than it has prevented. This just one of a long series of ill-advised policy decisions driven by the anti-drug moral framework. Fish says it best: "if we want to improve our current drug policy, we should base our thinking on observable evidence and logic rather than . . . social prejudices" (1998b, 18). The US has spent billions of dollars, thrown millions of non-violent offenders behind bars, and left innumerable medical advances undiscovered, yet is no closer to solving the drug problem than it was a century ago (The Economist 2018; Shultz and Aspe 2016). Many Americans are finally ready to try something different, and that is something to celebrate.

GLOSSARY

Ayahuasca: A psychedelic herbal brew used for centuries by Indigenous Amazonian tribes for ritual purposes. Contains DMT (see below) as well as monoamine oxidase inhibitors (MAOIs), enabling the DMT to be absorbed orally. The effects of ayahuasca are far longer lasting than vaporized DMT, and very intense even relative to other hallucinogens. Consequently, recreational use is rare. (Kuhn et al. 2019, 128-129).

Bad Trip: Colloquial term for the most common adverse effect of hallucinogen use: acute, intensely unpleasant emotions such as fear or despair, generally coupled with disturbing thoughts and/or hallucinations. Although distressing, such experiences do not generally cause lasting harm, unless the user's panic causes them to inadvertently hurt themselves (Kuhn et al. 2019, 110). Research suggests that bad trips are often a result of the user's expectations and mindset (Bunce 1979). They can be mitigated by the reassuring presence of others who are familiar with psychedelics (Becker 1967).

Cannabis (a.k.a marijuana, weed, pot, grass, etc): A plant that, when smoked or eaten, produces wide-ranging and unique psychoactive effects—it is among the most popular recreational drugs. Although not strictly categorized as a hallucinogen, cannabis has hallucinogenic properties, particularly when eaten (Kuhn et al. 2019, 174-175).

DMT (a.k.a. spice, businessman's special, the spirit molecule): *N, N*-dimethyltryptamine, a psychedelic drug derived from certain Amazonian plants. In its pure form, DMT can be vaporized and inhaled to produce an extremely intense but short-lived (less than 30 min) psychedelic experience. DMT can also be consumed orally if combined with a MAOI—see "Ayahuasca" (Kuhn et al. 2019, 125-126, 128-129).

Drug: Although the term has no single definition, it is here used to specifically refer to illicit psychoactive substances, or psychoactive substances used illicitly (e.g. use of opiates or amphetamines without a prescription). Non-psychoactive medications (e.g. aspirin) and psychoactive chemicals which are generally legal and socially accepted (e.g. alcohol, prescribed psychiatric medications) are excluded.

Ecstasy: Generally refers to MDMA or similar compounds (e.g. MDA) sold in pill form (Kuhn et al. 2019, 96-101). Additionally, on the black market, pills sold as "ecstasy" often contain dangerous adulterants (e.g. methamphetamine), and often contain no genuine MDMA at all (98-99).

Hallucinogen/Hallucinogenic Drug: A psychoactive drug with the effect of inducing hallucinations and altering a user's perception of reality. This category includes classical psychedelic drugs (See "Psychedelic Drug") as well as a range of other substances. These other substances include dissociative anesthetics like PCP and ketamine, belladonna alkaloids like those found in Jimsonweed, and atypical hallucinogens such as *Salvia divinorum* (Kuhn et al. 2019, 109).

LSD (a.k.a. acid, blotter, tabs, Lucy, etc): Lysergic acid diethylamide or LSD-25, an extremely potent psychedelic drug discovered in 1938 by Sandoz Laboratories. LSD is by far the best-known psychedelic, and the standard by which all others are measured (Drug Policy Alliance 2017; Kuhn et al. 2019, 118-119).

Marijuana: See "Cannabis." The term "marijuana" emerged into popular English usage in the early 20th century, as criminalization advocates attempted to associate cannabis use with Mexican immigrants. "Cannabis" is a less problematic alternative (Halperin 2018).

MDMA (a.k.a. Ecstasy, Molly): Methylenedioxymethamphetamine, a unique drug with both stimulant and hallucinogenic properties. Although it does act on the serotonin system to induce hallucinations, MDMA operates through different neurological mechanisms and has a different risk profile than "classical" psychedelics like LSD. Therefore, most drug researchers place MDMA and its relatives in a class of their own: "entactogens." MDMA was not used recreationally until about 1980, so it did not play a role in most of the events discussed in this thesis (Kuhn et al. 2019, 96-101).

Mescaline: The psychedelic compound responsible for the effects of peyote and other psychoactive cacti. Has been used by North American tribes for ritual purposes for millennia. Legal in some US states for religious use, otherwise subject to the same criminal penalties as other psychedelics (Kuhn et al. 2019, 126-127).

Mushrooms (a.k.a. magic mushrooms, shrooms): Generally, refers to psilocybin mushrooms (see "Psilocybin"). May rarely refer to other hallucinogenic mushroom varieties, such as *Amanita muscaria* (Kuhn et al. 2019, 121, 124).

Peyote: See "Mescaline."

Psilocybin: The compound responsible for the effects of psychedelic mushrooms. Was used for ritual purposes by Mexican and Central American tribes for millennia but was mostly unknown to European-Americans until the 1930s. The second best-known psychedelic, after its close cousin LSD (Kuhn et al. 2019, 121).

Psychedelic Drug: A hallucinogenic chemical that produces profound changes in perception, cognition, and mood by acting on the serotonin system. Examples include LSD, psilocybin, DMT, and mescaline. Distinct from other types of hallucinogen that achieve their effects through mechanisms other than the serotonin system (See "Hallucinogen"). Whether MDMA should be included is debatable (see "MDMA") (Kuhn et al. 2019, 133).

Psychoactive Substance: A chemical which, when administered to a human, induces noticeable effects on their mental state. Some of these substances are socially accepted, legal, and widely used (e.g. alcohol, caffeine, nicotine) whereas others are criminalized (See "Drug"). Some psychoactive substances are legal/acceptable for medical use, but considered illicit drugs when used recreationally (e.g. opiate painkillers, amphetamines).

Trip: Colloquial term for a psychedelic drug experience—can be used as a noun or verb (Kuhn et al. 2019, 115).

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Burning Woman: Sexualized Robots and the Vilification of Women in *Metropolis* and its Precursors

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ABSTRACT

The vilification and subsequent destruction of feminine robots is a surprisingly common trope in film and literature. This essay draws connections between three very different works—Fritz Lang's *Metropolis,* Villier's *Tomorrow's Eve*, and E.T.A. Hoffman's *The Sandman*—and posits a shared narrative reason for the deaths of the three artificial women: male projection. Comparing and contrasting the three death scenes with each other as well as other texts on feminine literature and projection demonstrates how little substance there is to these "out of control" women/technologies beyond the faults of the men who create them. Furthermore, this essay brings up a prudent question: could these artificial women have become something more if it were not for the displaced guilt and projected egos of the men around them?

If you're a beautiful, feminine robot in E.T.A. Hoffman's *The Sandman* (1816), Auguste Villiers de l'Isle-Adam's *Tomorrow's Eve* (1886), or Fritz Lang's *Metropolis* (1927), don't expect to live through the end of the story. All three works feature artificial women ranging in capacity from simple automata to hyper-advanced AI; all three are at some point loved by a heroic man, and all three meet similarly destructive ends. Remarkably, no one appears to have written a direct comparison of these three works, even though they express an idea that is as relevant today as it was in the times these books were created: the projection-screen woman and the helpless man who is driven to madness by her alluring presence. One could argue that since these robotic women all deceive their leading gentlemen, they "get what's coming to them," narratively speaking. However, I propose that each of these feminine robots is, to some degree, largely a projection of a man's ego. Their sins are really the sins of the men who create or love them, and by destroying these *specifically feminine* images of sin, the men purge themselves of their own failings.

Melissa Bailar's "Uncanny Anatomies/Figures of Wax" provides an excellent summary of *Metropolis* and *Tomorrow's Eve,* which I believe can be extended to *The Sandman* as well: "For the inventors, it is a matter of projecting technological authority; for the androids, subservience and sexual availability" (Bailar 245). We see this in real life when men blame women for their own sexual fantasies and immoral desire—it is argued that the way a woman is dressed, her

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"promiscuous" behavior, the way her body looks, are all things that could tempt a man and make him act immorally. This hypothetical man takes his own desires and actions, which he knows are considered wrong, and places—or projects—them onto a woman so he can absolve himself of guilt and blame. In fiction where the female figure is a robot, she becomes the scapegoat for everything her real-life counterpart has "driven" a man to do, and the narratives of these three stories in particular try to convince us that they—artificial women in the literal sense as well as those in the figurative sense—are indeed wicked temptresses and false idols.

The commonalities that these works share are clear. All three texts feature a memorable moment when the robotic character is first created, revealed, or projected onto: the scene in *The Sandman* where the clockwork Olympia awakens and seems to fill with life when the protagonist looks at her through a spyglass, the scene in *Tomorrow's Eve* when the robot Hadaly emerges from behind a curtain, and the iconic scene from *Metropolis* where we see the heroine Maria's face literally projected onto that of an emotionless automaton. All three robots are created by pairs of men—no women are actively involved. All three are also examples of the phenomenon known as projection: Olympia is a projection of the leading man's ego; Hadaly is a projection of Alicia, a flawed but beautiful human woman; Maria is a projection of Hel, the now-deceased woman beloved by both of this robot's creators. Finally, all three robots are utterly destroyed in scenes involving fire. These commonalities are no coincidence, for the works all exist within an early Western canon of science fiction, and each takes its influence from the last. In "The Eroticism of Artificial Flesh in Villiers de L'Isle Adam's L'Eve Future," author Patricia Pulham credits *The Sandman* for the inspiration behind the robotic character in *Tomorrow's Eve:* "Villiers's novel is clearly indebted to Hoffmann's tale, a debt that is tacitly acknowledged early in the text by an epigraph from The Sandman' that opens the second chapter in Book I ('Tis he! … Ah! Said I, opening my eyes wide in the dark, it is the Sand-Man!' [TE 8])" (Pulham 1). The similar themes and characters tell us that *Metropolis* fits within this same canon. There are studies that compare *The Sandman* and *Tomorrow's Eve* or *Tomorrow's Eve* and *Metropolis,* and these often focus on questions of technology or desire, but considering how closely knit these works are, it is astonishing how little writing there is that connects all three.

Of the three, the clearest example of projection is Olympia, an automaton who functions as an absolute blank slate. Olympia is less a character and more of a prop in Hoffman's *The Sandman*. In this story, a student named Nathaniel is haunted throughout his life by the sinister nursery-tale figure of the Sandman, who takes the form of his late father's associate, Coppelius. Nathaniel has a girlfriend, Clara, who politely listens to his stories about Coppelius even though she clearly finds them boring. Through a looking-glass given to him by Coppelius' doppelgänger, Nathaniel espies the beautiful Olympia, supposed daughter of his professor, Spalanzani. He falls madly in love with her, instantly forgetting Clara and anything else about his life. It helps that Olympia is the perfect listener—all she can say is "ah! Ah!" while her admirer, Nathaniel, takes this utterance however best it suits his ego. His projection is quite explicit:

> It seemed to him that what Olympia said of his work, of his poetic talent in general, came from the depths of his own being, that her voice was indeed the voice of those very

> depths themselves. And that must actually have been the case, for Olympia never said anything more than the words already mentioned. (Hoffman 118)

The reason why her utterances on his work seem to come from the "depths of his own being" is because they are simply his own thoughts. This is something that would make many contemporary readers chuckle, as almost everyone knows a man who would love nothing more than a conversational partner like Olympia. She embodies the idea that women only exist to reflect men's own ideas and identities. Additionally, in *The Uncanny,* Freud would argue that Nathaniel also projects his own issues with his father onto Olympia: "this automatic doll can be nothing else but a materialization of Nathaniel's feminine attitude towards his father in his infancy… Olympia is, as it were, a dissociated complex of Nathaniel's which confronts him as a person, and Nathaniel's enslavement to this complex is expressed in his senseless obsessive love for Olympia" (Freud 232 n.1). Perhaps the reason why Nathaniel is so easily fooled by a notedly simple clockwork woman is that this complex has blinded him to the truth. In essence, it's hardly about Olympia and all about Nathaniel.

