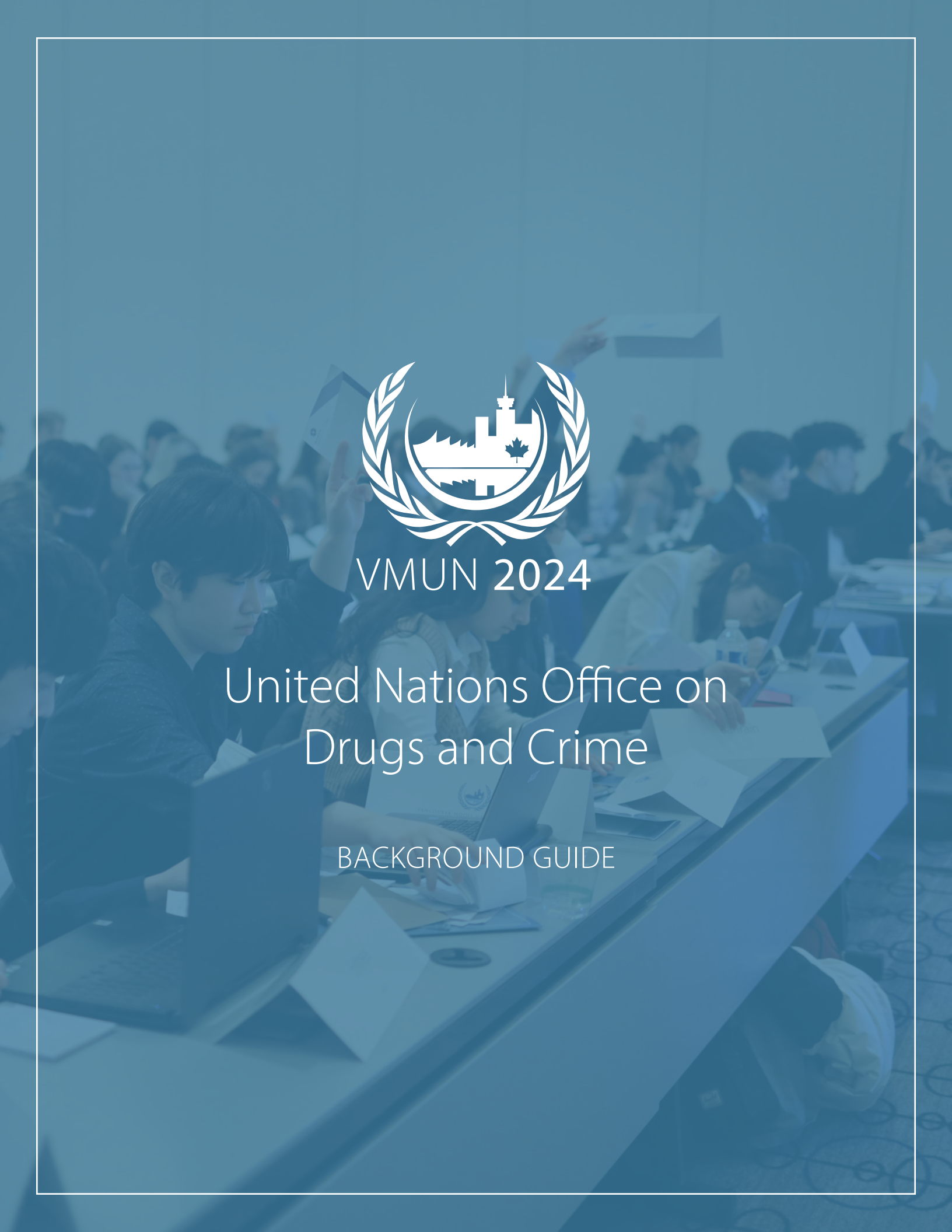

VMUN 2024

United Nations Office on Drugs and Crime

BACKGROUND GUIDE

Dear Delegates,

My name is Justin Bao, and with the rest of my dais team, it is our pleasure to welcome you to the United Nations Office on Drugs and Crime (UNODC) at VMUN 2024. Currently a Grade 11 student at St. George's School, I am ecstatic to be serving as your Director alongside my Chair, Airah Virani, and my Assistant Director, Oscar Li.

I distinctly recall my entrance into the Model UN world as a shy Grade 7 student. Over the course of that conference, I spoke a grand total of one time, a speech fraught with anxiety, stuttering, and nervousness. Yet, I have continued to speak and be engaged with Model UN because I grew to love its cultivation of friendships, confidence, and fruitful debate. Having now attended nearly a dozen conferences, the cherished friendships, fond memories, and unforgettable lessons have unquestionably made Model UN a defining part of my high school experience. It would have seemed comical to a Grade 7 me that Model UN would have impacted me so much, but now it is an undeniable fact.

So, to newer delegates, take the risk and immerse yourself into the world of Model UN. To experienced delegates, take the risk to become a leader and challenge yourself. The topics for UNODC this year, the *Commodification of Drugs and Substances* and *Prevention of Bioterrorism*, are both emerging issues which require innovative solutions and in-depth research. These are difficult topics; therefore, I urge you to set yourself up for a gratifying experience by fully understanding them in all its breadth.

If you have any questions or concerns, do not hesitate to reach out to me and your dais team at *unodc@vmun.com*. I wish you best of luck on your preparations and welcome you to UNODC!

Warm regards,

Justin Bao
UNODC Director

Position Paper Policy

What is a Position Paper?

A position paper is a brief overview of a country's stance on the topics being discussed by a particular committee. Though there is no specific format the position paper must follow, it should include a description of your positions your country holds on the issues on the agenda, relevant actions that your country has taken, and potential solutions that your country would support.

At Vancouver Model United Nations, delegates should write a position paper for each of the committee's topics. Each position paper should not exceed one page and should all be combined into a single document per delegate.

For the United Nations Office on Drugs and Crime, position papers, although strongly recommended, are not required. However, delegates who wish to be considered for an award must submit position papers.

Formatting

Position papers should:

— Include the name of the delegate, their country, and the committee

— Be in a standard font (e.g. Times New Roman) with a 12-point font size and 1-inch document margins

— Not include illustrations, diagrams, decorations, national symbols, watermarks, or page borders

— Include citations and a bibliography, in any format, giving due credit to the sources used in research (not included in the 1-page limit)

Due Dates and Submission Procedure

Position papers for this committee must be submitted by **11:59 PM PT on January 22, 2024**. Once your position paper is complete, please save the file as your last name, your first name and send it as an attachment in an email to your committee's email address, with the subject heading as "[last name] [first name] — Position Paper". Please do not add any other attachments to the email.

Both your position papers should be combined into a single PDF or Word document file; position papers submitted in another format will not be accepted.

Each position paper will be manually reviewed and considered for the Best Researched award.

The email address for this committee is *unodc@vmun.com*.

Commodification of Drugs and Substances

Overview

Throughout the 20th and 21st century, the trading and possession of substances has been an enduring issue across the globe. In particular, the use of psychoactive substances has been placed under intense international scrutiny. These are defined by the World Health Organization (WHO) as substances that affect mental processes such as consciousness, mood, or emotion.[1] The addictive nature of psychoactive substances and its effect on the health, economy, and environment of communities has resulted in its production and distribution to be heavily regulated by both national and international law, which either controls its use or entirely prohibits it.[2] However, the sustained demand, easy transport, and the creation of stronger substances have caused a worldwide increase in psychoactive substance users.[3] The accessibility of psychoactive substances has been associated with spreading the social harms of drug abuse, increasing criminal activity, and affecting national economies. Whether it be the prevalence of cocaine in South American economies, international cartels and criminal organizations in the drug trade, or the increase of youth substance abusers due to the decriminalization of drugs, it is clear that the accessibility of psychoactive substances is a complex issue.[4]

The commodification of substances is defined as the process of turning drugs from a product with limited supply into a widespread commodity.[5] This process involves both legal and illegal mediums and deals with all aspects that increase a product's accessibility to the public. These include government regulations on the drug market, monitoring of underground and local markets, substance use in medicine and pharmaceutical products, criminal organizations and cartels, and the distribution of drugs through e-commerce.[6] Within the past decade, this process can be seen in motion across the globe, with the use of psychoactive drugs, such as opioids, increasing significantly. The United Nations Office on Drugs and Crime's (UNODC) 2022 World Drug Report stated that, in 2020, 284 million people aged 15–64 used drugs, a 26 percent increase from the previous decade.[7] This increase of substance usage can be attributed to factors including the decriminalization of drugs, social issues, rise of e-commerce, and black markets. Furthermore, with the drug market alone being valued at USD 74.6 billion, the production of psychoactive substances has risen dramatically over the past decade.[8] The economic incentives behind the pharmaceutical industry has made it one of the fastest growing industries in the past decade, which

[1] "Drugs (psychoactive)," *World Health Organization,* n.d. https://www.who.int/health-topics/drugs-psychoactive#tab=tab_1.
[2] Ibid.
[3] Abdi Birhanu et al., "Nearly One-Fourth of Eastern Ethiopian Adolescents are Current Psychoactive Substance Users: A School-Based Cross-Sectional Study," *Subst Abuse Rehabil*, April 22, 2023, https://doi.org/10.2147/SAR.S401843
[4] "UNODC World Drug Report 2022," *United Nations Office on Drugs and Crime,* June 27, 2022, https://reliefweb.int/report/world/unodc-world-drug-report-2022.
[5] Pat O'Malley et al., "The Demand for Intoxicating Commodities: Implications for the 'War on Drugs,'" *Social Justice*, 1991, http://www.jstor.org/stable/29766642.
[6] "UNODC World Drug Report 2022," *United Nations Office on Drugs and Crime,* June 27, 2022, https://reliefweb.int/report/world/unodc-world-drug-report-2022.
[7] Ibid.
[8] "Drug Discovery Market," *Precedence Research,* June, 2023, https://www.precedenceresearch.com/drug-discovery-market

has also played a significant role in commodifying drugs.[9] Therefore, it is clear that the process of commodification involves both legal and illegal methods that need to be carefully evaluated and considered.

The commodification of substances also has significant socioeconomic and humanitarian impacts. The ease with which consumers can access psychoactive substances increases the risk of harmful drugs proliferating among the population and negatively affecting civilians' health, with drugs being responsible for nearly 11.4 million deaths annually.[10] Psychoactive substances are particularly harmful due to their impairment effects; when used, it slows down cognitive processes and induces a dependency, which can negatively affect a person's ability to stay employed, build connections, and maintain a baseline of wellness. This has caused "drug epidemics" in many nations, with both the opioid crisis in North America and the cocaine crisis across South America being referred to as epidemics.[11] In particular, the opioid crisis in Canada and the United States has become a major social issue as opioid overdoses have increased by 30% over the past five years. As drugs are inaccessible through legal means in many nations, many consumers have turned to illegal criminal organizations, such as cartels and black market vendors. These criminal organizations are incredibly destructive as they harm communities caught in the crossfire against law enforcement, spread fear through gangs, and perpetuate drug abuse.[12]

However, the commodification of drugs also has its benefits; pharmaceutical drugs have proven to be indispensable in modern healthcare. Many medical conditions require patients to take prescription drugs, with strong drugs such as opioids often used as pain relievers.[13] The commodification of such substances has allowed for these pharmaceuticals to be more accessible to less developed nations. Furthermore, it has spurred medical development as pharmaceuticals have drawn more investment and funding, leading to the development of life-saving medication.[14] Therefore, it is important to also consider the benefits that commodifying substances bring and weigh them appropriately with the associated harms.

Timeline

September 4, 1839 — The First Opium War erupts between the British Empire and the Qing Dynasty. It is sparked by the Qing Dynasty's confiscation of opium stocks in Canton in an effort to enforce their ban on opium.[15]

July 38, 1868 — The Pharmacy Act of 1868 is passed in the United Kingdom. It becomes the first law in the U.K. to regulate the drug trade by restricting the sale of opium and permitting only qualified pharmaceutical chemists to sell or dispense "poisons."[16]

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[9] "Pharmaceutical Manufacturing Market Size, Share & Trends Report Pharmaceutical Manufacturing Market Size, Share & Trends Analysis Report," *Grand View Research*, n.d. https://www.grandviewresearch.com/industry-analysis/pharmaceutical-manufacturing-market

[10] Hannah Ritchie et al., "Opioids, cocaine, cannabis and other illicit drugs," *Our World in Data*, 2022, https://ourworldindata.org/drug-use

[11] "Understanding the Opioid Overdose Epidemic," *Centres for Disease Control and Prevention*, June 1, 2022, https://www.cdc.gov/opioids/basics/epidemic.html.

[12] CFR.org Editors, "Mexico's Long War: Drugs, Crime, and the Cartels," *Council on Foreign Relations*, September 7, 2022, https://www.cfr.org/backgrounder/mexicos-long-war-drugs-crime-and-cartels

[13] "Prescription Drugs," *Canadian Centre on Substance Use and Addiction*, n.d. https://www.ccsa.ca/prescription-drugs

[14] Institute of Medicine (US) Forum on Drug Discovery, Development, and Translation, "Breakthrough Business Models: Drug Development for Rare and Neglected Diseases and Individualized Therapies: Workshop Summary," *National Library of Medicine*, 2009, https://www.ncbi.nlm.nih.gov/books/NBK50972/.