When Nathaniel walks in on Coppelius and Spalanzani fighting over her, she is ripped apart, and Nathaniel comes to a realization of her true nature, entirely destroying his beautiful projection screen:

> At this point Nathaniel saw that a pair of blood-flecked eyes were lying on the floor and staring up at him; Spalanzani seized them with his uninjured hand and threw them at him, so that they struck him in the chest. Then madness gripped him with hot glowing claws, tore its way into him and blasted his mind. (Hoffman 120)

This gruesome end reveals how thoroughly he has been deceived and how literally fragile his sense of self is, so he snaps. His vision of a perfect woman who can only receive his ideas and never contribute her own is revealed to be nothing more than a simple clockwork mechanism. Because he projected so much onto her, seeing her disassembled like this unsettles his mind. It is worthwhile to note that, while Olympia's demise is not related to fire, there are a lot of fiery words used in the scene, such as Nathaniel's madness gripping him with "hot glowing claws" and "flaring into a furious rage" (Hoffman 119). Olympia neither rebels nor intentionally manipulates anyone, but somehow she deceives Nathaniel far more than the leading men of the other two stories are ever deceived. In fact, it is this inaction that captures his heart, as it makes her the perfect blank slate for him to project onto. When she is revealed to be nothing more than a simple automaton and falls apart in the hands of her creators, so does his mental state: "The words he had been shouting dissolved into an awful animal bellowing. Thus, raging in hideous frenzy, he was taken to the madhouse" (Hoffman 120). It seems that these unnatural women awaken something *too* natural ("animal") in men, and this frenzy of madness is assumed to be beyond a man's control. Rather than putting the onus on the men to regain control, the narratives show that women (robotic ones in *The Sandman* and *Metropolis* or heartless human women in *Tomorrow's Eve*) are the undeniable causes of this chaos and must be destroyed for it to end. It is always the feminine figure who is the homewrecker, the temptress, the instigator, never the man who actually acts.

In utter contrast, Hadaly from *Tomorrow's Eve* is articulate and intelligent, though arguably sentient: "She is the *skeleton of a shade* waiting for the SHADE to exist!" (Villiers 61). *Tomorrow's Eve* is a work of speculative fiction starring Thomas Edison, in which the acclaimed inventor assists his friend, Lord Ewald, who has fallen in love with a beautiful but emotionally shallow woman named Alicia. Alicia is compared with another beautiful temptress, Evelyn, who is blamed for driving an honest man, Edison's friend Edward Anderson, to adultery. Anderson's life ends up in ruins, and Evelyn, who Edison calls a "deadly female" (Villiers 108), leaves him. It turns out that Evelyn's beauty is entirely artificial—a wig, makeup, tights, etc. Edison reveals that he has invented a mechanical woman (whom he has dubbed Hadaly) that can surpass humanity in her perfection and proposes that he transpose the image of Alicia onto this automaton. Edison claims that, even though this automaton will have a limited number of pre-recorded things she can say, she will still surpass any human woman as a conversational partner because Ewald can memorize the timing of her phrases and construct conversations around her as appropriate. In short, she will be the perfect partner because the things she says will only ever mean what Ewald wants them to. Hadaly is not without her rebellion, however, and has secrets even from her genius creator. Anderson's ex-wife, whom Edison has hypnotized and renamed Sowana, has secretly stowed her consciousness away in Hadaly's body.

We also see from Edison's story of his adulterer friend and his reaction to Ewald's story that he blames beautiful women for seducing men into adultery or trapping them in loveless relationships: "Such are these women, modern Furies of a sort, for whom the man they select is simply a victim to be weakened and degraded. By kind of fatality, they obey blindly the obscure urgings of their malignant essence" (Villiers 111). He paints both Anderson and Ewald as perfect, noble men, whose only flaw was falling for beauty, which Edison argues is an artifice. These women and their deceit are likened to androids. He proves his point literally with Hadaly, who is just as beautiful and artificial as Alicia:

> Well then, I thought, if the artificial, when assimilated to or even amalgamated with human nature, can produce such catastrophes; and since, consequently, any woman of the destructive sort is more less an Android, either morally or physically--in that case, one artifice for another, why not have the Android herself? (Villiers 123)

While Edison claims that his automaton will seem to be even more real than Alicia, he makes clear that the other difference between Alicia and Hadaly that makes the artificial woman so much better is that she has no will but to be utterly devoted to Ewald. Edison especially is a fantastic example of Bailar's "projection of authority" and Hadaly a fantastic example of the subservient and sexually available android—at least until she begins to act on her own and become the threatening "out of control" female.

The book praises Edison with such high esteem that it is hard to know how much the narrative holds his opinion as correct and how much it satirizes him, but his voice is unchallenged by all but Hadaly's small rebellion. Therefore, through Edison, we see a Madonna/whore complex arise in this story. Hadaly, for example, is often compared to Eve, and Alicia (who we see is simply a bit self-involved) is painted as a deceitful, empty creature. The phenomenon we now know as slut-

shaming has been around for a long time and often involves the comparison of unfavorable women (who are promiscuous and somehow both scheming and unintelligent) and favorable ones (who are chaste for all except their husbands). Since the narrative is so very colored with the opinions of Ewald and Edison, it makes the reader wonder if Alicia really is as bad as they claim. This Madonna/whore dichotomy is one imposed by the patriarchy, and in *Tomorrow's Eve* especially it's used to blame the "whore" for the negative actions of a man. The man, both modern-day and Edison-contemporary, cannot accept his own ignoble feelings, so he invents a slanderous character to project onto a woman in order to absolve himself.

Hadaly is burned to death—destroyed as completely as Olympia, and not for any apparent crime or reason; she is annihilated in a fire that "began in a cargo compartment where several barrels of turpentine and gasoline were ignited by an unknown cause, and soon exploded" (Villiers, 218). The phrase "unknown cause" implies her death was a tragic accident, so if Hadaly is being punished, it is being enacted by the narrative rather than a force within the story. A probable cause comes to light when we examine the psychology of the narrative and consider the biases and misogyny of the time and the author. Of Hadaly's death, Bailar notes: "Once she exerts her mesmerizing pull on Ewald, Hadaly"s body with Sowana's soul becomes Freud's 'harbinger of death,'... similarly causing a fire that directly or indirectly kills Miss Alicia, Ewald, and Anny Anderson." (Bailar, 37). Perhaps it was for exerting this "mesmerizing pull" and becoming too much like a sinful, flesh-and-blood woman that she was punished by the text. Perhaps it's because she dared to have a will of her own and rebelled against her masculine creator.

Even though they spent so little time together, Ewald mourns Hadaly/Sowana more than he does his organic ex-lover: "My friend, only the loss of Hadaly leaves me inconsolable—I grieve only for that shade. Farewell" (Villiers 219). While we can infer that Hadaly has started to take on some personality and autonomy of her own (due to Sowana's influence) through the secret conversation she keeps with Ewald, he mourns a "shade." He mourns a beautiful thing that he could project himself onto, not the budding intelligence, and he mourns it fiercely. All the projection-screen-women inspire remarkably strong feelings in their admirers, usually to the point of madness: "During these scenes of horror, a strange incident occurred below decks. Lord [Ewald] seized a capstan bar and tried by main force to rush into the flames where the chests and boxes were already burning fiercely" (Villiers 218). The death of his lover Alicia, meanwhile, is hardly on his mind.

In "Uncanny Anatomies/Figures of Wax," Bailar comments on this madness ignited (or fanned) by Hadaly:

> Marie Lathers has similarly suggested that all women exhibit forms of hysteria, which Edison attempts to cure by hypnotising them each in turn. However, the combination of Sowana's occult power, Alicia's beauty, and Hadaly's strong physicality surpasses male domination. It is this hybrid creature that mesmerises Ewald and Edison and in the end reframes both of them as pathological, the one hysterical in his lovelorn yearning, the other in his scientific Madness. (Bailar 36)

In using the word "reframes," Bailar implies that this pathology was already extant in the two men. While Ewald and Edison would be quick to accuse women of driving men to madness, adultery, and suicide, it is much more likely that all of these ideas exist within them already, and a beautiful woman simply a screen on which to project them. Hadaly is made the scapegoat for these men's madness, but she also reveals that the madness was always there.

As we go through these texts, a common thread emerges: the threat of technology becomes tied to the threat of women. In his essay, "The Vamp and the Machine," Andreas Huyssen discusses this idea:

> We can conclude that as soon as the machine came to be perceived as a demonic inexplicable threat and as harbinger of chaos and destruction—a view which typically characterizes many nine-teenth century reactions to the railroad to give but one major exam-ple—writers began to imagine the Maschinenmensch as woman. (Huyssen 203)

We see a prime example of this in *Metropolis*, which features the iconic robotic Maria. This silent film is set in a hierarchical utopian future, where a man named Joh Frederson rules the eponymous city like a businessman. The working class endures backbreaking labor in the bowels of the city while the wealthy frolic in extravagant luxury above. Joh Frederson's son, Freder, meets Maria, a kind woman who consoles the workers and teaches them about unity. Freder learns about the dark, oppressive side of his father's work, while Frederson meets with a scientist named Rotwang. Rotwang has been building a first-of-its-kind automaton in the image of Frederson's late wife, Hel, with whom Rotwang was also in love. Frederson learns of the influence that Maria has over the workers, so he has Rotwang give the automaton Maria's face instead.

The scene in the laboratory where this transformation occurs is a noteworthy moment for the history of cinema and special effects, as the original Maria lies asleep like Snow White under a half-cylinder of glass while glowing rings of light scan her features. The robot, entirely expressionless, is also encircled by these rings of light, and is slowly altered until it takes on the exact form of Maria. All the connotations of Maria—her beauty, her relationships, her status as a pure and delicate creature—are superimposed onto the robot, albeit transformed: the robotic Maria has a twitching eye. This robot begins life as a cold, intimidating automaton who, in the guise of Maria, becomes sultry, chaotic, and out of control. She performs her assigned task of ruining Maria's reputation among the workers, but she actually ends up driving them to violently rise up against Frederson. While his end goal in using her is unclear, it is unlikely that he wanted this strike to occur, so we can infer that this is the beginning of robotic Maria's break from her programming. After riling up the workers, she dances, scantily dressed, in the midst of high society. The men who witness her are driven mad with lust and end up physically fighting for her. There is a lot of doubt as to whether she is entirely in control, and the camera hints to us that she is acting beyond the parameters of her programming. There is a strong focus on her eyes: the actress has an unnerving talent of keeping one eye half-lidded when she plays the robotic Maria, and the heavy eyeliner adds to the effect. This focus creates a sense of threat, it lets the audience know that she is unhinged, and that she is a menace who seduces men into violent and thoughtless deeds—but of course, she is the one blamed for these deeds by the narrative. The out-of-control

woman is a timeless idea; one only has to harken back to the media treatment of Britney Spears during her famous breakdown (or any other female child star) to see how our society reviles and shuns a woman who behaves erratically. It's possible that this effect is in part the fault of stories that equate an out-of-control woman to an out-of-control machine, which was an even scarier thought when *Metropolis* was made than it is now. What's threatening about the "false" Maria isn't that she's a robot, but rather that she's a robotic *woman* who acts out and dances provocatively, making the men around her lose their wits.

In his essay "The Vamp and the Machine," Huyssen insists that the threat of technology is tied to the threat of femininity:

> What is most interesting about *Metropolis* is the fact that in both forms, femininity, imagined as it is from the male perspective, poses a threat to the male world of high technology, efficiency, and instrumental rationality. (Huyssen 206)

While the camera focuses on her dark smirk and sensual eyes, there is nothing so fantastical about this Maria that she alone could influence a person's mind to act violently. No matter what the intention behind her programming is, there is no textual evidence for any powers that could actually drive men to violence, so why is it not the men who are blamed for behaving violently? The narrative camera would have us believe that Maria is manipulating them, that she is the purposeful cause of this physical outburst, but no matter what her intentions are, all she does is dance—and very robotically, at that. What the filmmaker might not want his audience to consider is that these desires and lusts are already within these men and that they are incapable of reigning in their own behavior and emotions. Maria, in her minimal outfit and strange movements, proves to be an effective scapegoat for their feelings and actions.

In addition to this, Freder projects his pseudo-Oedipal fears onto her when, believing she is the real Maria, he sees her embracing his father. Freder then falls into a bout of prolonged and feverish madness as a result of seeing the woman he loves in the arms of his father. It is in fact a rather chaste embrace that could easily be read as paternal, but Maria's ever-sultry eyes would have Freder and the audience believe it is something more. In fact, the wild femininity is an invention of these men. We, the audience, are meant to fear this Maria. Yes, she is a robot gone haywire, which is a theme that can often be terrifying, but she never actually hurts anyone. All the pain and suffering in the movie is caused or imagined by the male characters.

Michael Tritt's chapter "Young Goodman Brown' and the Psychology Of Projection from Studies in Short Fiction" has an apt description of this particular phenomenon of projection:

> Yet the process of projection classically functions to defend the individual from his anxiety. The result is that while guilt persists, it persists only at the subconscious level. Brown's desperation at the end of the story is not primarily, then, the result of a guilt-consciousness but rather originates with the guilt he is unable to recognise and admit. Conceiving of himself as unscathed, Brown obsessively locates the source of his anxieties of those around him. (Tritt 114)

All three men in these scenes take the sins to which they are unable to admit and project them onto Maria. Frederson's corruption and lust for power, Rotwang's desire for Frederson's dead wife and to destroy Frederson, and Freder's own complicated feelings about his father, his connection to power, and Maria—all these are displaced onto the robotic Maria. She is only an automaton, albeit a remarkably advanced one, but she becomes the leading villain of the story until her death. When the movie was made, the audience was supposed to root for this; the film shows her cackling gleefully throughout her death scene like so many burned witches, so clearly we are to imagine her as wicked. Today, however, the scene can inspire a sense of unease. How many people have been vilified because they belong to a group without the institutional power to defend themselves? How many have been blamed for the crimes committed against them?

With the seductress who represents all their insecurities and failings dead, Freder is free from her spell, Rotwang falls to his death, and Joh realizes his wrongdoings and repents. Her death is noteworthy, for it raises questions as to why a supposedly unfeeling robotic creation would have such manic glee over her own destruction. Is this simply the influence of her mad genius creator, Rotwang? Or is there something more to her beyond the wills, fears, and projections of the men around her? As interesting as that would be to explore, this is likely not the case. When robotic Maria's beautiful skin melts away during the witch-burning scene, we see again the cold, stiff, unfeeling android that she had been underneath throughout the entire movie. This implies something surprisingly subtle for this film: that unhinged femininity, rather than out-of-control machines, was the true threat all along.

In this way or another, all three women are burned like witches, because fire is the most violent and destructive force at hand. The deception and reveal of Olympia's eyes contrasts with the focus on the robot Maria's eyes, which are her giveaway. Maria's lopsided, half-lidded gaze and heavy eyeliner lets the audience know that this is not the original Maria. In both cases, the eyes betray the artificial woman's soullessness—the artificial Maria's lack of morality and Olympia's artificiality. Between the two, however, the narrative of *The Sandman* frames Olympia's destruction as a punishment for Nathaniel's projecting onto and idealizing her, whereas the narrative of *Metropolis* punishes Maria for driving men mad. Both destructions are utterly thorough and nearly over-the-top, as we see Olympia torn limb-from-limb and Maria set ablaze. Today, the consequences for a woman who is labeled a temptress, a homewrecker, a slut, or out-of-control are more dire than they would be for the men who committed the alleged crimes.

In the same way that Nathaniel is thrown into madness by this counterfeit woman, the lovers of the other two women are also driven to emotional and psychological extremes. Freder has to be restrained by multiple strong working men in order to keep him from rescuing Maria, and Lord Ewald tries to break into the cargo hold where Hadaly is being kept. The last scene in *Tomorrow's Eve* notes: "He seemed to be in an absolute frenzy to throw himself into the flames" (Villiers 218). Even though he knows full well that Hadaly is an artificial woman, Ewald is not only willing but *desperate* to risk his own life to save her. This "frenzy" echoes Nathaniel "flaring into a furious rage" as well as Freder attempting to climb up the burning pyre to rescue Maria. Of course, if it actually were the real Maria up on the pyre, his desire to save her would make sense, but we can plainly see through shots from his perspective that she is cackling as she burns and moving in that

demonic way he's seen the robot Maria move. Her appearance, therefore, continues to deceive him and drive him into madness. We see this supposed madness today in privileged groups who refuse to learn to control themselves, while oppressed groups must exert extreme control or else be branded as reactionaries and dangers. The real Maria, for example, calls to mind the image of a contemporary woman who must remain unthreatening and reasonable even when fighting an impossible fight for workers' rights, for the credit of the entire movement falls apart if she acts in any way other than sweet and nurturing. We can see this credit dissolve entirely when she is replaced with the robot Maria.

All three artificial women perform their functions exceedingly well, subserviently, and with everlasting "sexual availability," yet they all still must die. What is the crime that suits such punishment? In *Metropolis*, while the narrative camera often focuses on robotic Maria's wicked-looking expression, all she does is dance in minimal clothing and offer the workers the idea of revolt. The men who are enthralled by her dancing end up fighting over her, and we are to assume this is her fault. The workers take up her ideas without organizing properly or taking measures to protect their children, so this must be her fault as well for inspiring such violent feelings. What she does is take their self-control and power away, so she must be punished. In reality, she does nothing to directly harm anyone. The moral ineptitude is already within the men she affects, but the vision of a beautiful woman is the one blamed for their actions.

In *Tomorrow's Eve* by contrast, Hadaly saves Ewald from an unfeeling woman who is using him (according to Ewald). As is stated above, the fire that destroys her appears to be a random accident, but there is likely a narrative reason why she could not survive. Perhaps that reason is her and Sowana's little rebellion, the moment where she asks Ewald to keep their conversation secret from Edison. A robot who was simply meant to be a perfectly obedient and loving doll has started to become her own person, and this book does not have the aptitude to explore the consequences and implications of that. If she is a thinking and feeling person, that makes the noble Ewald her warden, keeping and using a sentient being for his own selfish reasons. It could also be because she represents Eve, and by going against her creator, she has fallen. At the top of this chapter, the quote used is from *Genesis*: "And it repented the Lord that he had made man on the earth, and it grieved him at his heart. And the Lord said, I will destroy man whom I have created" (Genesis 6:6). While Edison has no direct hand in Hadaly's demise, we can see parallels between his creation of Hadaly and God creating mankind. Since Hadaly is becoming something other than what Edison intended, she will be vulnerable to the same sins as humankind. Therefore, she represents the failures of all humans, the man who created her, and the man who loved her, and so she must be destroyed.

So, does the punishment fit the crime? Or is the destruction of these remarkable creations misogynistic overkill? That depends on if these artificial women have anything going on behind the metaphorical projector screen. Bailar certainly thinks so:

> The novel indicates that while [Edison] and the narrator may view Alicia as mundane, Anny as a victimised Madonna, and Sowana as obedient, such perspectives gloss over the complexity and agency of these women. These figures join Hadaly in the uncanny and the

> narratively distanced concluding paragraphs come up for they are not as comfortably knowable as the novel depicted them. (Bailar 38)

While this is truer for *Tomorrow's Eve* than it is for *The Sandman* or *Metropolis*, one has to wonder what could have been if the stories had let us into the mind and perspective of these robots, or if a woman had told the story. These automatons are all incredible breakthroughs in the technology and culture of their world, but because they are painted as evil and unnatural, their potential can never be realized. Could Olympia have become something more than a simple automaton? Could the robot Maria have learned to think for herself? What could the combination of Hadaly's might and Sowana's mind accomplish together? What were they beyond the sins of their creators?

Interestingly, the narrative in the end of *The Sandman* offers something of an answer: the men become so worried about becoming involved in a relationship like his that they actively encourage their partners to behave imperfectly and become bored when listening to their stories, so as to ensure that they are in fact human. As a result of this, "Many love-bonds grew more firmly tied under this regime; others on the contrary gently dissolved" (Hoffman, 122). This is a surprisingly progressive take on relationships, and perhaps shows that in this instance, the artificial woman is not a narrative stand-in for real women, but rather an impossible standard that should not be striven for. It could be argued that Olympia is therefore given the same "homewrecking temptress" treatment as Maria or Alicia, or the same "out of control woman" treatment as Maria and Hadaly, but given how the end of *The Sandman* is much more willing to acknowledge that its flesh-and-blood women characters are flawed people with inner lives, it is possible that there truly is no more to Olympia than what we see.

Each story has a different approach to robotic women, but there are universal truths to all three. Even if we can make inferences about Olympia, the narratives only show us what the male characters project onto these feminine robots, so we can never truly know what, if anything, they could have been beyond that. This omission, however, makes the nature of the robots that much more mysterious. Because the narratives refuse to show the robots outside of a man's perspective, the audience may wonder what they are hiding. These works try to convince us that the threat of women and out-of-control technology warrants a thorough obliteration, but it is clear that these robotic women are simply icons and scapegoats for men—protagonists, antagonists, and authors alike—to exorcise their personal demons. The themes in these works still ring true today. The current environment surrounding misogyny, power imbalances, and rape culture echoes the values these fictional men hold is not the same as it was one or two hundred years ago, but these views of women have remained. Today, at least, this treatment can be deconstructed and challenged. Perhaps it is time to see a story from the perspective of the projection screen and see what truths it uncovers.

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How Egocentric Biases Maintain Social Anxiety: A Literature Review

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ABSTRACT

Biases and heuristics are mental shortcuts that help guide our daily decision making and cognitive processing but can often lead us astray when they account for inaccurate or misinterpreted information. In this review I aim to understand how the spotlight effect (Gilovich et al., 2000), the overestimation of how attentive others are to our actions, and the illusion of transparency (Gilovich et al., 1998), the overestimation of how easily others can discern our internal state, maintain social anxiety by disrupting the anchoring component these shortcuts rely on. Through a detailed analysis of major research conducted by Brown and Stopa (2007) and Haikal and Hong (2010), I was able to synthesize the empirical findings, discuss clinical implications, and propose future directions for research.

As humans we are innately driven by the psychological need to satisfy our ego, the subconscious mediator between impulsivity and morality, but how is the ego influenced when we are put into social situations? The ego, in tandem with many cognitive biases and heuristics, is at work during the decision-making process, but by employing these shortcuts, relative fallacies are often committed, resulting in poor decisions based on inaccurate judgements. Specifically, egocentric biases influence our perception of ourselves and how we expect others to perceive us, which can lead to a distorted and unrealistic sense of self. A strong sense of self is an invaluable tool in navigating our social world because it fosters a positive self-image, high self-esteem, and a more congruent relationship between one's self-image and their ideal self (Rogers, 1974). However, a strong sense of self is often hard to achieve when we commit fallacies associated with egocentric biases. These include the spotlight effect and the illusion of transparency, as they rely on perceived information that is inaccurate. The spotlight effect perpetuates distortion by overestimating how noticeable our actions are when around other people (Gilovich & Savitsky, 2000). In contrast, the illusion of transparency describes how noticeable we believe our internal state is to others (Gilovich et al., 1998). With both biases distorting our perceptions and increasing our self-awareness, they create a clear formula for anxiety. This is concerning for those at risk or currently diagnosed with social anxiety disorder because those individuals already view

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themselves from an incongruent sense of self created by their disorder which is viscously perpetuated by the spotlight effect and the illusion of transparency. To understand the clinical implications of this phenomenon, I will describe and synthesize the findings of the two main studies that currently sustain the body of knowledge specifically addressing these biases in the context of social anxiety.

THE SPOTLIGHT EFFECT

Initially explored by Newell (1957), heuristics are mental shortcuts that simplify the decision-making process by reducing mental effort. He highlights the innate limitations faced in rational decision making, such as taking the time and mental effort to weigh the costs and benefits of all alternatives to produce purely rational decisions, a process most people would not use in their daily lives. Tversky and Kahneman (1982) built on Newell's research and introduced the study of heuristics by proposing three types of heuristics in their initial research: availability, representativeness, and anchoring-and-adjustment. Tversky and Kahneman defined the availability heuristic as a cognitive shortcut used when making probability and frequency-based judgments depending on how easily "available" information regarding the decision is recalled (1982). Similarly, the representative heuristic also employs known information, but instead of recalling specific instances, it uses pre-conceived prototypes, or the subjectively "perfect" mental image of something, to gauge probability (Tversky & Kahneman, 1982). Finally, anchoring-and-adjustment is defined by Tversky and Kahneman as estimating frequency, probability, and value in relation to an implicit reference point, or anchor (1982). They found that people adjust away from the anchor to draw their conclusions, but unfortunately, the initial anchor is often inaccurate, causing erroneous adjustments. A common example of the anchoring-and-adjustment process is observable in car sales negotiation, where the "sticker" price for a used car is often higher than the actual market value of the car. Car sales agents use this to their advantage because negotiations are then in relation to the unreasonably high anchor price, fooling the buyer into believing they are getting a good deal if they can negotiate a price under that anchor. In reality, the buyer is most likely still paying above market value and similar scenarios are not uncommon in the real world, and in our perception of ourselves.