[15] Kenneth Pletcher, "Opium Wars," *Encyclopedia Britannica,* April 17, 2015, https://www.britannica.com/topic/Opium-Wars.

[16] "Drug History Timeline," *University of Victoria,* n.d., https://drugtimeline.ca/.

1898 — German pharmaceutical company Bayer introduces diacetylmorphine under the name Heroin. Although the drug was first synthesized in 1874, Bayer is the first to mass produce it, advertising it as a cough remedy.[17]

January 23, 1912 — Representatives from China, France, Germany, Italy, Japan, the Netherlands, Iran, Portugal, Russia, Thailand, and the U.K. sign the International Opium Convention in the Hague. It establishes international regulation and control of opium, morphine, heroin, and cocaine, and its groundwork is laid in the International Opium Commission of 1909.[18]

January 16, 1919 — The Eighteenth Amendment is ratified in the United States, creating a prohibition on the production and sale of alcoholic beverages beginning on January 17, 1920. This is part of a global prohibition movement in the 1920s that included Canada, Sweden, and Finland.[19]

June 26, 1936 — The Convention for the Suppression of the Illicit Traffic in Dangerous Drugs is signed in Geneva, becoming the first treaty to make drug offences an international crime. However, the U.S. abstains from signing the treaty due to its weak policies on drug use, which greatly diminishes the effectiveness of the Convention.

February 21, 1971 — The Convention on Psychotropic Substances, which expands the Single Convention on Narcotic Drugs of 1961 to include newer psychotropic substances such as MDMA, is signed in Vienna. It established clear guidelines restricting non-medical usage of drugs which has since been followed by 183 nations.[20]

June 18, 1971 — U.S. President Richard Nixon declares drugs as "public enemy number one" and starts the War on Drugs. More funding is allocated to law enforcement to suppress drug usage. Pan-American efforts are established to stop cartels and aspects of the war continue to today.[21]

December 20, 1988 — The United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances is signed in Vienna, which adds mechanisms for the prohibition of drugs and escalates the War on Drugs.[22]

December 2, 1993 — Pablo Escobar, the head of the Medellín Cartel, is shot by Colombian police. This marks the end of the Medellín monopoly on the cocaine market, whose rival, the Cali Cartel, soon takes over. [23]

July 2001 — Portugal becomes the first nation to decriminalize all drugs at a regulated amount and focuses national policy on drug treatment and healthcare. Although drugs are still illegal in Portugal, possession of drugs is now a civil offence rather than a criminal one.[24]

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[17] Ibid.
[18] "Shanghai Opium Commission," *United Nations Office on Drugs and Crime,* January 1, 1959, https://www.unodc.org/unodc/en/data-and-analysis/bulletin/bulletin_1959-01-01_1_page006.html.
[19] Britannica, T. Editors of Encyclopaedia, "prohibition," *Encyclopedia Britannica*, June 9, 2023, https://www.britannica.com/topic/prohibition-alcohol-interdict.
[20] "Psychotropic Substances," *International Narcotics Control Board,* n.d., https://www.incb.org/incb/en/psychotropics/index.html
[21] "The War on Drugs: History, Policy, and Therapeutics," *Dominican University Rebecca Brown Library,* n.d., https://research.dom.edu/the-war-on-drugs--history-policy-therapeutics/history
[22]"United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substance," *United Nations*, 1988, https://www.unodc.org/pdf/convention_1988_en.pdf.
[23] Collin McEvoy, "Pablo Escobar," *Biography*, April 17, 2023, https://www.biography.com/crime/pablo-escobar.
[24] Ximene Rêgo et al., "20 years of Portuguese drug policy - developments, challenges and the quest for human rights," *BioMed Central*, July 17, 2021, https://substanceabusepolicy.biomedcentral.com/articles/10.1186/s13011-021-00394-7.

2003 — Insite, North America's first legal injection site, opens in Vancouver, Canada.[25] The injection site is heavily monitored, with healthcare supplies and workers stationed to prevent overdoses.

January 2021 — Canada's 37th safe injection site is opened.[26] It represents a more general change in drug policy throughout North America, with a renewed focus on rehabilitation rather than punishment.

2013–2022 — Uruguay, Georgia, South Africa, Canada, Mexico, Malta, and Thailand allow the sale of cannabis under government regulations. This is intended to provide more economic opportunities and rehabilitate drug users.[27]

Historical Analysis

Although the usage of psychoactive substances has been prevalent throughout history, its tolerance has fluctuated throughout time. With the rise of colonialism in the 16th century, psychoactive commodities such as coffee, alcohol, and tobacco began to play a significant role in the global economy.[28] The stimulating effect of these imported goods resulted in their mass cultivation to satisfy consumers and became extremely profitable for the empires of the era.[29] Used for both medical and recreational purposes, the effects of these substances were promoted along trade routes, the most significant of which was the Columbian Exchange which introduced tobacco and cannabis to Afro-Eurasia.[30] As psychoactive substances consisted of natural stimulants obtained by agriculture, it led to mass cultivation efforts, such as the massive haciendas in South America.[31] Consequently, entering the 19th century, natural psychoactive substances such as alcohol and tobacco were at the centre of many economies.

However, scientific innovation during the Industrial Revolution allowed for the creation of the first synthetic drugs in 1869.[32] This allowed for stronger substances that were more addictive and harmful. These synthetic drugs were also not limited by environmental factors, as they did not require cultivation, meaning they became more accessible to the public. In particular, during this period, opium became refined as scientific advancement allowed for stronger opiates such as morphine, isolated in 1803, and heroin, synthesized in 1874.[33] Minimal research on the harms of such substances made their proliferation and creation unregulated.[34] Although there were bans on psychoactive substances, the economic benefits of these products and the difficulty for states to

[25] "Drug History Timeline," *University of Victoria,* n.d, https://drugtimeline.ca/.
[26] Danielle Giliauskas et al., " A review of structural, process, and outcome measures for supervised consumption services," *Ontario HIV Treatment Network*, March, 2021, https://www.ohtn.on.ca/rapid-response-a-review-of-structural-process-and-outcome-measures-for-supervised-consumption-services/
[27] Dr. Anand Dugar, "Countries Where Weed is Legal in 2023: Guide to Cannabis Law by Country," *Green Health Docs*, May 16, 2023, https://greenhealthdocs.com/countries-where-weed-is-legal/.
[28] Marc-Antoine Crocq, "Historical and cultural aspects of man's relationship with addictive drugs," *Dialogues Clin Neurosci*, December, 2007, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3202501/.
[29] Ibid.
[30] Ibid.
[31] Ben Vila, "From Haciendas to the Peal of the Antilles," *Brown University Library*, n.d, https://library.brown.edu/create/modernlatinamerica/chapters/chapter-4-cuba/moments-in-cuban-history/from-haciendas-to-the-peal-of-the-antilles/.
[32] Alan Wayne Jones, "Early drug discovery and the rise of pharmaceutical chemistry," *National Library of Medicine,* June, 2011, https://pubmed.ncbi.nlm.nih.gov/21698778/
[33] History.com Editors, "Heroin, Morphine and Opiates," *History,* June 12, 2017, https://www.history.com/topics/crime/history-of-heroin-morphine-and-opiates.
[34] Robin Brodrick, "The History of Clinical Research: 1700's & 1800's," *Veristat*, n.d. https://www.veristat.com/blog/the-history-of-clinical-research-1700s-1800s

monitor and prevent their use made their consumption tolerated. These substances became an integrated part of many cultures as European colonial powers brought these commodities across the world and encouraged their mass consumption, such as tobacco in Southeast Asian cultures.[35] However, opium, with its harmful effects on social life, soon caused substance abuse to begin coming into the limelight of international politics.[36]

This was accelerated by Great Britain's trading of opium to Qing China during the 1820s, which caused recreational opium use to skyrocket throughout China's coast and resulted in crippling addiction among its population.[37] Despite the Qing Dynasty's ban on the substance, state-sponsored smuggling from the British East India Company provided opium through a black market.[38] This caused the opium crisis to persist and ultimately led to the First Opium War, which demonstrated both the social harms of drugs and the difficulty of prohibiting drug use.[39] In particular, the First Opium War directed attention toward opium abuse as a prominent global issue and shifted international opinion on psychoactive substances. Although the war ended with British victory and the continuation of the opium trade, nations across the world noted how the drug deteriorated social life in China.[40] Following the war, drug use was viewed more unfavourably by the international community, as seen with cannabis regulations in South Africa, and its use would be called into question.[41]

Alongside this shift in international perception, in the mid-1800s, temperance movements, which advocated for total abstinence from alcohol, gained strength across the globe. Many religions, particularly Evangelism in North America, perceived alcohol to harm economic success, social cohesion, and religious and moral purity.[42] The general revival of religious fervor in the 1800s, as seen with the Second Great Awakening in the U.S., was a reaction to industrialization and the rise of science.[43] As religions transitioned from a moderationist stance on alcohol to an abstentionist or even prohibitionist view, societal perceptions greatly shifted on alcohol.[44] Many religious sects now viewed alcoholism as a sin; this provided the necessary popular support to pass prohibitionist policies during this period.[45]

However, similar to the First Opium War, prohibition was largely unsuccessful as consumers turned to illegal markets to satisfy their demand. These policies were largely ineffective and caused an increase in criminal activities, leading to prohibitionist legislation being repealed across the world during the 1920s and 1930s. Specifically in the U.S., prohibition resulted in a drastic increase of bootlegging and gangsterism, where the huge demand for illegal alcohol caused the rise of gangs and mobsters such as Al Capone.[46] As citizens turned to illegal markets for alcohol, criminal organizations were formed to take control of the market and use the profit to fuel their operations. The criminalization of psychoactive substances allowing black markets to thrive is a recurring

[35]Diana J Burgess et al., "Culture, acculturation and smoking use in Hmong, Khmer, Laotians, and Vietnamese communities in Minnesota," *BioMed Central,* August 4, 2014, https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-14-791.
[36] "The Opium Wars in China," *Asia Pacific Curriculum,* n.d, https://asiapacificcurriculum.ca/learning-module/opium-wars-china
[37] Ibid.
[38] Ibid.
[39] Ibid.
[40] Ibid.
[41] James H. Mills, *Drugs and Empires : Essays in Modern Imperialism and Intoxication, c.1500-c.1930* (Palgrave Macmillan, 2007).
[42]Gerald Hallowell, "Prohibition in Canada," *The Canadian Encyclopedia,* August 12, 2013, https://www.thecanadianencyclopedia.ca/en/article/prohibition
[43] T. Editors of Encyclopaedia Britannica, "Second Great Awakening," *Encyclopedia Britannica*, September 21, 2023, https://www.britannica.com/topic/Second-Great-Awakening.
[44] Tuezong Xiong, "Four Positions on Alcohol Consumption," *Tuezong Xiong*, November 24, 2020, https://tuezongxiong.wordpress.com/2020/11/24/four-positions-on-alcohol-consumption/.
[45] T. Editors of Encyclopedia Britannica, "Prohibition," *Encyclopedia Britannica*, June 28 2023, https://www.britannica.com/event/Prohibition-United-States-history-1920-1933.
[46] Ibid.

theme throughout history.[47] The addictiveness of drugs causes an ever-present consumer base which often benefits criminal organizations and their ability to conduct harmful activity, which can be seen today with Central American drug cartels, such as the Sinaloa Cartel.[48]

Throughout the 1900s, international discussion regarding the control and regulation of drugs and psychoactive substances was frequent.[49] Yet, despite the formation of international bodies after the conclusion of the two World Wars, international agreements restricting drug use were weak and unenforceable.[50] Entering the mid-1900s, the influx of new psychoactive substances into the market such as fentanyl, LSD, and MDMA caused a rise in drug addiction and drug culture throughout the world.[51] This was further augmented by extensive drug usage during wars; for instance, World War II and the Vietnam War saw widespread usage of amphetamine and heroin to help with conditions such as PTSD.[52] These factors led to the Single Convention on Narcotic Drugs in 1961, a comprehensive international treaty that heavily restricted non-medical drug use, and the declaration of the War on Drugs in 1971, a U.S.-led conflict to ban non-medical drug usage across the world. These two actions during the late 1900s effectively formed a cohesive hard international opposition to non-medical drug use.