Additional research conducted in 2000 by Gilovich et al. built off of Ross and Sicoly's (1979) research on responsibility allocation which illustrated how individuals are so focused on their own contribution in a joint task that when asked "Who did how much?" they were biased towards their contributions. Gilovich et al. (2000) then proposed a similar effect, the spotlight effect, describing how people judge the salience of their own actions by others. They further supported the spotlight effect through Tversky and Kahneman's (1982) anchoring theory, arguing that an inaccurate anchor causing an insufficient adjustment creates it. Ultimately, the spotlight effect is rooted in our own egocentric nature inflating our perception of our actions, which can become a uniquely inaccurate anchor based on how salient we believe those actions are to others.

THE ILLUSION OF TRANSPARENCY

Similarly, the illusion of transparency is also rooted in Tversky and Kahneman's (1982) anchoring theory. Research conducted in 1998 by Gilovich et al. (prior to their exploration of the spotlight effect) helped expose the mechanics of this concept and its relationship to anchoring. The researchers defined the illusion of transparency as the "tendency to overestimate the extent to which others can read one's internal state" (Gilovich et al., 1998, p. 332). While the spotlight effect is the overestimation of the visibility of our actions in a social setting, the illusion of transparency is the overestimation of how our internal state "leaks" out for outsiders to notice. For example, if you were in a hurry to walk to class and trip on the sidewalk, you may feel embarrassed, which then becomes the anchor situational adjustments are made from. How noticeable to others you believe your fall to have been is distorted by the spotlight effect, but if you believed others knew you were embarrassed by it, this would be the illusion of transparency at work. It is important to distinguish that the spotlight effect disrupts external perceptions, while the illusion of transparency affects internal perceptions.

In addition to defining the illusion of transparency, Gilovich et al. (1998) also found that those who are highly self-conscious, giving them a heightened emotional anchor, had increased experiences of this bias. They also concluded the illusion of transparency was exclusively present when experiencing obvious emotional states such as nervousness, disgust, and alarm (Gilovich et al., 1998).

Gilovich et al. can ultimately be credited for their influential, formative research and exploration of these egocentric biases highlighting the need to understand the spotlight effect and the illusion of transparency because they help us define ourselves in social settings (1998, 2000). In relation to social anxiety, further research that I will discuss has explored the negative effects of these biases on anxiety because of their heavy reliance on our unique phenomenological experiences as an anchor.

SOCIAL ANXIETY

Previously known as social phobia, social anxiety disorder (SAD) is not uncommon (12.1% lifetime prevalence) to the general population where over 15 million American adults, or 6.8% of the U.S. population, are affected by it during any 12-month period (ADAA, 2020). The DSM-IV defines SAD as "a persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. The individual fears that he or she will act in a way (or show anxiety symptoms) that will be embarrassing and humiliating" (American Psychiatric Association, 2013, p. 202). Along with SAD inhibiting healthy functioning in social settings, it also makes those individuals more vulnerable to other clinical disorders like major depression and substance abuse (Ohayon & Schatzberg, 2010; Randall et al., 2001). In addition, researchers have found the estimated number of feared social situations determined by an individual with SAD to be associated with comorbid major depression and suicidal ideation (Gabalawy, Cox, Clara, & Mackenzie, 2010). Therefore, it is vital to explore possible cognitive vulnerabilities that sustain SAD because it can lead to other clinical disorders with similar or overlapping symptoms.

Current cognitive-behavioral models of SAD argue that its development results from the use of self-focused information to predict what others think of them (Clark & Wells, 1995), which is notable because both the spotlight effect and the illusion of transparency can then manifest from inaccurately assessed self-focused information. Research conducted by Brown and Stopa (2007) and Haikal and Hong (2010) suggests those with SAD use a heightened emotional anchor, based on a distorted internal appraisal caused by the spotlight effect and the illusion of transparency, which perpetuates the cyclical nature of anxiety.

PRIOR RESEARCH

THE SPOTLIGHT EFFECT AS A MAINTAINING FACTOR

A study conducted by Brown and Stopa (2007) aimed to explain how the spotlight effect and the illusion of transparency hinder the construction of a healthy sense of self by distorting internal and external appraisals in those with social anxiety. To do so, they recruited participants from a population of students at the University of Southampton who self-reported scores ≥36 on the Brief Fear of Negative Evaluation Scale (BFNES: Leary, 1983). This cut-off point corresponded to the mean BFNES score and produced a sample of 60 participants who were moderately to highly socially anxious. The BFNES specifically measures fear of negative evaluation, which is a prominent component of social anxiety (American Psychiatric Association, 2013). In addition, self-reported presence and severity of depression over the previous two weeks were measured during the screening process using the Beck Depression Inventory-II (BDI-II: Beck et al., 1988), a valid instrument measuring depression symptom, producing a sample in the mild to moderate range.

A randomized between-subjects design was constructed, meaning each participant was randomly exposed to one condition in order to minimize learning effects, which would skew the results of the manipulation. Experimental conditions included either low or high social evaluation, where all participants performed a memory task and were told a group of experts would evaluate their task performance. Those in the high social-evaluative condition were openly videotaped, while the low social-evaluative condition was secretly recorded. After finishing the task, participants completed the BFNES and the BDI-II again, as well as the Self-Awareness and Task Performance Questionnaire (SATP-Q; Brown & Stopa, 2007). The SATP-Q was administered to measure the spotlight effect and the illusion of transparency by including a modified version of the Situational Self-Awareness Scale (SSAS; Govern & Marsch, 2001), which measures public and private self-awareness, as well as items regarding task performance. Finally, an independent assessor blind to the experimental conditions watched the recordings of the task and completed the assessor's version of the SATP-Q to compare participants' self-rating of public and private self-awareness with the assessors' rating of how well they could distinguish participants' self-awareness concerns during the task. To quantify public self-awareness, assessors rated how nervous participants appeared during the task and how poorly they performed in the task and quantified private self-awareness by rating how easily they could discern the participants' thoughts and feelings.

To analyze the presence of the spotlight effect and the illusion of transparency, difference scores were calculated by subtracting participants' self-awareness scores on the SSAS items of the SATP-Q from the assessors scores on the same measures, such that higher positive differences would reflect higher levels of each bias. Using statistical analyses, the researchers found that participants in the high social-evaluative condition reported significantly higher levels of the spotlight effect than the low social-evaluative condition (Brown & Stopa, 2007), consistent with their hypothesis. However, they found no significant difference in levels of the illusion of transparency between conditions (Brown & Stopa, 2007). Further analyses found a significant difference between both biases for the high social-evaluative condition, such that the spotlight effect had a greater impact than the illusion of transparency, while participants in the low social-evaluative condition reported higher levels of the illusion of transparency compared to the spotlight effect, although this was not a significant difference (Brown & Stopa, 2007). In sum, the spotlight effect was only significantly present in the high social-evaluative condition, while the illusion of transparency was not significantly influenced in either condition (Brown & Stopa, 2007).

This study aimed to explore the extent to which socially anxious individuals overestimate how noticeable their internal and external state is to others. The findings expanded Gilovich et al.'s (1998, 2000) research, indicating and describing the presence of the spotlight effect and the illusion of transparency in non-socially anxious individuals, by concluding that these biases are present in socially anxious individuals to a higher degree (Brown & Stopa, 2007). However, because of its consistency across social evaluative conditions, and contrary to Gilovich et al.'s (1998) idea that the illusion of transparency is a transitory state able to be manipulated, Brown and Stopa's (2007) findings suggested the illusion of transparency is more trait-like. That is, it would precede and predict anxiety rather than resulting from it, which with replication can have clinical implications in our understanding of social anxiety. Moreover, they propose the fear of public scrutiny, an indicator for SAD, increased focus on private self-awareness, which could explain the significant levels of the spotlight effect. Specifically, Clark and Wells (1995) found that socially anxious individuals form high standards for social performance, used as an inaccurate anchor, which leads to the belief that they cannot communicate a positive impression to others. Therefore, high socially evaluative contexts as highlighted in the current study leave socially anxious individuals more susceptible to high levels of the spotlight effect. The spotlight effect, more so than the illusion of transparency, acts as a vehicle for public and private self-awareness to stray from a healthy conception of the self as a social object such that it perpetuates the vicious cycle of social anxiety.

While Brown and Stopa's research (2007) provided speculative implications for the clinical understanding of social anxiety, the preliminary nature of their study included several limitations. First, their sample was limited to women, which makes it impossible to know if these findings are generalizable to men. There is a known meaningful difference between men and women, as women tend to be more prone to social anxiety (Caballo et al., 2014), so it could be argued this gender difference affects the presence of the spotlight effect and the illusion of transparency. Similarly, the sample was also limited to a student population, with a mean age of 19 years old,

which does not allow for the examination of age-based effects. To combat these generalizability issues, the researchers proposed replication and recommended a more representative sample, possibly including several different social situations and clinical populations.

THE ILLUSION OF TRANSPARENCY AS A MEDIATOR

A study conducted by Haikal and Hong (2010) looked more specifically at the potential mediating effects of the spotlight effect and the illusion of transparency on the relationship between the fear of negative social evaluation (FNE) and looming cognitive style (LCS). To do so, they recruited undergraduate students from an existing pool who had previously participated in a related study at the National University of Singapore. During that study, self-reported data measuring FNE was collected using the Brief Fear of Negative Evaluation Scale (BFNE; Rodebaugh et al., 2004), a modified version of Leary's (1983) BFNES removing reverse-scored items to increase reliability and validity, and baseline LCS data was gathered with the Looming Maladaptive Style Questionnaire (LMSQ; Riskind et al., 2000). From this pool, the top 80 combined scores on the BFNE and the LMSQ were invited to participate in Haikal and Hong's (2010) study, creating an overall moderate- to high-risk sample of 52 participants.

The researchers utilized a 2 (social evaluation: low versus high) x 2 (temporal looming: low versus high) randomized between-subject design, which allowed experimental manipulation of both social evaluation and looming threat, permitting them to explore possible interaction effects caused by the spotlight effect and the illusion of transparency on anxiety symptoms. In other words, participants were randomly assigned to the high or low social evaluation condition and either the high or low temporal looming condition. Prior to the experiment, participants were re-administered the BFNE and LMSQ to examine the stability of their scores, as well as measures to assess current mood and anxiety levels. The mean BFNE score in the sample was comparable to individuals diagnosed with SAD (Weeks et al., 2005), and the mean LMSQ score was lower than that of previous clinical samples (Riskind et al., 2007), but slightly higher than typically reported in normal samples. Anxiety levels were self-reported using the Beck Anxiety Inventory (BAI; Beck et al., 1988). Finally, after completing the task, participants in all conditions were asked to complete the same modified version of the SSAS utilized by Brown and Stopa (2007) to measure levels of the spotlight effect and the illusion of transparency.

All participants were tasked with performing a three- to five-minute-long speech introducing themselves which was video-recorded. However, the high social-evaluation condition was told their recordings would be evaluated by a group of communication experts and were shown how they would be recorded which was purposefully, but unknown to subjects, in an "up close," zoomed-in manner to evoke the belief that they would be closely evaluated (all cameras were later adjusted to be less zoomed-in after showing the participants so the recordings could be standardized). In contrast, the low social-evaluation condition was given the same speech task but were not told their recordings would be evaluated, and after the experiment, they were shown the standardized camera zoom instead of the close-up angle.

Further, in the high temporal looming condition, the participants were told they had two minutes to prepare their speech and were given a digital stopwatch to increase the salience of temporal looming. After preparing they were asked to complete the BAI again. To standardize time between the conditions, this group was told there was an issue with the cameras and that they could further rehearse their speeches during the time researchers spent fixing it which allotted them a total of four minutes to prepare. The low temporal looming condition was told they would have some time to prepare but was not told specifically how long, and after giving these instructions, the researchers left the room for two minutes. Upon their return, they instructed participants to complete the BAI, after which they were told they would have an additional two minutes to prepare.

Statistical analyses of the data collected presented several interesting findings regarding the spotlight effect and the illusion of transparency. First, ANOVA analyses, which are commonly used to interpret and compare effects of more than one independent variable, found significant main effects of social evaluation and temporal looming on both the spotlight effect and the illusion of transparency (Haikal & Hong, 2010). Specifically, participants in the high social evaluation condition showed higher levels of the spotlight effect and the illusion of transparency in comparison to the low social evaluation condition (Haikal & Hong, 2010). The same was found in the temporal looming conditions (Haikal & Hong, 2010). In other words, heightened fear of social evaluation and/or heightened temporal looming creates a context for both the spotlight effect and the illusion of transparency to become significantly present. Next, interactions between independent variables were investigated, and the researchers found an interaction between social evaluation and temporal looming significant in predicting residual change in BAI, which is calculated by finding the difference between baseline BAI and task BAI (Haikal & Hong, 2010). This means when combined, high levels of social evaluation and high levels of temporal looming are predictive of increased levels of anxiety. The researchers also analyzed the relationship of residualized BAI to levels of the spotlight effect and the illusion of transparency and discovered a moderate positive correlation for both biases (Haikal & Hong, 2010). This indicates that those experiencing increased levels of anxiety also experience increased levels of the spotlight effect and the illusion of transparency. However, because these relationships are present between the dependent variables of the study, regression analyses were utilized to discern if these biases had significant mediating effects, meaning they could explain the relationship between the experimental manipulations and residual change in BAI. Among the four cases where significant mediating effects could occur, only the illusion of transparency mediated the evaluation x looming interaction on the residual change in BAI (Haikal & Hong, 2010). Therefore, the illusion of transparency explains how combined factors of socially demanding situations, FNE and LCS, predict heightened social anxiety.

Haikal and Hong (2010) ultimately expanded the findings of Brown and Stopa (2007), where it was found that higher levels of the spotlight effect are present in socially demanding contexts for those with social anxiety, by investigating the mediating effects of the spotlight effect and the illusion of transparency on the relationship between situational demands and anxiety levels. Their findings that higher levels of the spotlight effect are present in high social evaluative settings is

consistent with the conclusions drawn from Brown and Stopa (2007) and highlights similar evidence that explains higher levels of the illusion of transparency being present under increased fear of negative social evaluation and temporal looming. However, little was found to support the hypothesis that the spotlight effect also had mediating effects, which the researchers argue could be because of the complex method used to calculate the difference in SSAS scores between participants and assessors, which could have masked more subtle effects. Further, in agreement with Gilovich et al. (1998), the findings of the present study support the idea that both biases stem from the anchoring-and-adjustment heuristic and argue they work to distort anchoring to a higher degree in socially demanding situations. Additionally, the interaction between social evaluation and temporal looming sustains Hirsch et al.'s (2006) combined cognitive bias hypothesis which proposes cognitive vulnerabilities may influence each other in the maintenance of a given disorder. While relatively new in social psychology, it is plausible that the spotlight effect and the illusion of transparency, based on Haikal and Hong (2010) and Brown and Stopa's (2007) research, play an important role in maintaining the social anxiety symptoms across both clinical and at-risk populations. Clinically, this implies socially anxious patients should be taught their perceptions are negatively distorted by these biases in order to decrease their influence on the cognitive vulnerabilities that underlie and maintain social anxiety.

While this study provided the necessary evidence to support and build off of the prior research mentioned, it presented several limitations. In comparison to Brown and Stopa's (2007) limitations, Haikal and Hong (2010) also faced the problem of generalizability due to their female undergraduate sample creating gender and age constraints. Secondly, the sample size was small (52 participants) due to a relatively weak return rate, creating the need for replication to validate their findings. Another issue with Haikal and Hong's (2010) sample comes from cultural differentiation in that the sample was composed of Asian identifying individuals; it is known that social anxiety is less common in Asian cultures than in traditional western cultures (Hofmann & Hinton, 2014) which further illustrates the need for replication. Despite these limitations, their study added vital insight about the spotlight effect and the illusion of transparency in relation to social anxiety.

FUTURE DIRECTIONS

The findings described have laid the groundwork for understanding the impact the spotlight effect and the illusion of transparency have on socially anxious individuals, and several studies have since broadened the scope of this topic. For example, studies have looked at different clinical techniques to decrease the effects these biases have on social anxiety. Specifically, Macrae et al. (2016) found that altering mental imagery by having participants in their study imagine an upcoming social situation in third person reduced the spotlight effect and, as a result, anxiety levels. Additionally, both Brown and Stopa (2007) and Haikal and Hong (2010) suggested the video-feedback technique (Harvey et al., 2000) could be useful in cognitive-behavioral therapy (CBT) for social anxiety. Harvey et al. (2000) created it to provide corrective feedback for those experiencing social anxiety to alter their negative self-appraisals. Today video-feedback techniques have improved, and it is now a common tool for combating social anxiety symptoms

(Shirotsuki, 2018). While mental imagery and video feedback have clinical implications known for decreasing anxiety, there is a lack of research on its usefulness in specifically decreasing the spotlight effect and the illusion of transparency. By exploring ways in which these biases can be decreased, the clinical implications can be generalizable to situations where they are present.

Moreover, the spotlight effect and the illusion of transparency in clinical disorders may be related to issues of comorbidity (Hirsch et al., 2006). That is, if these biases are found to help maintain different disorders, then decreasing bias effects could promote therapeutic effectiveness in treating comorbid disorders, which is when two or more disorders are present in an individual. For example, there is a prospective relationship between social anxiety and eating disorders (Levinson & Rodebaugh, 2016), reliant partially on high FNE, increasing the spotlight effect and the illusion of transparency (Haikal & Hong, 2010), that could be more effectively treated given further research regarding the combined cognitive bias hypothesis (Hirsch et al., 2006) and comorbidity.

Research conducted following both studies described in this paper highlight a) potential therapeutic techniques that decrease these cognitive vulnerabilities and b) the idea that these vulnerabilities could be implicated in comorbid disorders. Yet replication to support the validity of Brown and Stopa's (2006) and Haikal and Hong's (2010) is still necessary. It is highly recommended that replication occurs to better inform and support the current scope of the topic as above-mentioned.

In conclusion, the spotlight effect and the illusion of transparency are instrumental in the maintenance of social anxiety, proving the importance of broadening the related body of knowledge to gain a better understanding of how and to what extent they are damaging to a healthy sense of self in comorbid clinical populations. As social beings, perception is the greatest tool we have in navigating life, but distorted perceptions can become detrimental to one's wellbeing.

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The Anthropocene Commons – A New Paradigm of Scale Variance: Commons Frameworks and Climate Change Theory

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ABSTRACT

The term Anthropocene, denoting the era where human activity is the greatest influence on the environment and climate, marks a new era of climate change theory and understanding. This paper, though, looks at existing promising works surrounding the Anthropocene and argues that the dialogue lacks holistic conceptions of agency and spatial and temporal scale variance in order to fully grasp its complexity. Agency refers to the flawed understanding of the Anthropocene as simply human without consideration for other assemblages, which denotes the other stakeholders apart from humans. Temporal scale refers to the need for a varied consideration of time and the creation of assemblages. Spatial scale refers to the different levels of interaction (national, international, socioeconomic. This understanding of scales, or scale variance, relies on Derek Woods' theory that multiple scalar levels are necessary to encapsulate the Anthropocene. This paper will approach scale variance by constructing the Anthropocene Commons model. The model, based its theoretical framework on Garrett Hardin's Tragedy of the Commons on resource, will utilize the three levels of scale absent in other scholarship. The paper will examine other models used to address climate change and discuss their lack of the necessary scope and holistic framework and how their prescriptions for addressing climate catastrophe fall short. Using scale variance in the Anthropocene commons, then, will seek to correct it and offer a standardized but flexible framework to better address the ongoing and impending crisis.

1. INTRODUCTION

Climate change threatens not only humans, but our entire ecosystem and the many different stakeholders within it. Choosing a scope, then, when discussing climate change or the environment in general is a difficult task. Seeking to both examine current models and frameworks and ultimately propose a new one, this paper begins by looking at Garrett Hardin's Tragedy of the Commons. A paper published in the mid-twentieth century, its discussion of resource preservation and humanity's role in it has served as inspiration for many frameworks

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that seek to encapsulate the environment and climate change. However, the scholarship lacks scale variance, a term coined by Derek Woods that denotes the different lenses with which one analyzes different environmental issues. Linear scale, for example, refers to a dialogue that is restricted to just one scale. After examining Garrett Hardin's commons, this paper looks at other scholarly uses of the commons and examines how spatial, temporal, and agency scale variance, defined earlier, are necessary to creating a holistic approach to the Anthropocene given the commons' shortcomings. As a result, the paper extracts the value of the commons, which is its theoretical ability to focus on human behavioral changes—a facet of the commons that the paper will show is crucial to fighting climate change. From there, the paper will use the constructed model and apply it to scholarship on different climate catastrophes and environmental structures, examining how the Anthropocene Commons can foster more inclusive dialogue than the current human-centric approach, and how that leads to better policy outcomes. This culminates in the model's application to climate change. Looking at the 2018 United Nations' report on future climate change, the paper will apply scale variance critiques and suggest how the Anthropocene Commons' use of scale variance is necessary to fundamentally change the way humanity approaches the environment.

2. INTRODUCING AND EVALUATING THE TRAGEDY OF THE COMMONS

The subject of the Anthropocene can be framed through Garrett Hardin's Tragedy of the Commons. Through his concept of the commons, Hardin begins by framing ecological preservation. Due to Earth's limited resources, he conceives of a pastoral common ground, the commons, rich with resources, foreshadowing a moment when overpopulation leads to a "tragedy" where "freedom in a commons brings ruin to all" (Hardin, 1244). He argues that in the postindustrial era, humans not only exploit the commons and deplete it of its resources, but they pollute it as well. Hardin then arrives at the crux of his argument, claiming that government can solve this issue by creating private property and "coercive laws" (Hardin, 1245). Establishing private property and laws, a neoclassical approach, is a mechanism that he believes best manipulates human behavior to fulfill a certain public necessity – in this case, preservation. Accordingly, he predicates this proposal on the notion that "the optimum population is… less than the maximum" (Hardin, 1244). However, population cannot be decreased, so he instead turns to inducing behavior changes. Though Hardin's commons problem regards overpopulation, it parallels climate change theory dialogue as they both revolve around resource consumption and depletion. Indeed, climate change, too, is exacerbated by population, but the core mechanism of resource consumption and depletion is central to its dialogue. A common example is coral reef destruction. Coral reefs are essential to maintain many biomes and ecological chains that humans benefit from, but human exploitation of resources depletes coral reefs and subsequently exacerbates climate change (USDC). Just as Hardin's commons can be reduced to overpopulation, the same can be done with coral reefs: the needs of a growing population have led to increased pollution. But population is, for good reason, not a flexible mechanism. To address climate change, one must address human behavior. Thus, in the same way that Hardin calls for "coercive laws," legislators create regulations on pollution and ocean exploitation to protect the reefs. The commons as an abstract land with resources and stakeholders that use them thus becomes a

framework for resource pollution and consumption and prevention. As this paper will later look to apply the Commons to climate change, it is essential to understand their common denominator: solving the issue of resource scarcity requires a catalyst to modify human behavior.

However, Hardin's framework of the commons and the need for regulation is imperfect, as his theoretical prescriptions do not align with the reality of social hierarchy. One can see such issues when applying Derek Woods' concept of scale variance. The flaw is visible when examining Hardin's strikingly radical stance on free will and the role of the state with regards to population; he finds that "mutual coercion" of citizens by the government can be a mechanism to reduce the damage done to the common resources (Hardin, 1247). Woods would rebuke Hardin's assertion by looking at how his argument collapses at the society level scale when social stratification is considered. Hardin fails to acknowledge class differences and how they would affect his solution; advocating for coercion in societies with oppressive social structures would result in the government disproportionately exploiting the poor with the rich reaping the rewards. Even today, environmental regulations in the United States are far less restrictive in lower income areas. Looking at 30 hazardous waste sites, researchers at the University of Michigan and Montana found that regulations on waste did not ultimately deter behavior, but instead incentivized polluters to place their waste sites in less affluent areas (Erickson). Working at the scale of "man's population problems" for the entirety of the paper allows Hardin to articulate a capitalist-driven solution to pollution but compromises his ability to discuss the nuanced effects of introducing a theoretical constraint to a hierarchical dominated society.