Through the late 1900s and early 2000s, psychoactive substances were incredibly restricted in the market, and illegal possession of drugs were met with harsh punishments in many nations such as long prison sentences and fines.[53] The U.S. played a pivotal role in providing financial and political support for nations such as Mexico, often cooperating with each other to halt cartels and locate illegal productions of illicit drugs.[54] A major narrative pushed by the Western world during the 1970s–2000s was the responsibility of the consumer over their own choices, which justified the punishment on drug users. In many cases, punishment became incredibly severe, as seen in the Philippines where former President Rodrigo Duterte's ongoing policy on drugs has killed 12,000 and constitutes crimes against humanity.[55] However, this harsh crackdown on drug use and the resulting social isolation of drug users empowered cartels. As such, cartels became a lucrative business across South America and many other regions, perpetuating the production of unregulated substances.[56] In nations such as Portugal, overdose cases increased during this period, partly due to drug users' fear of seeking medical attention and increased availability of more deadly substances on the market.[57] This increase in drug abuse as a result of harsher government policy on substance use caused many nations to experiment with a shift in policy.

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[47] Ibid.
[48] Amy Tikkanen, "Sinaloa cartel," *Encyclopedia Britannica*, September 18, 2023, https://www.britannica.com/topic/Sinaloa-cartel.
[49] William B. McAllister, *Drug Diplomacy in the Twentieth Century: An International History* (Routledge, 1999), https://books.google.ca/books?hl=en&lr=&id=hhfYEceyoiQC&oi=fnd&pg=PR4&dq=weakness+of+1930+drug+agreements&ots=SpCoaRNP1J&sig=vaYXuib3vPlEQ72LS9elMbsSveA&redir_esc=y#v=onepage&q=weakness%20of%201930%20drug%20agreements&f=false
[50] Ibid.
[51] "Psychotropic Substances," *International Narcotics Control Board,* n.d., https://www.incb.org/incb/en/psychotropics/index.html
[52]Barabara McCarthy, "A brief history of war and drugs: From Vikings to Nazis," *Aljazeera*, November 25, 2016, https://www.aljazeera.com/features/2016/11/25/a-brief-history-of-war-and-drugs-from-vikings-to-nazis
[53] Ibid.
[54] Ibid.
[55]Elaine Pearson, "Philippines' 'War on Drugs'," *Human Rights Watch,* n.d, https://www.hrw.org/tag/philippines-war-drugs.
[56] "Drug decriminalization in Portugal: Setting the record straight," *Transform Drug Policy Foundation,* May 13, 2021, https://transformdrugs.org/blog/drug-decriminalisation-in-portugal-setting-the-record-straight.
[57] Niall McCarthy, "Then & Now Portugal's Drug Decriminalization," *Statista*, January 24, 2020, https://www.statista.com/chart/20616/key-developments-since-portugal-decriminalized-drugs/.

In 2001, Portugal decriminalized drugs, where illicit drug possession became a civil issue rather than a criminal offence.[58] This involved making judicial sentences for illegal drug possession lighter as well as allowing legal drug use in safe amounts.[59] Furthermore, it involved the encouragement of rehabilitation through making healthcare centers more accessible for drug users going through withdrawal.[60] It marked the rise of liberal opinion on drug users, viewing them as victims rather than criminals.[61] This new policy, which has since been adopted in many countries worldwide, focuses on rehabilitation efforts and safer drug usage in order to weaken criminal organizations and better regulate drugs.[62] This has been accompanied by some nation's legalization of weaker drugs to open up economic and social opportunities. In addition, decriminalization allows for legal drug businesses to open and for drug users to be more integrated into society, making them more likely to seek help and rehabilitation. Proponents of both approaches to drug commodification has been an ongoing debate and highlights the diverse perspectives on drug usage.

Past UN/International Involvement

UNODC Involvement

UNODC is an intergovernmental organization formed in 1997 to combat issues pertaining to drugs, crime, corruption, and terrorism.[63] Part of the United Nations Development Group, UNODC has promoted the safe usage of drugs through the initiation of Treatnet in 2005, an international network for drug treatment. It has spread awareness on global drug issues through the annual publication of the World Drug Report, which analyzes data from member states to establish strategic aims.[64]

Treatnet consists of 20 resource centers located across the world in nations including Australia, Brazil, Canada, China, Colombia, Egypt, United Kingdom, and the United States, along with a consortium and UNODC itself.[65] It aims to improve the quality of drug treatment and rehabilitation across the world through the exchange of experience, resources, and data by establishing communication networks and databases.[66] Furthermore, the consortium organized Treatnet training packages to be sent to nations, which provided drug treatment training and supplies to increase their accessibility for developing communities.[67] However, although Treatnet has advocated for increased rehabilitation efforts, these are merely suggestions and no mechanisms have been

[58] "Drug decriminalization in Portugal: Setting the record straight," *Transform Drug Policy Foundation,* May 13, 2021, https://transformdrugs.org/blog/drug-decriminalisation-in-portugal-setting-the-record-straight.
[59] Ibid.
[60] Ibid.
[61] Juana Tomás-Rosselló et al., "Treatnet–International Network of Drug Dependence Treatment and Rehabilitation Resource Centres," *National Institute on Drug Abuse,* 2007, https://nida.nih.gov/international/abstracts/treatnet-international-network-drug-dependence-treatment-rehabilitation-resource-centres.
[62] Ibid.
[63] "About Us," *UNODC*, n.d. https://www.unodc.org/southernafrica/en/sa/about.html.
[64] Ibid.
[65]"Treatnet," *UCLA Integrated Substance Abuse Programs*, n.d., https://www.uclaisap.org/internationalprojects/html/unodc/treatnet.html.
[66]Juana Tomás-Rosselló et al., "Treatnet–International Network of Drug Dependence Treatment and Rehabilitation Resource Centres," *National Institute on Drug Abuse,* 2007, https://nida.nih.gov/international/abstracts/treatnet-international-network-drug-dependence-treatment-rehabilitation-resource-centres.
[67] "Treatnet Training Package," *United Nations Office on Drugs and Crime,* n.d., https://www.unodc.org/unodc/en/treatment-and-care/treatnet-training-package.html.

implemented to ensure that nations follow its suggestions.[68] Nations such as the Philippines and China maintain harsh punishment for drug users at the detriment of their international image and support from their citizens. This is mainly due to their governments holding more conservative views, and Treatnet has internationally objected to these measures.

Conversely, the World Drug Report analyzes data collected from its member states through the mandatory Annual Reports Questionnaire (ARQ).[69] It outlines the gravity of the issue and actions for nations to take. However, the data of the World Drug Report could also be inaccurate as nations are fully responsible for their own surveys, and there is a lack of accountability as countries are allowed to self-report. Furthermore, although the ARQ is mandatory for member states, it is not enforced and some nations have omitted from submitting.

European Union Involvement

The European Union (EU) is a supranational body established in 1993 that formed an economic and political union between its 27 member states based in Europe.[70] It offers regional unity and cooperation, and discusses issues ranging from foreign relations to economic trade throughout the continent. As a major producer of pharmaceutical drugs, the EU has developed a number of drug policies relating to regional use and illicit trafficking through the establishment of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) in 1993.[71] The agency has provided information on trends through its publication of the annual European Drug Report, as well as establishing the goals and general policies of its member states; however, the accomplishment of these goals usually fall to individual nations.

Historically, the EMCDDA has worked with the EU Agency for Law Enforcement Cooperation (Europol) to combat illicit drug use both regionally and internationally.[72] Through the use of Reitox, a regional network to exchange data, the EMCDDA and Europol have been able to form strategic plans and aims, specifically enforcing prevention of illicit drugs.[73] For example, in 2011, EMCDDA established the Cooperation Programme between Latin America, the Caribbean, and the EU on drug policies (COPOLAD) which helped develop information systems similar to Reitox, creating evidence-based intervention plans and the exchange of experience.[74] Moreover, EMCDDA has also regulated the production of drugs in Europe through the European Drug Prevention Quality Standards, which established health protocols and education programs for drugs.[75] As a major economic region of the world home to pioneering policies of member states such as Portugal, the European Union has played a crucial role internationally on the trade and regulation of drugs.[76]

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[68] Ibid.
[69] "The Annual Report Questionnaire," *United Nations Office on Drugs and Crime,* n.d., https://www.unodc.org/unodc/en/data-and-analysis/arq.html.
[70]Matthew J. Gabel, "European Union," *Encyclopedia Britannica,*July 7, 2023, https://www.britannica.com/topic/European-Union.
[71] "Founding and Early History of the EMCDDA," *European Monitoring Centre for Drugs and Drug Addiction*, n.d. https://www.emcdda.europa.eu/about/history_en.
[72] "EU drugs policy," *European Council,* June 27, 2023, https://www.consilium.europa.eu/en/policies/eu-drugs-policy/.
[73]"Reitox network of national focal points," *European Monitoring Centre for Drugs and Drug Addiction,* n.d, https://www.emcdda.europa.eu/about/partners/reitox_en.
[74]"Cooperation Programme between Latin America, the Caribbean and the European Union on drug policies (COPOLAD)," *European Monitoring Centre for Drugs and Drug Addiction,* n.d, https://www.emcdda.europa.eu/activities/copolad_en.
[75] EMCDDA, "European drug prevention quality standards (EDPQS)," *European Monitoring Centre for Drugs and Drug Addiction,* January 12, 2011, https://www.emcdda.europa.eu/publications/manuals/prevention-standards_en
[76] Ibid.

The Single Convention on Narcotic Drugs

The Single Convention on Narcotic Drugs is an international treaty that consolidated pre-existing international drug treaties and established international guidelines on drug use.[77] First ratified in 1961, it has since been signed by 186 parties and has been at the heart of international drug prevention efforts.[78] The Single Convention created four "Schedules" of substances that classified the drugs based on their restrictiveness and outlined the procedures to add and classify drugs for each Schedule.[79] These Schedules broadened international attention, which had been focused solely on opium and cocaine, to include depressants such as cannabis.[80] It reaffirmed the necessity of pharmaceutical drug use and took a prohibition stance on non-medical drug use, regulating its production, cultivation, distribution, and punishment.[81]

However, the conflicting interests of different caucuses, such as between states who had economic stakes in the drug trade and those that were harmed by the drug trade, caused the Single Convention to be much weaker than originally advocated for. For example, the initial mandatory punishment of embargoes for non-complying nations was changed to be simply a recommended punishment, and heroin was removed from the absolute prohibition list.[82] Furthermore, the contention caused ambiguous wording, especially on the criminalization of personal possession of drugs, leading to international debates that stalled progress.[83] Additionally, in 1972, amendments to the Single Convention and the 1971 Convention on Psychotropic Substances to include other psychoactive substances made regulations even weaker.[84] Regardless, the Single Convention continues to be the foundation of international cooperation on the drug issue, with organizations such as UNODC dedicated to upholding it.[85]

Current Situation

Pharmaceutical Substance Usage

The use of psychoactive substances varies from nation to nation but has generally been prevalent around the world. From curing symptoms of diseases to reducing stress levels, the effects of psychoactive substances have been invaluable to healthcare.[86]

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[77] "Single Convention on Narcotic Drugs,1961, as amended by the Protocol amending the Single Convention on Narcotic Drugs, 1961," *United Nations*, August 8, 1975, https://treaties.un.org/doc/Treaties/1975/08/19750808%2006-05%20PM/Ch_VI_18p.pdf.
[78] Nishka Prajapati, "Analysis of Single Convention on Narcotic Drugs, 1961, 1972," *Legal Service India*, n.d., https://www.legalserviceindia.com/legal/article-2843-analysis-of-single-convention-on-narcotic-drugs-1961-1972.html.
[79] "Single Convention on Narcotic Drugs,1961, as amended by the Protocol amending the Single Convention on Narcotic Drugs, 1961," *United Nations*, August 8, 1975, https://treaties.un.org/doc/Treaties/1975/08/19750808%2006-05%20PM/Ch_VI_18p.pdf.
[80] Ibid.
[81]Ibid.
[82] "The Plenipotentiary Conference for the adoption of a Single Convention on Narcotic Drugs," *United Nations Office on Drugs and Crime,* January 1, 1962, https://www.unodc.org/unodc/en/data-and-analysis/bulletin/bulletin_1962-01-01_1_page007.html.
[83] Diane Riley .PhD, "Drugs and Drug Policy in Canada: A Brief Review & Commentary," *Canadian Foundation for Drug Policy,* November, 1998, https://web.archive.org/web/20210504201636/http://www.cfdp.ca/sen1841.htm.
[84] "Report of the Senate Special Committee on Illegal Drugs," *Senate of Canada*, September, 2002, https://sencanada.ca/en/content/sen/committee/371/ille/rep/repfinalvol3-e.
[85] Ibid.
[86] Stefan J Friedrichsdorf et al., "Management of breakthrough pain in children with cancer," *National Library of Medicine,* March 7, 2014, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3953108/.

The pharmaceutical usage of psychoactive substances includes the research, development, and distribution of these substances for medical purposes.[87] Throughout the world, substances continue to play a pivotal role in medicine with strong drugs, such as heroin and fentanyl, continuing to be used to relieve pain for procedures such as childbirth and cancer.[88] Furthermore, over-the-counter drugs, such as acetaminophen (commonly referred to as Tylenol), are present in every pharmacy and have become crucial in modern healthcare. These benefits of drugs were reaffirmed by the Single Convention of 1961, where drugs were acknowledged to be "indispensable for the relief of pain and suffering" around the world, which caused medical usage of drugs to be heavily promoted.[89]

However, pharmaceutical drugs and the use of hard drugs in medicine could lead to drug addiction, with heroin and opioid use in medicine being particularly concerning.[90] Regardless, medicinal drugs have become integral to the pharmaceutical industry, one of the fastest-growing markets and valued at USD 1.48 trillion worldwide.[91] It is necessary to prevent both the underprescription and overprescription of drugs. Oftentimes, these cases stem from a misdiagnosis of a patient's medical condition, causing doctors to not prescribe patients with the correct drugs.[92] A lack of pharmaceutical supplies can also prevent people across the world from accessing the proper prescription medicines.[93] Therefore, ensuring proper diagnosis of patients as well as a stable supply of pharmaceuticals is imperative for safe drug usage.

Due to the technology required for drug development and its high cost to adhere to international standards, the global pharmaceutical industry is largely centred on wealthier nations.[94] Leading producers of pharmaceutical drugs are primarily located in Western Europe and the U.S., with eight of the top 15 largest pharmaceutical companies headquartered in the U.S.[95] Furthermore, wealthy nations often invest in research and development to increase the profit from the pharmaceutical industry, with Germany, for example, investing USD 8 billion into pharmaceuticals and generating USD 34.7 billion.[96] In contrast, pharmaceuticals in developing nations are largely inaccessible; approximately 80% of the worldwide population consume only 20% of all pharmaceutical drugs.[97] However, nations that have experienced rapid economic growth like China and India have seen leaps in their pharmaceutical markets, with China currently holding 12% of the global pharmaceutical market compared to 10% in 2020, and India growing 13% in 2023.[98, 99] With the importance of prescription drugs in modern

[87] Ibid.
[88] Ibid.
[89] "Single Convention on Narcotic Drugs,1961, as amended by the Protocol amending the Single Convention on Narcotic Drugs, 1961," *United Nations*, August 8, 1975, https://treaties.un.org/doc/Treaties/1975/08/19750808%2006-05%20PM/Ch_VI_18p.pdf.
[90]Mayo Clinic Staff, "Prescription Drug Abuse," *Mayo Clinic,* October 25, 2022, https://www.mayoclinic.org/diseases-conditions/prescription-drug-abuse/symptoms-causes/syc-20376813.
[91]Matej Mikulic, "Revenue of the worldwide pharmaceutical market from 2001 to 2022," *Statista*, March 27, 2023, https://www.statista.com/statistics/263102/pharmaceutical-market-worldwide-revenue-since-2001/.
[92] Lombardi F et al., "Underprescription of medications in older adults: causes, consequences and solutions-a narrative review," *Eur Geriatr Med*, June, 2021, doi: 10.1007/s41999-021-00471-x.
[93] Ibid.
[94] Ibid.
[95] Donagh Fitzgerald, Claire Wilson, "The Top 15 Pharmaceutical Companies in the World in 2023 ranked by revenue from pharmaceutical drug sales," *GetReskilled,* June, 2023, https://www.getreskilled.com/pharmaceutical-companies/.
[96] "The Pharmaceutical Industry in Germany," *Germany Trade and Invest,* n.d., https://www.gtai.de/en/invest/industries/healthcare-market-germany/pharmaceutical-industry
[97] Susan Ruth Levin, "Improving distribution of pharmaceuticals in developing countries: A case study of The Gambia project," *Link Springer,* March, 1987, https://link.springer.com/article/10.1007/BF02174374.
[98] "China's pharmaceutical industry will be the world's largest in less than 10 years," *Daxue Consulting,* July 19, 2022, https://daxueconsulting.com/pharmaceutical-industry-china/.
[99] Monal Sanghvi, "Indian Pharma Market Sustains Double-Digit Growth In March," *BQ Prime,* April 10, 2023, https://www.bqprime.com/markets/indian-pharma-market-sustains-double-digit-growth-in-march.

healthcare, it is important to assist developing nations in making such medication accessible. The international disparity between regions such as Sub-Saharan Africa and the Global North in regards to pharmaceutical resources is extreme and requires thorough consideration.

Prevention of Illicit Substance Use

The current global policy on drugs revolves around the regulations established in the Single Convention of 1961, the Convention on Psychotropic Substances of 1971, and the United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988.[100] These three documents have firmly prevented the non-medical usage of drugs and prohibited certain drugs based on their effects on an individual's nervous system.[101] However, illicit substance use is still prevalent throughout the world, which has led to a variety of policies to control and monitor their usage.

These documents place the responsibility of monitoring domestic drug cases with connections to transnational drug crime onto individual nations. Multinational organizations, such as COPOLAD, the Latin American Institute for the Prevention of Crime and the Treatment of Offenders (ILANUD), and the Regional Office for Central America and the Caribbean in Panama (ROPAN), have been established to improve cooperation in preventing drug trafficking and enhancing drug control.[102] These organizations share data on global trafficking and law enforcement strategy through shared databases, such as INTERPOL's database on criminal records, and mutual aid.

Since the early 2000s, there has been a gradual shift of perception in the U.S. from viewing drug abusers as criminals to viewing them as victims.[103] Studies linking social conditions, lack of drug education, and trauma to the increased likelihood of drug abuse have led governments to focus on raising awareness on the dangers of substance use.[104] Although education on the topic varies from nation to nation, nearly every country in the world has incorporated drug education into its educational curriculum.[105] In the U.S., for example, this education also targets adults by spreading awareness on how they can influence drug usage in the youth and break down drug culture.[106]

Law enforcement involves itself in direct deterrence and crackdown of illicit drug usage. Many nations have a dedicated law enforcement agency such as the Drug Enforcement Administration (DEA) in the U.S. and the National Narcotics Control Commission (NNCC) in China.[107] In addition to monitoring communication channels and sending covert operatives to identify drug dealers, law enforcement also frequently patrol

[100] "Single Convention on Narcotic Drugs,1961, as amended by the Protocol amending the Single Convention on Narcotic Drugs, 1961," *United Nations*, August 8, 1975, https://treaties.un.org/doc/Treaties/1975/08/19750808%2006-05%20PM/Ch_VI_18p.pdf.
[101] Ibid.
[102]"United Nations Latin American Institute for Crime Prevention and the Treatment of Offenders," *ILANUD,* 1975, https://openjicareport.jica.go.jp/pdf/10712776_02.pdf.
[103] "Police Tactics in Drug Trafficking Cases," *Not Guilty Adams,* n.d., https://www.notguiltyadams.com/library/police-tactics-in-drug-trafficking-cases.cfm.
[104] Office of Justice Programs, "Promising Strategies to Reduce Substance Abuse," *Office of Justice Programs,* September, 2000, https://www.ojp.gov/pdffiles1/ojp/183152.pdf.
[105] Xinhua News Agency, "China Enforces Drug Prevention Education Among Teenagers," *China Internet Information Centre,* June 27, 2003, http://www.china.org.cn/english/culture/68271.htm.
[106] "Police Tactics in Drug Trafficking Cases," *Not Guilty Adams,* n.d., https://www.notguiltyadams.com/library/police-tactics-in-drug-trafficking-cases.cfm.
[107] Ibid.

neighborhoods to intervene in any drug related violence.[108] However, these methods are often insufficient due to a lack of police forces and the inability of officials to monitor large areas.[109] Therefore, to prevent these underground markets from gaining power and drug epidemics, many law enforcement agencies cooperate with community organizations to build anti-drug culture.

The other aspect of law enforcement is judicial deterrence, where national policy involves increasing sentences and the severity of punishments for illicit substance use; such is the case in Uganda and China. In Uganda, the passing of the Narcotic Drugs and Psychotropic Substances (NDPS) Act in 2015 increased the sentence for offenders possessing illicit drugs to 25 years in prison.[110] Despite Uganda's intended outcome, a 2018 UNODC investigation has revealed no significant rise or decline in drug abuse. Nonetheless, Western nations continue to largely avoid deterrence methods.[111]

Rehabilitation of Drug Users

The rehabilitation of drug users has been a heavily debated topic throughout the 2000s, with nations such as China arguing for harsher deterrence punishments while nations primarily in Western Europe and North America advocating for rehabilitation.[112] However, rehabilitation has become a prevalent policy in many nations, with Portugal being a primary example. Entering the 2000s with a crippling heroin crisis, the nation shifted its national policy in 2001 by viewing the drug crisis as an epidemic rather than an issue of law enforcement.[113] This led to the decriminalization of drugs, which permitted certain quantities of drugs and replaced jail sentences with therapy and discussions with psychologists.[114] Despite some challenges with funding these rehabilitation efforts, it yielded immediate results as drug use among youth fell from 14.1% to 10.6% and fatalities by drugs decreased by 50% between 2001 and 2006.[115] This success case encouraged many nations to adopt similar policies.

The rehabilitation of drug users has often been accompanied with decriminalization of drugs, making offences civil cases that result in milder punishments. Furthermore, the decriminalization of drugs sometimes involves the legalization of certain drugs, such as marijuana. This has provided economic opportunities for drug sellers and users, with the global cannabis market valued at USD 16.7 billion in 2022 and projected to grow by 25.4%.[116] These measures break down the stigma around substance addiction and open opportunities for users to reach out for help. Pharmacies and safe injection sites help prevent overdoses and addiction by having substances such as naloxone and methadone, and supervision from trained personnel.[117] Furthermore, these factors seek to turn drug users away from illegal streams; however, the effectiveness and harms of such policies continue to be heavily

[108] Ibid.
[109] Ibid.
[110] "Assessment report Uganda," *United Nations Office on Drugs and Crime,* 2022, https://www.unodc.org/documents/drug-prevention-and-treatment/2018_Uganda_Rapid_Assessment_Report_FINAL.pdf.
[111] Ibid.
[112] American Addiction Centers' Editorial Staff, "How Other Countries Deal with Addiction and Treatment," *Desert Hope Treatment Center,* October 6, 2022, https://deserthopetreatment.com/addiction-guide/drug-industry-trends/other-countries-addiction-treatment/.
[113] Ibid.
[114] Ibid.
[115] Ibid.
[116] "Legal Marijuana Market Size, Share & Trends Analysis Report By Product Type (Flower, Oil And Tinctures), By Application (Medical, Adult Use), By Region (North America, Europe, APAC, LATAM, Africa), And Segment Forecasts, 2023 - 2030," *Grand View Research,* n.d., https://www.grandviewresearch.com/industry-analysis/legal-marijuana-market.
[117] Jennifer Ng et al., "Does evidence support supervised injection sites?," *National Library of Medicine,* November, 2016, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5685449/.

debated.[118] Opponents of rehabilitation have argued that it promotes drug usage among the population, causing even greater social harms. Therefore, it is imperative that delegates consider both possibilities and analyze these varying stances on rehabilitation.

E-Commerce on the Substance Trade

The rise of the internet has led to exponential growth of online marketplaces and online transactions.[119] Retail e-commerce, such as Amazon and eBay, has increased in value from USD 1.3 trillion in 2014 to USD 5.7 trillion in 2022.[120] The convenience and variety offered by e-commerce has made it popular with consumers, and nearly all companies today incorporate some aspect of e-commerce in their business.[121] The success of e-commerce has also affected substance trade, both legally and illegally.