In Derek Woods' paper, "Scale Critique for the Anthropocene," he highlights elements of Anthropocene dialogue that is "linear" in scale, arguing that much scholarship on the subject fails to consider a holistic perspective, opting instead to focus on a singular level or scale. One issue of dialogue he notes is that "effects of human action at the scale of global population become a collective subject figured as an individual…" (Woods, 5). Applied to Hardin's commons, this use of scale generalizes the classes of human behavior, as he fails to consider that regulations affect individuals differently based on their social class, race, and more. The scalar issue, then, ignores true polluters who would benefit from Hardin's theory. As he considers humans as a generalized entity, lacking acknowledgement of class disparities makes his analysis incomplete and linear in scope. The linearity of Hardin's commons highlights the need for scale variance to address resource issues and ultimately climate change; different stakeholders cannot be generalized without serious ramifications to solutions and regulations. Woods agrees, writing that "scale variance [is the rule…to understanding climate change" (Woods, 4). Hardin's flaws, then, become an issue of spatial scale; analyzing government regulation at the national level cannot simply address a general 'human' behavior. Instead, it must operate on individual, local, national, and global scales, for example, to even attempt to encapsulate its full effect and utility. As such, Hardin offers a compelling solution but is limited by a singular scale for the entirety of his proposal.

Looking at Mark Giordano's 2003 revisioning of Hardin's work highlights how lacking spatial scale within the commons misrepresents the Anthropocene. Straying from Hardin's linear analysis of "mutual coercion," Giordano asserts that "the nature of the commons problem for any particular resource depends in part on the scale at which it is assessed" (Giordano, 365). In

tandem with Derek Woods' framework for holistic representation, Giordano's examination of the commons with regards to the Pacific Salmon Treaty highlights the need for scale variation. The treaty, which defines the responsibilities and rights of each stakeholder regarding salmon management, parallels the objectives of the government regulation that Hardin discusses to influence human behavior, as they both attempt to mandate certain acts to protect a public good. Despite these parallels between Hardin's and Giordano's work, Giordano begins to consider scale as he finds that the mandate led to further debate on how each domestic "commons" interacts with the Salmon Treaty. The flaw of the treaty's framework was its focus around international issues rather than domestic. Indeed, while regulations operate at a national scale, allocation impacts individuals and smaller scales of groups – commons dialogue must address all scales to fully encapsulate the effects of the treaty. Thus, Giordano's discussion of the treaty fails to eclipse Hardin's linear flaws; he, too, operates at a generalized scale that limits his commentary. Giordano's attempt to consider scale by choosing an international scale is insufficient. The issue is not picking the right scale; instead, it is simultaneously representing all scales in the discussion of the commons.

The Pacific Salmon treaty clearly demonstrates this need for spatial scale variance. Considering this particular resource dilemma demonstrates that privatizing and defining property rights within communities leads to heterogeneous effects. These rights, then, must consider various "sociopolitical scale[s]s if its effects are to be fully encapsulated (Giordano, 367). On a large national scale, exclusion of access becomes the primary concern of resource distribution as they are currently public goods, while scaling down to the household requires additional consideration of interpersonal relations as "access and use are limited to a defined set of individuals" (Giordano, 367). Without one scale or the other, one's understanding of the issues within this particular commons issue would be incomplete; this understanding of scalar perspectives becomes essential in framing a new "commons." As the paper will show, climate change theory requires a model that can represent multiple tiered issues. Thus, the commons requires spatial scale to properly represent the Anthropocene.

3. AGENCY AND TEMPORAL SCALE IN THE COMMONS

Both Giordano and Hardin's commons highlight the need for agency scale to be considered within the commons. As mentioned previously, Hardin's prediction of the tragedy within the commons is bleak; he makes the conclusion that "the optimum population is…less than the maximum" (Hardin, 1244). His argument is valid as he acknowledges the necessity of action, but his entire discussion places humans at the center of agency throughout the paper. The implications of anthropocentric arguments are severe. The Pacific Salmon Treaty from Giordano's work functions as an example of this; working at the international scale not only lacks acknowledgement of smaller communities, but it also fails to discuss other species and assemblages that are dependent on the river's current ecosystem. Hardin's work is guilty of the same human-centric argument. He predicates his discussion on the "United Nations' decision that "the family [is] the natural and fundamental unit of society" (1246), reaffirming that discussion of the commons and resource consumption is solely human-based. As a result, his discussion of

the Anthropocene falls into the common trap of placing human patterns and the nuclear family in the foreground of a much broader issue of resource depletion in the entire ecosystem.

Indeed, while Hardin is correct in that human actions are primary mechanism of change in the Anthropocene, the consideration of stakeholders within the commons should be beyond humans. Different levels of scale further the discussion beyond Hardin's work, showing that "terraformers are also non-humans such as cows, genres, oil computers…the oil industry…and corn cultivation." (Woods 8). Imbued within Hardin's depiction of overpopulation is simply an analysis of human action that fails to properly represent the issue of the commons. However, many defend Hardin's lack of temporality by pointing out the fact that Hardin's piece was written in the 1950s, the Cold War era when American families were the forefront of legislation and representation. Though that may have played into Hardin's analysis and focus on the relationship between government and citizens, looking at commons representations a half-century later tells the same story, suggesting that it may be a systemic issue of dialogue.

Agency and temporal scale are intertwined; time has introduced new non-human stakeholders, or terraformers, into the commons, and an approach to agency scale must account for that instead of solely considering humans. Indeed, Derek Woods articulates, "we are no longer able to think history as exclusively human, for the very reason that we are in the Anthropocene" (Woods, 8). As Anthropocene logic highlights the fact that humans have a direct impact on the ecological landscape, their introduction of new "terraformers" within assemblage theory, which denotes the evolution of human and world activity, means that what needs to be considered within the commons goes beyond humans. Scale variance of time, or temporality, is thus necessary to be able to holistically account for such a drastic change in the commons. This is essential as this paper is proposing the application of the commons to climate change. Like the commons, current discussion of climate change inevitably requires considering human and government action, but as climate theorists would argue, that is only one scale from which to view the "tragedy of the commons". It is essential, then, to consider how Hardin's analysis of human agency within the commons is problematic. He predicates his paper on theories of Smith's rational individual as he writes, "decisions reached individually will, be the best decisions for an entire society" (Hardin, 1244). Such a statement becomes problematic as it assumes humans are entitled to make changes on behalf of society, or as Woods would put it, it regards humans as the "subject of liberalism and consumer-cum-geoengineer, capable of customizing the Earth" (Woods, 5). Hardin runs into the complex nature of writing about the Anthropocene as he fails to acknowledge its implications that our species history is not solely limited to humans. Hardin's linear scale throughout the essay prevents him from escaping this issue as variance of the lens "avoids assimilating the subject of the Anthropocene under the universal sign of species" (Woods, 7) and allows for multiple considerations of the effects of human agency in our ecological climate.

Mark Giordano's work, though it points out the issues of spatial scale with Hardin's commons, lacks proper scale variation of temporality and agency to represent the Anthropocene. As he describes issues with selecting the right spatial scale with commons issues, he focuses solely on human interaction *within* nature, rather than *with* nature. Giordano's work surrounding pollution only considers international consequences rather than considering nature itself as a

victimized terraformer. He writes, "Americans tended to pollute their downstream neighbors, whereas Canadians 'tend[ed] to pollute themselves,'" creating an "economics" issue (Giordano, 371). To engage only with the human and economic sides of pollution within the commons limits Giordano's discussion, as he does not acknowledge the various other terraformers and stakeholders, like biodiversity and the water ecosystem, within the varying pollution patterns of nations. Thus, Giordano comes short in his assertion as he lacks acknowledgment that the discussion of the Anthropocene is not simply about scale among humans, but rather a holistic consideration of all terraformers. Without addressing the shift and growth of other terraformers in his scenarios, he lacks the temporal consideration of other "assemblages" (Woods) that would add another layer on top of his assertion. His analysis focuses solely on "sociopolitical scale" (Giordano 365), rather than extending the boundaries of his commons to the growth of both species and other factors as well. Regardless of the time period, both Giordano and Hardin's analysis revolve around an anthropocentric framework of human behavior, showing how the commons still has not begun to account for the growth of its boundaries for all of assemblage theory. The commons necessitates consideration of temporality and agency, acknowledging changes that occur within the ecological landscape and the terraformers within the space. The implications of not doing so are disastrous; considering environmental reform without considering the environment is counterproductive to the original intent of altering the status quo.

4. THE UTILITY OF THE COMMONS

Despite these issues, the commons' consideration of human behavior highlights its foundational position within climate change theory, as both have traditionally attempted to alter human activity. Matthew MacLellan writes in his paper, "The Tragedy of Limitless Growth: Re-interpreting the Tragedy of the Commons for a Century of Climate Change," that the commons becomes a more effective model when it considers changing human behavior rather than simply arguing for governmental regulation, as climate change cannot be fully addressed by the latter (MacLellan, 42). Precisely, Hardin's framework of government regulation to solve the world's issues of resource depletion is not particularly insightful because many political obstacles have inhibited attempts to decrease global carbon emissions (MacLellan, 43). Indeed, this reading of his work, which has become the framework for other commons interpretations, does not account for the need for scale variance in order to represent the resources that are corrupted when subjected to market economics (MacLellan, 42). Hardin and Giordano's proposals thus become far more ineffective; proposals based in "capitalist imperative for limitless growth" consider only human agency, lack consideration for the spatial dimensions of their proposals, and do not account for the transgenerational changes in the ecological landscape. The question then becomes, why is the commons necessary? There must be utility to the model, as Garrett Hardin's introduction to consumption and conservation of resources in 1958 had major political implications and impacts, leading to the foundation of the World Bank and IMF policies (MacLellan, 42).

The utility, then, is in Hardin's paradigm construction, which builds a model based on the scarcity of resources due to human behavioral patterns and the need to conserve them. Reading

the commons without the political restriction and privatization that created spatial, temporal, and agency issues reframes environmental degradation not as an issue of property but instead a problem of growth, meaning that changing human patterns is the key to avoiding the tragedy of the commons, not property allocation. Instead, reading the commons as a model of growth accounts for the scalar needs of "a truly global environment crisis that doesn't respect political borders or property lines," allowing for responses beyond "scientific marvel alone" (MacLellan, 43). Without an explicit response rooted in government action, Hardin and Giordano's commons read as a "tragic" mode, meaning that they highlight the inevitability of the "tragedy of the commons" if the patterns of "rational" human activity continue as they do (MacLellan, 52). The theory of the commons, an abstracted model of a space damaged by exploitation, is ultimately a tool for imagining how human action has led to the impending threat of resource depletion, but even beyond MacLellan's reading, how human species are one of many terraformers that must be considered when responding to such a layered threat. When adding spatial, temporal, and agency scale to the commons, it becomes a model beyond government action, calling instead for fundamental changes in humanity's values or conceptions of morality (MacLellan, 57). One can see the symbiotic relationship beginning to form between the commons and climate change theory; climate change theory needs a mechanism to represent responses that are more complex than simple market and regulation-based approaches, while the commons would become a more accurate model if it applied scale variance to become a more holistic representation of the Anthropocene.

5. THE ANTHROPOCENE COMMONS: A NEW COMMONS FRAMEWORK

Having established the theory of the commons as the foundation of the Anthropocene's dialogue, this paper will now begin to formulate its design. Timothy Clark's concept of three scales provides an applied framework for the commons to build on. In "Climate Change, Scale, and Literary Criticism: A Conversation," Michael Clarke and Faye Halpern discuss the utility of Timothy Clark's derangements of scale, specifically with the variance between the individual, national, and hypothetical scale. As they discuss certain pieces of literature that engage in dialogue with climate change, the commons and the pieces form a parallel: both require scale variance in order to accurately represent the Anthropocene and the commons. This paper has identified three categories of scale as issues within the commons: temporal, spatial, and agency. The issue of spatial scale aligns with Clark's distinction between the individual and national, demonstrated through Giordano and Hardin's shortcomings when lacking spatial scale variation. Hardin lacks discussion of how developments at the national level affect the sociopolitical levels, while the combination of national and individual in Clark's work allows for discussion of the "immediate circle of family and acquaintances" and their "plac[e]…in the cultural context" (Clark, 5). Thus, creating a holistic representation through the commons could be achieved by creating a distinction between scales of individual and the national, similar to Clark.