Legitimate e-commerce pharmaceutical companies have grown in popularity due to easier transportation through mail and shipping companies.[122] Moreover, there is high market potential for the selling of pharmaceutical drugs through online retailers, an area which has also grown significantly within the past decade.[123] The benefits that online pharmaceutical drug markets bring include increased accessibility, equal distribution, and reducing the burden on pharmacies.[124] However, the lack of government influence on the internet and regulations on e-commerce sites have also led to an increase in illicit drug trade.[125]

The impact of e-commerce on the illicit drug trade involves false products, illegal drug advertisements, and the trading of drug manufacturing tools.[126] These transactions primarily occur on the dark web, where users are kept anonymous and governments have virtually no control or tracking over their activities.[127] Black market websites, such as the Silk Road, allow for sellers to anonymously connect with buyers, where payment is made through cryptocurrency to prevent tracing.[128] Illicit drugs dominate these websites, taking up an estimated 16% of the dark web, and has resulted in the importation of large amounts of unregulated substances hidden in everyday objects.[129] This has drawn the attention of national agencies such as the DEA, which has not only increased the inspection of global imports but has also cooperated with online retailers to implement regulations and control measures.[130] However, with COVID-19 forcing many nations to legalize the e-commerce of drugs and the relative

[118] Marco Leyton .PhD, "Cannabis legalization: Did we make a mistake? Update 2019," *National Library of Medicine,* September, 2019, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6710088/.
[119] Stephanie Chevalier, "Retail e-commerce sales worldwide from 2014 to 2026," *Statista,* September 21, 2022, https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/.
[120] Ibid.
[121] Ibid.
[122]"Global Pharma E-Commerce Market – Industry Trends and Forecast to 2030," *Data Bridge,* n.d., https://www.databridgemarketresearch.com/reports/global-pharma-e-commerce-market.
[123]Brian McNeal, "DEA implements ecommerce outreach program to combat counterfeit drug production," *United States Drug Enforcement Administration,* August 4, 2020, https://www.dea.gov/press-releases/2020/08/04/dea-implements-ecommerce-outreach-program-combat-counterfeit-drug.
[124]"Global Pharma E-Commerce Market – Industry Trends and Forecast to 2030," *Data Bridge,* n.d., https://www.databridgemarketresearch.com/reports/global-pharma-e-commerce-market.
[125] Ibid.
[126] Ibid.
[127] Brian McNeal, "DEA implements ecommerce outreach program to combat counterfeit drug production," *United States Drug Enforcement Administration,* August 4, 2020, https://www.dea.gov/press-releases/2020/08/04/dea-implements-ecommerce-outreach-program-combat-counterfeit-drug.
[128] Eileen Ormsby, "What drug dealers have taughtU.S.about e-commerce on the dark web," *Financial Review,* May 24, 2019, https://www.afr.com/technology/what-drug-dealers-have-taught-us-about-e-commerce-on-the-dark-web-20190502-p51jjz.
[129] Ibid.
[130] Ibid.

novelty of the sector, there has not yet been sufficient research and regulations on the impact of e-commerce on the drug trade.[131]

Case Study: Pharmaceutical Privatization in the United States

With 40% of the entire global market within its borders, the U.S. has the largest pharmaceutical industry in the world.[132] The role of private corporations in this growth has been immense.[133] By increasing the efficiency of the market and the quality of care, the privatization of pharmaceuticals caused the rapid growth of the industry in the late 1900s.[134] Specifically, private pharmaceutical companies such as Pfizer began to compete in the development of new "blockbuster" drugs that were heavily advocated for and commercialized, such as the antidepressant Prozac.[135] The commercialization and commodification of drugs has had an immense impact on American society; 66% of Americans now take prescription drugs.[136]

However, with little government interference in the pharmaceutical market aside from industry regulations, few companies dominate the market.The market as a whole is also concentrated among just a handful of nations; for instance, six of the largest pharmaceutical companies in the world—Johnson & Johnson, Pfizer, Merck, Gilead, Amgen, and Abbvie—were headquartered in the U.S. in 2017.[137] This emergence of "Big Pharma" has become a significant issue: with large companies blocking smaller competitors from entering the market by obtaining patents and political power, the monopolization of the pharmaceutical industry in nations has raised prices to become inaccessible for many.[138, 139] Between 2011 and 2015, pharmaceutical companies have raised drug prices by as much as 71%, causing the amount spent on pharmaceuticals by citizens to increase steadily by 6.25% annually from 2010 to 2018.[140] Essential drugs, such as insulin, are now unaffordable to many Americans.[141] With the activities of companies becoming less transparent and the growing political power wielded by monopolies, the pharmaceutical industry has become incredibly unpopular within the U.S. By prioritizing profit, companies have caused drugs to be largely inaccessible in the U.S. and have made them unaffordable for many people around the world as well.

[131]Stanislav V. Spektor, Karina A. Ionkina, "Estimating the effects of legalizing drug e-commerce," *Population and Economics,* April 28, 2023, https://populationandeconomics.pensoft.net/article/96523/.
[132] Matej Mikulic, "Market share of leading 10 national pharmaceutical markets worldwide in 2022," *Statista,* June 26, 2023, https://www.statista.com/statistics/245473/market-share-of-the-leading-10-global-pharmaceutical-markets/.
[133] Ibid.
[134] "A history of the pharmaceutical industry," *Pharmaphorum,* September 1, 2020, https://pharmaphorum.com/r-d/a_history_of_the_pharmaceutical_industry.
[135] Ibid.
[136] SingleCare Team, Anne Jacobson, "Prescription drug statistics 2023," *The Checkup,* February 3, 2023, https://www.singlecare.com/blog/news/prescription-drug-statistics/.
[137] Kristin Compton, Emily Miller, "Big Pharma and Medical Device Manufacturers," *Drugwatch,* January 26, 2023, https://www.drugwatch.com/manufacturers/.
[138] Ibid.
[139] Helen Collis et al., "How Big Pharma games the system — and keeps drugs prices high," *Politico,* April 11, 2023, https://www.politico.eu/article/big-pharma-health-care-european-commission-games-the-system-and-keeps-drugs-prices-high/.
[140]Abbey Meller, Hauwa Ahmed, "How Big Pharma Reaps Profits While Hurting Everyday Americans," *Centre for American Progress,* August 30, 2019, https://www.americanprogress.org/article/big-pharma-reaps-profits-hurting-everyday-americans/.
[141] Ibid.

Case Study: Mexican War on Drugs

Starting in the 1980s, Mexico has been fraught with a drug crisis as many cartels operate within its borders.[142] A central hub of the American drug trade, Mexico is a funnelling point for smuggling drugs produced in South America to the U.S.[143] Cartels such as the Sinaloa Cartel dominate communities within Mexico, where the profits made from smuggling drugs such as cocaine and methamphetamine have allowed such cartels to maintain power.[144] The lucrative illicit drug business has brought in USD 13.6 billion to USD 48.4 billion, funding the operations of drug lords.[145] With 90% of cocaine in the U.S. coming from Mexico in 2007, the U.S. aided heavily with Mexican law enforcement through agreements such as the Mérida Initiative, which appropriated USD 2.5 billion towards stabilizing the drug situation in Mexico.[146, 147] However, despite these measures, the drug war continues to rage in Mexico, leading to immense harm to its population. Up to 150,000 citizens have been killed in drug-related violence, and 79,000 people are missing due to suspected human trafficking by cartels since 2008.[148] Therefore, it is clear that the drug crisis has caused widespread social ramifications in Mexico.

The early 2010s, under the cabinet of Felipe Calderón, saw intense anti-drug policy through the deployment of the military to combat drug abuse, with 50,000 active soldiers across Mexico by the end of Calderón's presidency.[149] Despite these measures, drug violence continued to rise, with 15,000 people dead.[150] Therefore, in following presidencies, there has been increased focus on the deescalation of violence and focus on counterinsurgency efforts rather than direct confrontation.[151] When Andrés Manuel López Obrador took office in 2018, Mexico adopted a policy of amnesty towards drug users aligning with rehabilitation efforts, drawing criticism from its population.[152] Furthermore, relationships between the U.S. and Mexico have deteriorated due to Mexico's concern of American interference and the United States' opposition to Mexican drug policy; this has reduced cooperation between the two nations.[153] Despite Obrador's declaration that the war on drugs has ended in Mexico, drug violence and cartels continue to be prevalent in the region.[154]

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[142] Edward Hunt, "The U.S. has spent billions trying to fix Mexico's drug war. It's not working.," *The Washington Post*, March 15, 2021, https://www.washingtonpost.com/politics/2021/03/15/us-has-spent-billions-trying-fix-mexicos-drug-war-its-not-working/.
[143] Ibid.
[144] Ibid.
[145] Colleen W. Cook, "CRS Report for Congress Mexico's Drug Cartels," *Congressional Research Service*, October 16, 2007, https://sgp.fas.org/crs/row/RL34215.pdf.
[146] Ibid.
[147]"Merida Initiative," *U.S. Department of State,* January 20, 2017, https://2009-2017.state.gov/j/inl/merida/index.htm
[148] Edward Hunt, "The U.S. has spent billions trying to fix Mexico's drug war. It's not working.," *The Washington Post*, March 15, 2021, https://www.washingtonpost.com/politics/2021/03/15/us-has-spent-billions-trying-fix-mexicos-drug-war-its-not-working/.
[149]Agence France-Presse, "US ambassador warns of more Mexico violence: reports," *Agence France-Presse,* March 17, 2010, https://web.archive.org/web/20130131034635/https://www.google.com/hostednews/afp/article/ALeqM5ilG2_XOB5B3aB241NStUkWfpNNBQ.
[150] Ibid.
[151] Ibid.
[152] Ken Dilanian, "Drug war cooperation between the U.S. and Mexico is at its lowest point in decades. What went wrong?," *NBC News,* March 17, 2023, https://www.nbcnews.com/politics/national-security/no-cooperation-us-mexico-drug-war-rcna75093.
[153] Ibid.
[154] Casey Quackenbush, "'There Is Officially No More War.' Mexico's President Declares an End to the Drug War Amid Skepticism," *Time*, January 31, 2019, https://time.com/5517391/mexico-president-ends-drug-war/.

Possible Solutions and Controversies

Strengthening Market Regulations

Current international market regulations on drug usage primarily focus on government review of substance products and inspections to ensure the quality and safety of products.[155] However, due to the lack of enforcement from international bodies, these regulations vary from nation to nation in practice. With nations seeking to make regulation processes more efficient and streamlined, the lack of drug tests is an emerging issue which can be fixed through strengthened regulations. This can be accomplished by establishing mandatory spending goals for drug inspection and research or creating thorough inspection standards on domestic pharmacies.[156] This solution can both promote and inhibit the commodification of drugs, as government regulations ensure that drug usage stays firmly within acceptable standards and slows down development in the industry. For many nations, particularly where drug smuggling is rampant, such as in Central America, strengthening regulation and enforcement measures would be ideal in preventing illicit drug use.

However, the capabilities of countries to establish effective drug regulations depends heavily on their economic and political situation.[157] Many nations likely lack the resources to commit to drug regulations.[158] Furthermore, different economic interests could lead to opposition as developing countries would require large amounts of foreign aid in order to meet international standards. Strengthening international market regulations in developing countries will likely require significant support from developed countries. This solution is likely to be supported by most nations but requires a large amount of international cooperation and support in order for international compliance.

Data Collection on Drug Usage

Global data collection on drug usage data currently relies on nations to provide reliable data, with the annual UNODC World Drug Report lacking set international regulation on data collection techniques, instead relying on questionnaires.[159] This has led to concerns over the validity of some data collected due to factors such as national interests, which could skew international policies and focus.[160] International databases sharing drug usage information, similar to that of Reitox in Europe, have already been established.[161] Possible solutions to improve the quality of data collection include establishing an international independent research body, improving the accuracy of questionnaires, and increasing supervision on pharmaceutical companies.

Many countries have supported initiatives to improve the quality of data collection for drug usage; however, propositions for the establishment of international research bodies have raised concerns on the data collection strategies and how they can violate state sovereignty.[162] Research into drug usage is incredibly important in harm

[155] EMCDDA, "European drug prevention quality standards (EDPQS)," *European Monitoring Centre for Drugs and Drug Addiction,* January 12, 2011, https://www.emcdda.europa.eu/publications/manuals/prevention-standards_en
[156] Ibid.
[157] Ibid.
[158] Ibid.
[159] "The Annual Report Questionnaire," *United Nations Office on Drugs and Crime,* n.d., https://www.unodc.org/unodc/en/data-and-analysis/arq.html.
[160] Ibid.
[161] Ibid.
[162] Ibid.

identification, such as how the medical usage of drugs can lead to addiction, the effects of new drugs, and market trends.[163] Therefore, it is imperative to balance international overview with national sovereignty. Data collection is incredibly important to analyze drug usage, and the preferred methods of data collection vary widely from nation to nation due to a multitude of factors.

Expanding the Substance Market

With the rapid growth of the pharmaceutical industry and its economic benefits, the expansion of the substance market could prove beneficial for many nations. Currently, there is little market competition for pharmaceutical companies as the industry is dominated by a few companies that suppress smaller businesses.[164] Advocates have called on governments to establish antitrust laws for pharmaceutical companies by reforming patent laws, which would allow smaller companies to compete and expand the pharmaceutical market. Furthermore, there have been calls to accelerate clinical trials and reduce regulations to make the industry less expensive and more affordable for smaller competition.[165] This would accelerate the commodification of drugs by making them more accessible. Additionally, establishing international antitrust laws could aid in this process by ensuring global competition.

However, the introduction of market competition and increase of drug innovation could lead to the development of more harmful drugs.[166] Speeding up clinical trials and removing regulations so experimental drugs are released prematurely could also lead to potential risks with drug epidemics, causing nations with firm anti-drug policies unlikely to support such policies.[167] The solution could be beneficial for consumers as it allows medical drugs to be cheaper and more accessible to the public.[168] Therefore, this has become a contentious issue which is further influenced by the political power that many pharmaceutical companies hold in nations.[169]

Decriminalization of Illicit Substances

The decriminalization of illicit substances usually refers to drug possession no longer falling under a criminal offence but rather a civil or administrative one. This often entails lighter punishment that allows substance users to seek professional help rather than receive punishment. Furthermore, some countries have adopted policies of permitting drug possession under certain quantities; in Portugal, for example, this quantity is set at a 10-day supply.[170] The decriminalization of illicit substances is usually accompanied by the legalization of less harmful drugs such as cannabis and the establishment of rehabilitation centers such as safe injection sites.[171] Generally,

[163] Ibid.
[164] "Global Pharma E-Commerce Market – Industry Trends and Forecast to 2030," *Data Bridge,* n.d., https://www.databridgemarketresearch.com/reports/global-pharma-e-commerce-market.
[165] David Blumenthal et al., "The U.S. Can Lower Drug Prices Without Sacrificing Innovation," *Harvard Business Review,* October 1, 2021, https://hbr.org/2021/10/the-u-s-can-lower-drug-prices-without-sacrificing-innovation.
[166] EMCDDA, "European drug prevention quality standards (EDPQS)," *European Monitoring Centre for Drugs and Drug Addiction,* January 12, 2011, https://www.emcdda.europa.eu/publications/manuals/prevention-standards_en
[167] Kailash Chand, "Should drugs be decriminalized? Yes," *National Library of Medicine,* November 10, 2007, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2072016/
[168] "Global Pharma E-Commerce Market – Industry Trends and Forecast to 2030," *Data Bridge,* n.d., https://www.databridgemarketresearch.com/reports/global-pharma-e-commerce-market.
[169] Ibid.
[170] "Drug Decriminalization in Portugal: Setting the Record Straight," *Transform Drug Policy Foundation*, Last modified May 13, 2021, https://transformdrugs.org/blog/drug-decriminalisation-in-portugal-setting-the-record-straight.
[171] Ibid.

decriminalizing drugs is a more liberal stance towards drug use, where the emphasis is on drug treatment, therapy, and rehabilitation.[172] International agreements on the decriminalization of drugs have the potential of removing consumers from underground markets and encouraging drug users to access safe drugs and seek medical help.[173]

However, there has been opposition against drug toleration as it is perceived to increase drug culture and promote the usage of drugs among youth.[174] Although some research has proved otherwise, the decriminalization of drugs is deeply unpopular in more conservative nations, especially in Southeast Asian nations.[175] There are also nations, primarily East and Southeast Asian states, where drug use is not a criminal offence but still subject to harsh punishment and heavy anti-drug policies.[176] The decriminalization of drugs often allows for legal drug businesses which have faced both support from drug-producing nations and opposition from nations with strict anti-drug policies.[177] A country's decision to support this solution depends on a multitude of variables such as political ideology and culture. Therefore, it is important for nations to thoroughly weigh the harms and benefits of decriminalization in context of their unique circumstances.

International Distribution of Substances

Another aspect of the commodification of substances is distribution; as most pharmaceutical drugs are concentrated within developed nations, citizens of developing nations are more vulnerable to unsafe markets.[178] This has been seen in Africa and Central Asia, where political and economic instability has caused a lack of medication needed to combat health problems.[179] These circumstances have caused many citizens to seek unregulated products that may contain harmful or addictive substances like opiates.

Prevention methods include increasing aid to developing nations by providing pharmaceutical supplies and expertise. However, this could also cause nations to be overdependent on foreign aid, which can harm their national sovereignty and long-term pharmaceutical policy and infrastructure. This has also raised concerns over the misuse of pharmaceuticals in developing nations and the lack of research in healthcare issues within them.[180] Opinions over the best manner to distribute the international supply of substances thus vary widely between nations, including factors such as geopolitical tension, socio-political circumstances, and economic aspects.[181] Therefore, ensuring that pharmaceutical drugs and substances are distributed around the world is immensely complex and requires careful analysis on conflicts that may arise.

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[172] Ibid.
[173] Ibid.
[174] Ibid.
[175] Kailash Chand, "Should drugs be decriminalized? Yes," *National Library of Medicine,* November 10, 2007, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2072016/
[176] Mu Lin et al., "No Exit: China's State Surveillance over People Who Use Drugs," *Health and Human Rights Journal,* June 8, 2022, https://www.hhrjournal.org/2022/06/no-exit-chinas-state-surveillance-over-people-who-use-drugs/.
[177] Kailash Chand, "Should drugs be decriminalized? Yes," *National Library of Medicine,* November 10, 2007, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2072016/
[178] Mawouena Bohm, "Africa's Best Practices in Drug Use Prevention, Treatment and Recovery," *African Union,* August 28, 2019, http://www.cicad.oas.org/cicaddocs/Document.aspx?Id=5430.
[179] Ibid.
[180]Michael Kremer, "Pharmaceuticals and the Developing World," The Journal of Economic Perspectives 16, no. 4 (2002), 67–90, https://www.jstor.org/stable/3216915.
[181] Ibid.

Bloc Positions

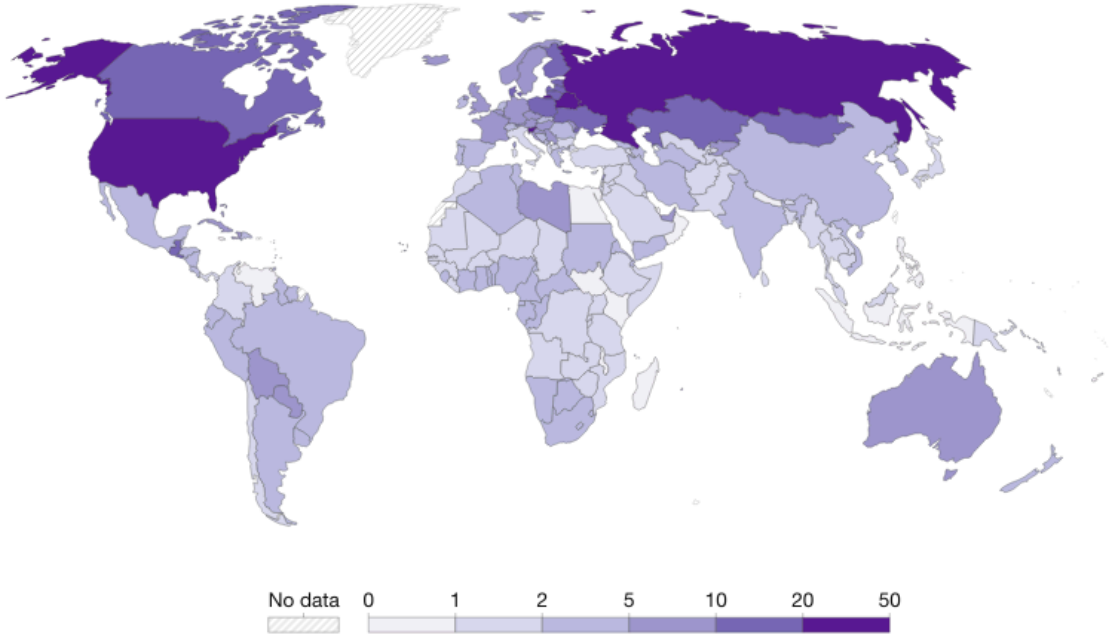

Figure 1: Alcohol and drug use disorder death rates per 100,000 people in 2019.[182]

Manufacturing Nations

Countries in this bloc include many European nations, the U.S., Canada, Australia, and New Zealand. These countries generally produce large amounts of synthetic psychoactive substances spearheaded by major companies. Furthermore, they tend to have a more liberal political ideology and social culture. With significant portions of their population affected by the illicit drug trade and drug abuse within their nations, they are likely to support strong regulations on the cultivation of natural psychoactive substances along with illicit drug trafficking. They also highly support the medical usage and research of psychoactive drugs due to its economic benefits and likely advocate for the decriminalization of drugs under high government regulation and rehabilitation programs.[183] These nations are likely willing to provide international aid to developing nations for pharmaceutical drugs and support the commodification of pharmaceutical drugs but restricting natural psychoactives. Furthermore, this bloc is likely to support supranational overview on drug regulations and oppose more authoritarian ways of drug control. Overall, this bloc is a strong advocate for a liberal approach to drug usage and is likely to pursue rehabilitation solutions.

[182] Hannah Ritchie et al., "Opioids, cocaine, cannabis and other illicit drugs," *Our World in Data*, 2022, https://ourworldindata.org/drug-use.
[183] EMCDDA, "European drug prevention quality standards (EDPQS)," *European Monitoring Centre for Drugs and Drug Addiction,* January 12, 2011, https://www.emcdda.europa.eu/publications/manuals/prevention-standards_en.

Strict Regulation Nations

With high levels of illicit trafficking within these nations and a lack of economic incentive, it is likely for these nations to adopt extremely strict regulation on the drug trade.[184] These nations include China, Brazil, India, Vietnam, France, Thailand, Saudi Arabia, and Iraq, and are often where drug possession and cultivation can lead to harsh sentences. This is due to the cultural, political, and religious influences in the region that prohibit drug use and have made harsh anti-drug policies common.[185] However, many countries, such as the UAE and Iran, have taken steps to reduce punishments for drug offences and introduced policies for decriminalization and promoting pharmaceutical drugs. Countries in this bloc are likely to be more conservative and thus adopt an anti-drug stance. Nations such as Japan and China permit some pharmaceutical drugs while other states permit all. The commodification of drugs for such nations should be prevented as it strengthens drug culture and entails weaker regulations. Furthermore, many nations in this group advocate for regulations to be done through states rather than international regulations. Ultimately, this bloc is a proponent of a stricter and more restrictive usage of drugs and is likely to support harsher judicial punishment.

Organic Cultivation Nations

These nations include Andean nations such as Colombia, Bolivia, and Peru, along with other countries that produce much of the organic raw materials for the global drug supply.[186] Despite often being the focus of international anti-drug efforts, such nations have tolerated the cultivation, production, and distribution of psychoactive substances.[187] However, the policies of such nations vary depending on the economic significance of its production. Nations that tax drug cultivation, such as Afghanistan and Pakistan, are likely to support the decriminalization and legalization of drugs due to their significant economic stakes in international drug trade.[188] In contrast, nations such as Colombia and Bolivia may advocate for stricter regulation due to the social issues it has caused as drug cultivation is often illegally done. The commodification of drugs for such nations is thus able to open up increased economic opportunity or intensify pre-existing issues. This bloc shares economic incentives to expand the drug trade and reduce regulations.

Neutral Nations

This group mainly includes smaller nations and many African nations which are largely neutral on drug regulations so long as they have an adequate supply of pharmaceutical drugs.[189] Such nations do not have much economic stake in increased regulations and do not suffer from an internal drug trafficking crisis, meaning they likely support the broad agreements that allow for national sovereignty and freedom.[190] Furthermore, these

[184] S Sen, "Heroin Trafficking in the Golden Triangle," *Office of Justice Programs,* 1991, https://www.ojp.gov/ncjrs/virtual-library/abstracts/heroin-trafficking-golden-triangle.
[185] Mohammad Hossein Mehrolhassani et al., "Cross-country Comparison of Treatment Policies Facing the Drug Abuse in Five Selected Countries," *National Library of Medicine,* April, 2019, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6633066/.
[186] Ibid.
[187] Ibid.
[188] Vanda Felbab-Brown, "Drugs, security, and counternarcotics policies in Afghanistan," *Brookings*, October 29, 2020, https://www.brookings.edu/articles/drugs-security-and-counternarcotics-policies-in-afghanistan/.
[189] Yusuff Adebayo Adebisi et al., "Revisiting the issue of access to medicines in Africa: Challenges and recommendations," *Wiley Online Library,* June 15, 2022, https://onlinelibrary.wiley.com/doi/full/10.1002/puh2.9.
[190] Ibid.

nations are likely in support of commodification and allowing for competition within the market as it increases the accessibility of pharmaceutical drugs.[191] These nations usually receive foreign aid and are likely to support nations that provide aid and help enforce regulated drug use.

[191] Ibid.

Discussion Questions

1. Should regulations be lowered in the drug market to be more accessible for small businesses and make pharmaceuticals more accessible?
2. Should psychoactive substances be decriminalized? Do nations have a responsibility over its drug users, or are drug users independently responsible for their actions?
3. How do nations monitor the internet in order to prevent the trade of illicit drugs? Should e-commerce for pharmaceuticals be banned?
4. What structures can be implemented in order to ensure pharmaceutical practices are adhered to? How can we improve on existing methods of data collection and surveillance?
5. How can drug demand be reduced? Should nations invest in treatment and rehabilitation rather than deterrence?
6. What are the impacts of drug use on communities? How can drug cartels and illicit drug trafficking be deterred?

Additional Resources

Implementation of all International Drug Policy Commitments:
https://www.unodc.org/documents/hlr//19-V1905795_E_ebook.pdf

The Commodification of Medical and Health Care:
https://pubmed.ncbi.nlm.nih.gov/10472814/

Report of the Senate Special Committee on Illegal Drugs:
https://sencanada.ca/content/sen/committee/371/ille/rep/repfinalvol3-e.pdf

Opioids, Cocaine, Cannabis and other Illicit Drugs:
https://ourworldindata.org/illicit-drug-use

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Prevention of Bioterrorism

Overview

Throughout human history, nature's biological agents have been one of the most effective killers in the world. With diseases such as the bubonic plague and influenza causing the deaths of millions across the ages, biological agents have proven to have catastrophic social and economic ramifications.[192] Since such agents are difficult to detect and prevent, they have been weaponized in many ways throughout history, ranging from state-sponsored biological warfare to domestic poisonings. With recent advances in biotechnology, widespread investment into bioengineering from both private and government organizations, and the proliferation of such technology across the globe, bioterrorism continues to be a prevalent issue.