Furthermore, Michael Clarke and Halpern articulate that "global warming requires us to change the way that we think about human agency," meaning that the Anthropocene is beyond just human discussion, similar to Woods' assemblage theory that can be used to point out key

flaws in Giordano and Hardin's commons (Clarke & Halpern, 9). Certain dialogue surrounding action on climate change, such as Giordano's exploration of household and national policy, leads to "fantasies of agency," such as suggestions that the market or a number of regulations are sufficient to solve such a crisis, and thus limit the very purpose of discussing the Anthropocene and climate change theory (Clarke & Halpern, 9). The commons, as Woods would agree, should not only be discussed on various scales of human interaction but also at the level of species and assemblages as well. Timothy Clark's third scale becomes useful here, as it illustrates a long-term and abstract framework that considers far more than the individual or national scales. Giordano struggled with accounting for the changes occurring to the commons in the postindustrial era and focused solely on the national and sociopolitical scales. With that, the third scale could "highlight the alarming factors that reduce human agency's impact…while simultaneously implicating it," (Clarke & Halpern, 15) leading to a more nuanced discussion of the Anthropocene, as it begs the question: who or what must be considered in the commons other than humans? Thus Giordano and others could use the third scale to "[become] aware of the work of nonhuman players in the environmental change and of the limits of individual agency" (Clarke & Halpern, 16). Despite the assertion made by Clark and Clarke, Faye Halpern disagrees, suggesting that Timothy Clark's first scale is a better frame as it doesn't "deny agency" (Clarke and Halpern, 5). Here, Halpern misunderstands the purpose of the varying scales; while he imagines them as mutually exclusive, they are most functional when working together simultaneously. If those discussing climate change utilized scale variance and intertwined both nuclear and hypothetical scales, it would place "human agency…on the same level as nonhuman agency" (Clarke & Halpern, 17). Thus, from this, we can imagine a new commons interpretation better suited to represent the Anthropocene, similar to Timothy Clark's scale (Figure 1):

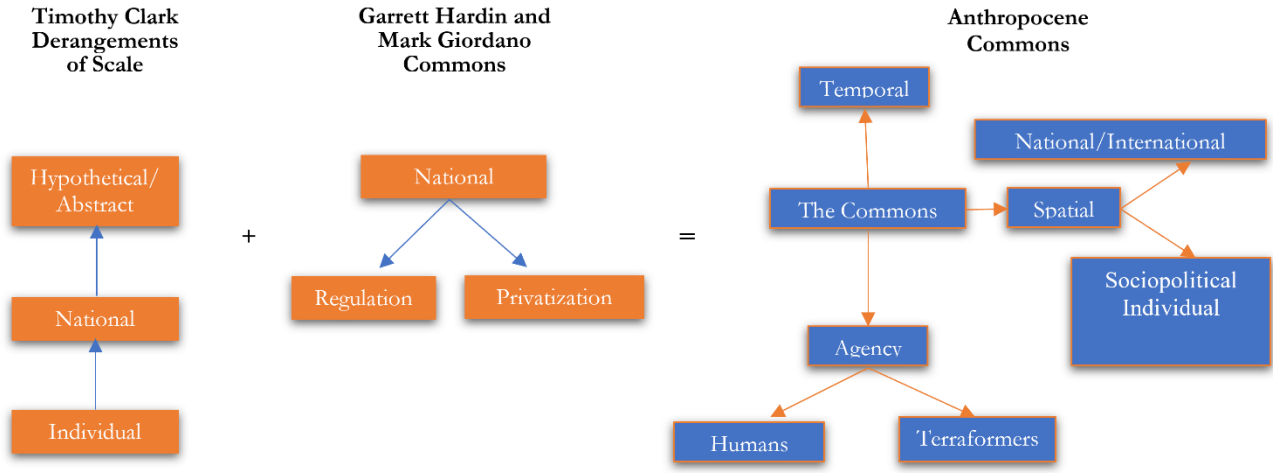

Figure 1: Clark's and Hardin and Giordano's commons scales can be reimagined into a new framework better suited to represent the Anthropocene.

The three diagrams outline the theories that have been discussed up to this point. Giordano and Hardin both operated at a national scale that only considers regulation, such as the Salmon Treaty, or privatization, like Hardin suggesting privatizing resources. Timothy Clark's

Derangement's of Scale shows the progression of scales from the individual to the national, but also an abstracted scale that accounts for other assemblages and the introduction of new ones. The Anthropocene Commons builds on both and seeks to create a holistic representation of the Anthropocene to later apply it to climate change. It functions on the three scales discussed in the paper: spatial, temporal, and agency scale. The agency scale places humans at the same level as other terraformers. The spatial scale accounts for national levels but also considers sociopolitical and individual scales whose absence has plagued other scholarships. These three scales provide a framework for incorporating scale variance into climate change theory, as this paper will argue that the scales are precisely what is necessary to encapsulate the dialogue necessary for the subject.

6. APPLYING THE COMMONS TO CLIMATE CHANGE THEORY

The current discussion surrounding climate change theory highlights the need for a homogenous model of the commons in order to avoid disastrous consequences. In Shahzad Ansari's study, "Constructing a Climate Change Logic: An Institutional Perspective on the 'Tragedy of the Commons,'" he studies how various actors within climate change discussion revolve around a "commons" logic in order to find common ground. However, as he investigates various actors engaging in climate change dialogue, they too run into the same issue of focusing mostly on the national level, lacking engagement with other levels of spatiality and agency (Ansari, 1014). Ansari finds that "eventually, a number of actors converged around a commons logic for climate change, although not all the key actors embraced this logic simultaneously and to the same extent." (Ansari, 13) Though most of the actors acknowledged the existence of a problem, there was not a standardized method or underlying logic; some organizations such as the European Union and environmental NGOs focused on the state, while G-77 focused on the community, and the Global Climate Coalition and JUSSCANNZ looked at the market (Ansari, 1022). None of the frameworks used looked beyond human stakeholders or included considerations of an ecological "logic." As a result, their work is guilty of the same flaws that Hardin and Giordano's work have, except these organizations actually work towards implementing policy. Without any scale variance, their solutions, too, lack the necessary scope. Ultimately, the various global initiatives used frameworks resembling a commons logic. However, the "transnational problems, especially those related to commons, pose formidable challenges for business, governmental, and civic leaders globally" (Ansari, 1034), meaning that the lack of a homogenous and holistic approach limited all of their initiatives.

Similar to what MacLellan pointed out, working within the "capitalist imperatives for limitless growth" by focusing on the market or national level hinders the effectiveness of policy, as current scholarship fails to consider the large threat that climate change poses beyond human agency. While this paper will point out explicit consequences of lacking scale variance, simply considering climate change dialogue as solely concerning humans, and no other terraformers like other species, parts of biomes, etc. could lead to an exacerbation of a dynamic where humans claim ownership of the land's resources. This would reify human-centric action, which is largely the cause of climate change in the first place.

The issue of the chosen scales to view climate change can be further explored in Anthony Patt's paper, "Beyond the Tragedy of the Commons: Reframing Effective Climate Change Governance." Paralleling Ansari's observation of various forms of commons logic, he too finds that the scholarship's "problem frame[s]," meaning their framework for approaching the environment, simplified a complex issue like climate change, rendering their solutions ineffective (Patt, 2). Indeed, similar to the issues pointed out with the spatiality in Hardin's piece, imagining a "tragedy of the commons" currently points towards capitalist imperatives of restriction or privatization to limit consumption, precisely what this paper has articulated as the wrong approach towards the commons. Patt argues that regulation is the wrong approach to the commons by highlighting how regulation is not sufficient to deter crime—specifically, murder. Despite murder being a public bad, Patt argues that "we don't solve it by imposing a tax or allocating permits," but instead try to shift behavior by prohibiting it and influencing human's moral compass. The same logic applies to climate change; reducing the damage of climate change does not come by adding a new shape to the commons or "imposing a tax or allocating a limited number of permits. We prohibit it" (Patt, 2). Patt's discussion of a commons logic is clear: the model of the Anthropocene must engage in dialogue with climate change by changing human behavior.

Furthermore, the commons accommodates the future of the Anthropocene by considering evolution. One of the key errors with Hardin and Giordano was the issue of temporality, as the commons had expanded as a result of the industrial revolution, introducing new terraformers that needed to be considered. As a result, Patt highlights the influence that the commons has on the long-term direction that climate change action takes, pointing out like MacLellan that the "tragedy of the commons framing offered clear guidance in terms of the appropriate policy instruments, so too does an evolutionary framing" (Patt, 3). Furthermore, as Ansari showed, the need for standardization is necessary to prevent the same mistake that multiple initiatives made by choosing various frames that did not cooperate with each other. Climate change theory and dialogue, therefore, need not only a model to account for large temporal, agency, and spatial scale, but to also agree on the motive that most properly represents the Anthropocene: shifting human behavior to support ceasing damage to the ecological state for all terraformers. The Anthropocene commons achieves precisely this: by accounting for various spatial scales it addresses what direction and level initiatives operate at while considering the vast stakeholders being affected, and through temporal scale allows for further growth of the commons.

7. APPLYING THE ANTHROPOCENE COMMONS TO CLIMATE CHANGE THEORY

Within climate change theory, specific research on global warming catastrophes highlights the utility of the Anthropocene commons and the implications of not adjusting to scale variance. The paper, "Definitions of Event Magnitudes, Spatial Scales, and Goals for Climate Change Adaptation and their Importance for Innovation and Implementation" highlights the implications of research not adjusting to scale variance in order to advocate for a holistic approach to climate change. As the researchers investigated responses to a major disaster in Copenhagen, they examine different actors' conceptualizations of climate change, essentially categorizing them into levels of spatial

scale: international, national, and regional. Their findings further support the need for a model that accounts for all levels of spatiality, as the authors describe the domains and scale as one of the "characterizing attributes of climate change adaptation" (Madsen et al., 200). Their findings agree with Ansari and Patt's works as they linear scale usage, which leads to improper Anthropocene dialogue, but Madsen's study shows the tangible effects of lacking a standardized model for all actors in a climate change dialogue. Instead of grasping the full magnitude of the event and characterizing it correctly, the study demonstrates how research on climate change in a certain commons focuses on linear scales; each of these scales, though, led to disagreeing solutions to the flood. Such errors, however, cannot be attributed to the actors themselves but rather a lack of a specific model for all of climate change research to fit into.

The argument for the Anthropocene commons can be made as the study shows that lacking a structure and dialogue that is agreed upon leads to the actors filling in blanks themselves "to match their specific project, resulting in inconsistent definitions" (Madsen et al., 198). The Anthropocene commons, furthermore, accounts for various levels of spatial scale through scale variance, allowing for a single issue to be considered on different levels of impact simultaneously instead of one exclusively.

The benefits of the Anthropocene commons are apparent when considering its application to the study. The study demonstrates how each actor selected a single spatial scale within the Copenhagen flood, ranging from the sewer system, cadaster, and the homeowners' association (Madsen et al., 200). Similar to Patt's argument, the scales of the commons and climate change discussion set the direction for initiatives, as various goals were considered by actors such as reducing cost, reducing sewage volume, and optimizing urban land use planning (Madsen et al., 200). Having a goal within a climate change disaster is not a problem; however, each actor operating in different ones makes initiatives far less effective and pose severe ramifications as they "present a possibility for conflict, which becomes visible in the implementation of climate change adaptation…and knowledge sharing…activities" (Madsen et al, 201). The notion that "there is no clear definition of climate change adaptation" (Madsen et al, 201) suggests that perhaps the flaw regarding the commons can be rectified through the scale variance, as its holistic nature would require actors to consider all levels of scale when examining an incident. Non-human terraformers would also be addressed, as a larger scale view of incidents like flooding would require consideration beyond human infrastructure of the ecological state. For example, in the case of the Copenhagen flooding, acknowledging other assemblages might require looking at how the use of resources for repairs might impact environments that other species use, or even if species were affected by the flood. The paper mentions damage to a wastewater treatment plant; looking at other terraformers would require seeing how other species and stakeholders are dependent on the treatment plant (Madsen et al, 198). Like mentioned previously, the Anthropocene commons bases its scale on the idea of Woods' scale variance, meaning that if applied to the Copenhagen flooding, it would allow for cohesive knowledge sharing amongst individuals but also create a more accurate presentation of the commons for action regarding climate change.