Bioterrorism is defined by INTERPOL as the deliberate release of biological agents (e.g. viruses, bacteria, and toxins) to cause illness in people, animals, or plants.[193] Generally, the terms bioterrorism and biowarfare are used interchangeably, with bioterrorism including non-state actors while biowarfare often referring specifically to interstate conflicts. Although bioterrorism has historically received little attention, advancement in technology has made the threat much more serious since the 2000s.[194] With a 26% growth in the biotechnology market due to advances in medical technology and increased demand in the healthcare sector, there has been a proliferation of biotechnology—technologies that harness the functions of organisms—across the world.[195, 196] This has streamlined manufacturing processes for pharmaceuticals and allowed for a surplus in biotechnology for distribution.[197] Although this growth benefits developing regions such as Africa by making pharmaceuticals more accessible, it has also increased the risk for criminal organizations to obtain biological agents, whether intentionally or unintentionally.[198] This, accompanied by a surge in biological research in areas such as virology, has made bioterrorism a growing concern.

Currently, strong international regulations against state biotechnology research and development have been established. By the Biological Weapons Convention of 1972 (BWC), the production, distribution, and development of biological weapons in "quantities that have no justification for prophylactic, protective or other peaceful purposes" have become firmly prohibited by the international community.[199] However, despite these regulations, many nations, such as North Korea, are still suspected of developing biological weapons or sanctioning state-sponsored bioterrorism. Furthermore, the BWC has also largely overlooked the use of

[192] Fid Backhouse et al., "plague of Justinian," *Encyclopedia Britannica*, August 21, 2023. https://www.britannica.com/event/plague-of-Justinian.
[193] "Bioterrorism," *INTERPOL,* n.d, https://www.interpol.int/en/Crimes/Terrorism/Bioterrorism.
[194] Francesco Urbano et al., "Case Study – Italy," *Link Springer*, August 31, 2012, https://link.springer.com/chapter/10.1007/978-94-007-5273-3_13.
[195] "Biotechnology Market," *Precedence Research*, July, 2023, https://www.precedenceresearch.com/biotechnology-market.
[196] T. Editors of Encyclopaedia Britannica, "biotechnology," *Encyclopedia Britannica,* July 3, 2023, https://www.britannica.com/technology/biotechnology.
[197] Ibid.
[198] Lee Holtz, "Figure of the week: Africa's trade in pharmaceuticals," *Brookings*, December 9, 2021, https://www.brookings.edu/articles/figure-of-the-week-africas-trade-in-pharmaceuticals/.
[199] Stefan Riedel, "Biological warfare and bioterrorism: a historical review," *Baylor University Medical Center Proceedings* 17, no. 4 (October 2004): 400-06, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1200679/.

bioweapons by individuals and criminal organizations, lacking a robust international system to prevent such attacks.[200]

Recent events such as the 2009 swine flu pandemic show the potential of biological agents to cause events as devastating as nuclear weapon attacks; clearly, the need to ensure that relevant technology is strictly regulated is becoming increasingly important.[201] Nations such as the United States argue that prevention measures for bioterrorism rely heavily on early warning to prevent deaths and panic and advocate for international supervision and enforcement.[202] However, other global superpowers, such as Russia, argue that such international intervention results in an infringement of national sovereignty and could be corrupted.[203] Therefore, it is clear that bioterrorism is a deeply complex issue and requires careful evaluation of a multitude of factors.

As the threat of bioterrorism grows with time, delegates must consider factors such as geopolitical tension, national sovereignty, private corporations, surveillance, and the economy. To adequately address bioterrorism, it is important for delegates to formulate resolutions that take into account differing national interests, international security, and prevention measures.

Timeline

1346 — The Golden Horde sieges the city of Caffa, a Genoese city, and throws plague-infested bodies of Mongol warriors into the city, spreading the disease. Four ships sail from Caffa to escape the epidemic, an act which could have caused the Black Death.[204]

July 24, 1763 — William Trent, captain of the British garrison at Fort Pitt, hands the Indigenous Americans blankets infected with smallpox, causing an epidemic that claimed hundreds of lives.[205] This action helped relieve the siege and contributed to British victory during Pontiac's War.[206]

August 27, 1874 — The Brussels Declaration produces the first international document on the rules of war, with Article 13.c strictly forbidding the use of poisons and biological weapons.[207] The Brussels Declaration establishes the groundworks for international rules on war.

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[200] Ibid.
[201] Francesco Urbano et al., "Case Study – Italy," *Link Springer*, August 31, 2012, https://link.springer.com/chapter/10.1007/978-94-007-5273-3_13.
[202] Daryl Kimball, "The Biological Weapons Convention (BWC) at a Glance," *Arms Control Association*, February, 2022, https://www.armscontrol.org/factsheets/bwc#:~:text=Security%20Council%20voting%20rules%20give,those%20to%20conduct%20BWC%20investigations.
[203] Ibid.
[204] Mark Wheelis, "Biological Warfare at the 1346 Siege of Caffa," *Emerging Infectious Diseases* 8, no. 9 (September 2002): 971-75, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2732530/.
[205] Marc Barton, "Germ Warfare and the Siege of Fort Pitt," *Past Medical History*, November 13, 2017, https://www.pastmedicalhistory.co.uk/germ-warfare-and-the-siege-of-fort-pitt/.
[206] Ibid.
[207] Tracey Leigh Dowdeswell, "The Brussels Peace Conference of 1874 and the Modern Laws of Belligerent Qualification," *Osgoode Hall Law Journal* 54, no. 3 (August 4, 2017): 805-50, https://digitalcommons.osgoode.yorku.ca/ohlj/vol54/iss3/5/.

1876 — Robert Koch publishes his work on the anthrax bacterium *bacillus anthracis*, which is widely considered to be the start of modern bacteriology. Koch outlines methods to isolate and produce pathogens which would increase the threat of bioweapons.[208]

July 29, 1899 — The Hague Convention of 1899 is signed, providing the first comprehensive document on the international rules on war. This treaty prohibits the use of chemical gases and is internationally recognized.[209]

October 18, 1907 — The Hague Convention of 1907 is adjourned. The convention expanded on the Hague Convention of 1899 by amending some aspects of the treaties and increasing focus on naval warfare. [210]

1915–1916 — During World War I, Germany uses biological agents, such as anthrax, in covert operations. These operations include the use of glanders to kill livestock and clandestine programs to spread cholera in Italy and the plague in Russia.[211]

1925 — The Red Army's Military-Chemical Directorate is formed and chemist Yakov Moisseevich Fishman is put in charge.[212] This is widely considered the beginning of the Soviet bioweapons program and Yakov Moisseevich Fishman would be viewed as its leading architect.

June 17, 1925 — The Geneva Protocols, which prohibit the use of "bacteriological methods of warfare" and generally seen as a prohibition of biological warfare in general, is ratified by 65 states in Geneva.

1932–1945 — The Japanese government is believed to have developed the infamous Unit 731 program during this time. This program ran human experiments on diseases and released the viruses on civilian populations.[213]

October 1952 — Members of the Mau Mau movement in Kenya use a local plant toxin, *Synadenium grantii*, to poison cattle from British farmers—an example of agroterrorism.[214]

November 25, 1969 — U.S. President Richard Nixon delivers the "Statement on Chemical and Biological Defense Policies and Programs," which shuts down the Biological Warfare Laboratories (BWL) by repurposing its laboratories for defensive biological research and redirects its funding towards the newly named U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID).[215] [216]

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[208] Steven M Opal, "A Brief History of Microbiology and Immunology," In *Vaccines: A Biography* (Springer New York, 2009), 31-56, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7176178/.
[209] T. Editors of Encyclopaedia Britannica, "Hague Convention," *Encyclopedia Britannica*, June 8, 2023, https://www.britannica.com/event/Hague-Conventions.
[210] Ibid.
[211] Stefan Riedel, "Biological warfare and bioterrorism: a historical review," *Baylor University Medical Center Proceedings* 17, no. 4 (October 2004): 400-06, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1200679/.
[212] Ioannis Nikolakasis et al., "The History of Anthrax Weaponization in the Soviet Union," *Cureus* 15, no. 3 (March 2023): https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10134958/.
[213] Stefan Riedel, "Biological warfare and bioterrorism: a historical review," *Baylor University Medical Center Proceedings* 17, no. 4 (October 2004): 400-06, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1200679/.
[214] Haralampos Keremidis et al., "Historical Perspective on Agroterrorism: Lesson Learned from 1945 to 2012," *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science* 11, no. 1 (September 2013): 17-24, https://www.liebertpub.com/doi/10.1089/bsp.2012.0080.
[215] "Statement on Chemical and Biological Defense Policies and Programs," *The American Presidency Project*, n.d, https://www.presidency.ucsb.edu/documents/statement-chemical-and-biological-defense-policies-and-programs.
[216] Brian Hoyle, "USAMRIID (United States Army Medical Research Institute of Infectious Diseases)," *Encyclopedia.com,* July 26, 2023, https://www.encyclopedia.com/politics/encyclopedias-almanacs-transcripts-and-maps/usamriid-united-states-army-medical-research-institute-infectious-diseases.

April 10, 1972 — The Biological Weapons Convention (BWC), is signed, establishing an international norm against the use of biological weapons.[217] Considered as one of the most comprehensive documents on the topic, 185 nations have since been parties to the treaty.[218]

April, 1974 — The Soviet Union establishes Biopreparat which extended their clandestine biological weapons program that started in 1925 and became the largest biological programme in the world, involving 30,000-40,000 personnel.[219] The program ran until 1992 and was revealed by Soviet defectors.

April 2, 1979 — An anthrax leak occurs in Sverdlovsk, Soviet Union resulting in the deaths of at least 64 people.[220] The leak is covered up by Soviet officials who blame it on the consumption of tainted meat in the area. It was only admitted in 1992 by Russian President Boris Yeltsin that the leak was from a military facility. [221]

1978–1983 — Citizens in Laos, Cambodia, and Afghanistan reported that aircrafts were dropping a yellow liquid which caused harmful symptoms and death, dubbed the 'yellow rain'. However, scientific explanations have since been offered on the substance being caused by bees and natural phenomena.[222]

September 1984 — The Rajneeshpuram cult in Oregon in the United States orchestrates a biological attack on 10 local salad bars by infecting the food with salmonella. As the largest bioterrorism case in the U.S., this seriously injured 751 people and hospitalized 45 others. [223]

August 2, 1990 — U.S. troops receive vaccines such as the toxoid vaccine against anthrax after suspecting the Iraqi military of possessing biological weapons during the construction of military bases. [224]

March 18, 1997 — The Aum Shinrikyo, a Japanese cult, launches a biological attack on the Tokyo subway system with sarin gas, a biological agent, harming 5,800 people and killing three.[225]

September 18, 2001 — Following the September 11 attacks, letters containing anthrax spores are mailed to news agencies and two senators of the United States. These attacks lead to five deaths and injured 17 as well as causing widespread panic.[226] [227]

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[217] D Freaks, "The Biological Weapons Convention," *Revue Scientifique Et Technique De L'OIE* 36, no. 2 (August 1, 2017): 621-28, https://pubmed.ncbi.nlm.nih.gov/30152458/.
[218] "Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction," *Office for Disarmament Affairs*, n.d, https://treaties.unoda.org/t/bwc.
[219] Kenneth Alibek, "Biological Weapons in the Former Soviet Union: An Interview with Dr.Kenneth Alibek," By Jonathan B. Tucker. *The Nonproliferation Review*, 1999, https://www.nonproliferation.org/wp-content/uploads/npr/alibek63.pdf.
[220] "The 1979 Anthrax Leak in Sverdlovsk," *PBS*, n.d, https://www.pbs.org/wgbh/pages/frontline/shows/plague/sverdlovsk/.
[221] R. Jeffrey Smith, "Yeltsin Blames '79 Anthrax on Germ Warfare Efforts," *The Washington Post*, June 16, 1992, https://www.washingtonpost.com/archive/politics/1992/06/16/yeltsin-blames-79-anthrax-on-germ-warfare-efforts/fea56f2d-bf9e-4787-b6ec-86bf190f3ddb/.
[222] Barry R. Schneider, "yellow rain," *Encyclopedia Britannica*, November 18, 2016, https://www.britannica.com/science/yellow-rain.
[223] Matt Novak, "The Largest Bioterrorism Attack in US History Was an Attempt to Swing an Election," *Gizmodo*, November 1, 2016, https://gizmodo.com/the-largest-bioterrorism-attack-in-us-history-was-an-at-1788407782.
[224] Stefan Riedel, "Biological warfare and bioterrorism: a historical review," *Baylor University Medical Center Proceedings* 17, no. 4 (October 2004): 400-06, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1200679/.
[225] "Aum Shinrikyo: The Japanese cult behind the Tokyo Sarin attack," *BBC*, July 6, 2018, https://www.bbc.com/news/world-asia-35975069.
[226] CNN Editorial Research, "2001 Anthrax Attacks Fast Facts," *CNN*, March 25, 2023, https://www.cnn.com/2013/08/23/health/anthrax-fast-facts/index.html.
[227] Farhad Manjoo, "The Anthrax Truth Movement," *Slate*, August 7, 2008, https://slate.com/technology/2008/08/the-anthrax-truth-movement-defends-bruce-ivins.html.