On a much smaller scale, the Network Political Ecology framework offers a look at how the concepts of the Anthropocene commons benefit climate change theory. Birkenholtz writes in "Network Political Ecology: Method and Theory in Climate Change Vulnerability and Adaptation Research" about the need for advancements in network theories of scale to beyond what is discussed in market and regulatory dialogue. Indeed, this paper's proposal parallels the Anthropocene commons as they both seek to better the dialogue of climate change by properly representing the large scale of the Anthropocene on multiple levels. Birkenholtz crafts network political ecology in a similar fashion as he melds extensive research methods, which analyze events through patterns statistical methods, and intensive methods, which attempt to understand the patterns by looking at the events themselves through anthropological approaches. The final product becomes a method of research that considers individual events from multiple scales and holistically represents them rather than posing them as independent analysis, just as the Anthropocene commons is designed to do. Much of the research done on climate change, like the Copenhagen flooding, failed to create effective action as their research focused on scales that didn't grasp the magnitude of the changes and the impacts it had on assemblages and the ecology. What is needed is research methods that acknowledge "social structure, human agency and the environment," as these variables are precisely what the Anthropocene Commons' advocates for (Birkenholtz, 301). Scale variance provides the holistic outlook to prescribe proper solutions.

Precisely as Birkenholtz's paper articulates, solutions focusing on sewage systems like in Copenhagen or on technological marvels are ineffective because they lack consideration of other scales or stakeholders that require different solutions. The purpose of research needs to consider modifying human behavioral patterns and seeing the holistic effects of these changes on various scales rather a linear approach that considers the effect on one group at one scale. Birkenholtz illustrates how better research is being conducted in a study on groundwater irrigation in Rajasthan, an area with a "high degree of socio-ecological heterogeneity but where a particular resource use system is relatively constant" (Birkenholtz, 305). As a result of precipitation pattern changes, the case study looked at how cropping and harvesting would affect both the areas economically and socio-politically in order to avoid limiting the dialogue to one area and restricting the scope. As a result of a scale variance approach, they not only found that the precipitation changes would affect crop patterns but would also "have negative effects on gendered labor burdens and power relations," as small farmers would suffer from not receiving state resources (Birkenholtz, 308). Ultimately the authors found that having an approach that accommodated different scales led to "a better and more nuanced understanding of these processes…[and] a better position to inform policy debates" (Birkenholtz, 310). These positive conclusions have been absent in all of the other scholarship that this paper has considered. Thus, the application of network political ecology allowed for the complex issue of agrarian perturbations to be researched on all levels of the impacts, highlighting the benefits of research with holistic approaches to climate change.

As network political theory looks at socio-ecological processes on various levels of scale and successfully examines ecological perturbations, the question becomes: why is the commons necessary if network political ecology works? The commons, though based on the same principles

of scale variance, explicitly considers temporality and agency unlike network political ecology, equipping it for the future of evolution and climate change. In the case of Rajasthan from network political ecology, the Anthropocene commons would build on the existing use of scale variance, but its study would be longer term and account for the precipitation's effect on biodiversity in the area. Lacking temporal consideration, the study failed to consider the introduction of new assemblages. While the study considered gendered labor burdens and power relations, it lacked consideration for any other form of terraformer, like species who would be affected by new policy, in the region. The Anthropocene Commons highlights how humans introduced new terraformers and impacts on the ecological state. It acknowledges the broader spectrum of "assemblage theory," meaning the dialogue is more holistic and effective by considering impacts beyond humans. Only considering human needs, of course, is precisely the cause of much of the environmental catastrophe faced today. Ultimately, network political ecology highlights the impact that holistic approaches have when applied to climate change research, opening the door for more inclusive policy and dialogue if the Anthropocene commons were to be applied to climate change theory.

Applying the Anthropocene commons to climate change theory shows the potential for more holistic dialogue to improve policy when looking at the United Nations Intergovernmental Panel on Climate Change's report on the climate developed over two years. This investigation focuses on the "Summary for Policymakers," which provides "key findings" that the panel finds relevant for initiatives. The most important feature that they begin with is the 1.5°C increase, which refers to the global temperature increase that causes catastrophic and irreversible climate damage, as it leads to "Climate-related risks for natural and human systems are higher for global warming of 1.5°C than at present, but lower than at 2°C" (IPCC, 5). In an entire two-page section dedicated to the results of CO_2 emissions on the atmosphere, only one sentence mentions that the risks "depend on…geographic location" (IPCC, 5). "Geographic location" includes consideration for marginalized countries, cultures, species and more that require special consideration. To reduce CO_2 emissions' disproportionate effects on different areas to one sentence without explaining the different effects leads to generalized and linear forms of dialogue that lessen the efficacy of solutions, just like the solutions presented in the rest of the scholarship critiqued in this paper. Indeed, scalar issues pervade the paper that is supposed to describe all of the issues to be addressed by policy.

The summary makes the same mistake that the Copenhagen flooding and Hardin's commons make: that is, operating at a spatial scale that does not include the smaller scales, such as the impoverished and other nations in far worse economic and geographic position that already suffer from the effects of global temperature increases. An average temperature that becomes the headline of every news report effectively marginalizes those who suffer the immediate consequences (because the report *waits* for an effect that is *already* happening to some) simply because the spatial scale was not varied in the discussion. For example, perhaps while the average has not reached 1.5°C, one specific geographic area has and thus faces the environmental consequences. An average measurement, then, would not acknowledge that area until the aggregate reaches them, leading to disparate environmental effects. The Anthropocene commons

would fit in here; the 1.5°C would still be a concern, but on a different scale, the UN panel would consider the fact that certain areas already require the aid that is planned for the future if the global average catches up. The threats posed to other areas currently suffering, then, would also be included in the discussion. In doing so, the dialogue would ensure that policy-makers are more aware of the need for global initiatives to avoid the threshold but understand that other areas already experience the impacts of global consumption.

The need for a better sense of not only spatial but temporal scale variance is demonstrated in a graph that the report provides (Figure 2).

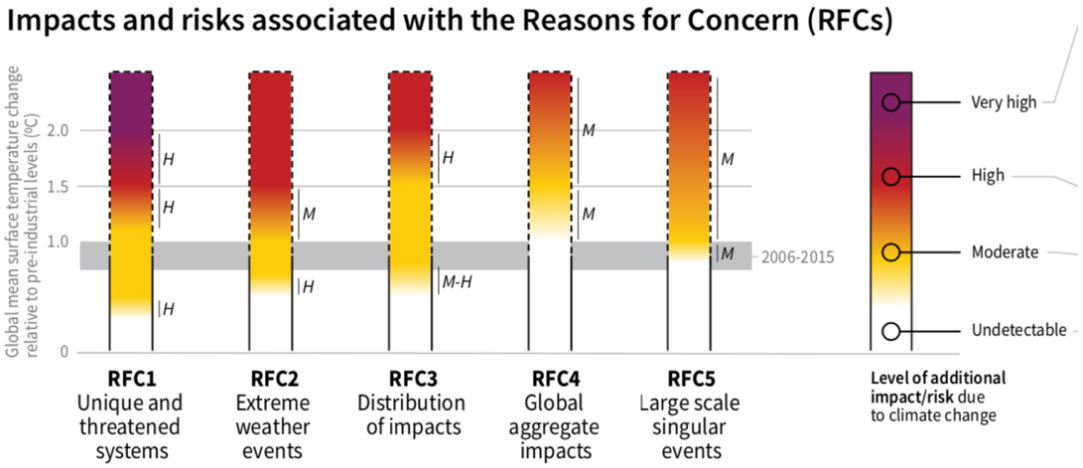

Figure 2: Graph from a report by the United Nations Intergovernmental Panel on Climate Change.

As the investigation surrounds the global catastrophe that will occur if action is not taken, the 1.5°C shifts the focus to imaginations of resource depletion globally and more "large scale singular events." The graph looks at different reasons for concern regarding global warming and evaluates them on a risk scale. Detailing five different impacts, only one of them examines how threatened systems *already* face the consequences of rising temperatures. Instead, it simply denotes that reality with a darker color among other risks. The graph not only again perpetuates the issues of spatial scale, as it lacks any discussion of the high risks in the graph associated with threatened systems, but it also suffers temporally as the graph illustrates a "risk," neglecting to acknowledge that these systems currently suffer. Choosing to describe events as risks as the 1.5°C threshold has not been reached improperly represents the dangers of climate change, as future and current impacts are melded into one that generalizes certain areas. This is not to say that the report intentionally makes these choices to marginalize certain populations. However, applying the values of the commons would create a more holistic narrative that acknowledges both the present impacts on areas of poor economic status but also the future global threats.

Agency scale is also an area where the report would benefit from the application of the commons. The paper's section of "indicative linkages between mitigation options and sustainable development using SDG's" discusses different sectors that initiatives can focus on to avoid the 1.5°C threshold. The overarching point they make is that limiting the risks of warming 1.5°C in terms of "sustainable development and poverty eradication" means that there needs to be

increased investment in adaption and mitigation, policy instruments, technological innovation, and finally behavioral changes (IPCC, 21). In their actual discussion, however, the dialogue almost exclusively revolves around diversification of the "economy and energy sector" and private fund investment by institutions (IPCC, 21). Just as MacLellan points out that discussions of climate change lack scale variance as they revolve around capitalistic imperatives or technological marvel, the UN report does the same, merely paying lip service to "behavioral changes," which studies have shown is the most crucial aspect in addressing climate change.

The Anthropocene commons, if considered by this report and further discussion, would shift the focus towards the "behavior changes," as the other proposals operate only on more technology and modification. Policy and investment can do only so much; addressing climate change means changing the way humans view their role in the environment. Much of the damage incurred came from exploitation that did not acknowledge other assemblages who suffer as a result. Climate change, now, is the consequence of that. Behavior shifting means accommodating other assemblages, including the environment itself. If nature is just treated as a commodity, no form of investment can stop the continuation of its exploitation—it can just hope to slow it down. Without a focus on behavioral changes, individuals will be enabled to continue their same patterns as the burden of saving all those in assemblage theory is directed towards "multilevel governance" and "institutional investors" (IPCC, 23). This report shows incredible non-biased initiative, however, with the Anthropocene commons' spatial, temporal, and agency scale, the method would fundamentally change the way humans and policymakers evaluate climate change and humanity's role in it. Considerations for a more holistic approach and non-human-centric dialogue would capture the meso-scale depth of climate change beyond technology and the 1.5-degree Celsius threshold.

8. CONCLUSION

This paper began by looking at Garrett Hardin's 1958 "The Tragedy of the Commons" and examined its utility as a theoretical framework for dialogue surrounding resource conservation and ultimately climate change. However, the theory is not perfect as it, like much of the other existing scholarship, lacks scale variance, a critique that Derek Wood's applies to Anthropocene dialogue. Today, of course, the ecological state of the world has shifted, as the Anthropocene marks a time where human action has created a new group of terraformers that need to be considered beyond neoclassical regulation and privatization. This paper, then, has formulated a model that requires spatial, temporal, and agency scale variance to holistically represent the Anthropocene. Climate change theory, whether research or initiatives, suffers from the same issues, as it revolves around the economic market and human impacts only, failing to acknowledge the levels of depth that need to be considered. The Anthropocene commons seeks to bridge the gap between the two and further create a more accurate representation of climate change. This new model by no means solves climate change; however, it creates a more holistic dialogue for both research and policy to engage with. It does so by radically changing the way that humans evaluate their role within the broader world. Most of the scholarship remains in the human-centric viewing of the world; by erasing that assumption through scale variance, the Anthropocene

Commons places the dialogue in a space where humans are just one of many different assemblages. This behavior shift is precisely how climate change must be approached. It is not an issue that technology alone can solve; human-centric dialogue allows humans to continue acting within the status quo. This paper does not solve climate change, but it seeks to provide a model that might catalyze the dialogue that can.

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