June 13, 2018 — Tunisian immigrant Seif Allah H. is found to be in possession of ricin, a biological poison, in Cologne, Germany after a police raid. It is believed that he was inspired by ISIS ideology and acquired the materials online.[228]

March 11, 2020 — The World Health Organization (WHO) declares COVID-19 a pandemic. The event causes renewed discussions on global biodefense systems as well as speculation on the origins of the virus.[229]

Historical Analysis

Throughout recorded human history, the use of nature in conflict has been prevalent and deadly.

Of the weapons nature provides, biological agents have proven repeatedly to have been the most efficient—small, silent, and, in many cases, incredibly contagious. Compared to chemical weapons whose impacts are mostly limited to a regional level, biological weapons have the potential to spread far beyond the origins of attack and can result in catastrophic damages on a global scale.

Biological warfare dates back to the Bronze Age, with the Hittites, an ancient empire in modern-day Turkey, suspected to have intentionally spread the Hittite Plague, tularemia, in order to gain an advantage over their enemies.[230] However, early cases of biological warfare are difficult to gauge due to conflicting records and a lack of documents. That said, among these early cases, the Siege of Caffa in 1345 was by far the most notable due to it being both well recorded and impactful.[231] During this siege, the besieging Mongol army flung corpses infested by the bubonic plague over the city walls, spreading the disease to the city's population.[232] This caused four Genoese ships to flee from Caffa, modern day Feodosia, which could have caused the Black Death in Europe.[233] It is one of the earliest demonstrations of both the devastating intended and unintended consequences of bioweapons.

Biological weapons became a focus of international politics during the 18th and 19th century. The arrival of the Europeans in the 15th century brought diseases, such as smallpox, which decimated the local Indigenous populations.[234] Due to a lack of natural immunity among the native population, the Native American population declined by as much as 90% between 1450 and 1650, with an estimated death toll of 27 million.[235] This unintended consequence of European arrival paved the way for European conquests and further demonstrated the potential consequences of biological agents.[236] Furthermore, a combination of increased technological advancement in modern bacteriology such as the Petri dish, which allowed for bacteria cultivation and the isolation of the anthrax bacterium, and an ever increasing global population made biological threats more

[228] Florian Flade, "The June 2018 Cologne Ricin Plot: A New Threshold in Jihadi Bio Terror," *Combating Terrorism Center*, August, 2018, https://ctc.westpoint.edu/june-2018-cologne-ricin-plot-new-threshold-jihadi-bio-terror/.
[229] Meredith Healey, "Pandemic chaos proves the world isn't prepared for biological warfare, experts say," *CBC*, April 24, 2022, https://www.cbc.ca/news/politics/biowarfare-bioweapon-covid-pandemic-1.6427565.
[230] Siro Igino Trevisanato, "The 'Hittite Plague', an Epidemic of Tularemia and the First Record of Biological Warfare," *Medical Hypotheses* 69, no. 6 (January, 2007): 1371-74, https://doi.org/10.1016/j.mehy.2007.03.012.
[231] Mark Wheelis, "Biological Warfare at the 1346 Siege of Caffa," *Emerging Infectious Diseases* 8, no. 9 (September 2002): 971-75, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2732530/.
[232] Ibid.
[233] Ibid.
[234] "The Impact of European Diseases on Native Americans," *Encyclopedia.com*, August 22, 2023, https://www.encyclopedia.com/science/encyclopedias-almanacs-transcripts-and-maps/impact-european-diseases-native-americans.
[235] Ibid.
[236] Ibid.

dangerous. However, with the Enlightenment movement, which saw an increase in scientific research and the rise of humanitarianism, the harmful effects of biological weapons caused norms to be built against state sponsored bio-attacks. This culminated with the Hague Conventions of 1899 and 1907, proposed by Russian Tsar Nicholas II and marked the beginning of multilateral treaties governing the rules of war.[237] These treaties were meant to ensure that warfare was conducted in a humane manner by regulating its weapons, treatment towards prisoners of war (POW), and civilian protection. However, besides legally binding nations to the treaty's conditions, there were not any enforcement measures to ensure its conditions were upheld. This became cemented with the Geneva Protocols of 1925 which banned "asphyxiating, poisonous or other gasses, and of all analogous liquids, materials or devices," officially prohibiting biological warfare.[238] Therefore, entering the 20th century, there were minimal cases of active biological attacks as it was internationally regarded as a war crime and would warrant severe repercussions at the conflict's conclusion.

Despite this, however, nations continued to develop biological programs and weapons covertly as these multilateral treaties failed to include enforcement measures. This can be seen with the German bioweapons program during World War I. Although biological weapons were scarcely used actively in the First World War, the conflict saw an increase in the research and development of these weapons in secret.[239] The only confirmed instance of biological weapons were in cases of agroterrorism, when Germans used anthrax to kill U.S. livestock.[240]

Biological weapons were used more prominently in World War II, however, and the Japanese bioweapons program in World War II was particularly active. The Japanese program exhibited the deadly consequences of bioweapons as Unit 731 and Unit 100, a unit based in Manchukuo with similar purposes as Unit 731, conducted horrific human tests that killed 8,000–12,000 citizens and attacks that killed 200,000–300,000 people.[241] Although only the Japanese utilized bioweapons on a mass scale against civilians, numerous nations such as Great Britain, the U.S, Canada, and the Soviet Union also conducted experiments and tests on animals to gauge the military effectiveness of bioweapons; however, the Japanese were by far the most extreme in their biological weapons program and the only nation to conduct human tests.[242] Upon the end of World War II, major world powers continued to develop offensive bioweapons programs; most notably, the U.S. and the Soviet Union began an arms race during the Cold War. Along with increased research into offensive bioweapons programs, these two superpowers also funded biodefence programs which involved the development of vaccines against harmful biological agents. These actions are a testament of the pre-existing international stigma against biowarfare that all these programs were conducted clandestinely and, especially in the U.S., under heavy regulations.

However, during this period, concerns over biological weapons began to rise as the threat of bio-attacks became evident. The creation of biological cluster bombs targeted towards cities and the isolation of extremely deadly

[237] T. Editors of Encyclopaedia Britannica, "Hague Convention," *Encyclopedia Britannica*, June 8, 2023, https://www.britannica.com/event/Hague-Conventions.
[238] T. Editors of Encyclopaedia Britannica, "Geneva Gas Protocol," *Encyclopedia Britannica*, February 28, 2023, https://www.britannica.com/event/Geneva-Gas-Protocol.
[239] Stefan Riedel, "Biological warfare and bioterrorism: a historical review," *Baylor University Medical Center Proceedings* 17, no. 4 (October 2004): 400-06, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1200679/.
[240] Ibid.
[241] "Unit 731," *Academic Accelerator*, n.d, https://academic-accelerator.com/encyclopedia/unit-731.
[242] Stefan Riedel, "Biological warfare and bioterrorism: a historical review," *Baylor University Medical Center Proceedings* 17, no. 4 (October 2004): 400-06, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1200679/.

agents such as the botulinum toxin illustrated the terrifying potential of bioweapons. [243] Furthermore, another significant threat during the 1950s was the contamination of agriculture and water supplies, which could cause both medical and economic devastation. This was the case with the Mau Mau movement in Kenya, a movement dedicated to freeing Kenya from British colonization, which, in 1952, poisoned cattle in an attempt to drive British farmers out.[244]

These concerns led to the first national biodefence programs during the 1950s, such as the USAMRIID and the Soviet Scientific-Research Sanitary Institute (NIIS). Army facilities became dedicated to creating vaccines for diseases and toxins, such as the anthrax vaccine and the botulinum toxin vaccine, which was distributed among soldiers and citizens. Furthermore, advancements in gas mask technology and the increased accessibility of medical masks and gloves provided more commercial options to prevent biological attacks.[245] Although the military had access to more effective gas masks, these commercial options proved to be effective during pandemics and for other biological agents. However, bioweapons act slowly and are difficult to detect immediately, meaning a great deal of harm could already be done by the time an attack is identified, as demonstrated by the Rajneeshpuram attacks, where it took over a day before the source of the salmonella was found. During the 1970s, the primary focus of prevention was in the form of early warning systems, including through international inspections, Security Council resolutions, and domestic law enforcement inspections of suspicious packages. Biodefence during this stage strived to ensure threats were neutralized before they became active, as the perpetrators of bio-attacks often get a head start on investigations due to most bioweapons having an incubation period.[246] As research was further conducted on the deadly potential of bioweapons and the varying prevention measures available for nations, international consensus was reached on formally outlawing the use of bioweapons. This became the Biological Weapons Convention (BWC) of 1972, a culmination of the last century efforts to ban biological weapons.

Although this treaty explicitly prohibited bioweapons, it failed to include enforcement measures within the document. Therefore, many nations are speculated to have continued to conduct offensive biological weapon programs clandestinely in much of, if not greater capacity, than before. Confirmed cases include the Soviet Union, South Africa, and Iraq. South Africa's biological program, known as Project Coast, developed a variety of offensive bioweapons, and Iraq's biological weapons program was only revealed after the First Persian Gulf War when Iraq was powerless to stop the UN Special Commission inspection.[247, 248]

However, it was the Soviet's Biopreparat program that was the most extensive. Starting in 1925, the Soviet biological weapons program was a highly guarded secret as they conducted numerous tests to study biological weapons. After the conclusion of World War II, the Soviet Union, similar to the U.S., used data from the Japanese

[243] Jeanne Guillemin, "Scientists and the history of biological weapons: A brief historical overview of the development of biological weapons in the twentieth century," *EMBO Reports* 7, (July, 2006): 45-49, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1490304/.
[244] Piers D. Millet, "Biological Weapons: Attacking the Food Chain," *RUSI*, November 19, 2007, https://www.rusi.org/publication/biological-weapons-attacking-food-chain.
[245] Mitch Jacoby, "Building A Better Gas Mask," *C&en*, December 8, 2014, https://cen.acs.org/articles/92/i49/Building-Better-Gas-Mask.html.
[246] J. A. Foran et al., "Early Warning Systems for Hazardous Biological Agents in Potable Water," *Environmental Health Perspectives* 108, no. 10 (October, 2000): 993-95, https://ehp.niehs.nih.gov/doi/10.1289/ehp.00108993.
[247]Stephen F. Burgess et al., "The Rollback of South Africa's Chemical and Biological Warfare Program," *Air University*, April, 2001, https://www.airuniversity.af.edu/Portals/10/CSDS/Books/therollbackofsoafricachembio2.pdf.
[248] T. Editors of Encyclopaedia Britannica, "UNSCOM," *Encyclopedia Britannica*, March 20, 2023, https://www.britannica.com/topic/UNSCOM.

biological weapons program to further their own research and development.[249] With the signing of the BWC, the Soviet Union continued their bioweapons program clandestinely, focusing on further researching biological agents.[250] It became the largest bioweapons program in the world, employing 30,000–40,000 personnel and responsible for the coverup of the Sverdlovsk anthrax leak.[251] The program would continue to be denied by the Soviet Union until its fall in 1991, which, by then, nearly two decades of biological research had already been conducted.[252]

These cases demonstrate the ineffectiveness of regulations when international bodies do not have the power to ensure they are met. Unconfirmed speculation can also cause indirect consequences, as in the case of the Iraq War when the U.S. accused Iraq of continuing to possess Weapons of Mass Destruction (WMDs) and declared war upon this unfounded accusation.[253]

Past UN/International Involvement

Biological Weapons Convention of 1972

Considered to be the most important and comprehensive document on biological weapons, the Biological Weapons Convention (BWC) is an international treaty prohibiting the development, production, or use of biological weapons. Signed by 185 nations, with South Sudan being the most recent in 2023, nearly all of the United Nations' 193 member states have acceded to the treaty.[254] The most notable nation that has not signed the treaty yet is Israel, which has not signed due to national interests. The treaty consists of 15 articles which outline the functions of the treaty, the national responsibility to uphold the agreements, international cooperation against biological weapons, and regulation standards.[255] International cooperation on biological weapons are stated in Article V, VI, VII, and X, which give nations the right to bring complaints to the Security Council, submit to investigations, and cooperate with other states through lending supplies and resources.[256] The treaty constructed strong international stigmas against the development of the biological weapons and effectively ended state sponsored bioterrorism.

However, the original treaty omitted any strong enforcement measures, such as mandatory international inspections, transparent sharing of biological research, and global early warning systems, which have impacted its real-world effectiveness. Although a legally binding document, there are insufficient mechanisms in place to ensure nations are abiding by the treaty. Currently, international inspections on nations require a Security Council resolution, which is typically difficult to obtain due to the conflicting national interests of its five

[249] Stefan Riedel, "Biological warfare and bioterrorism: a historical review," *Baylor University Medical Center Proceedings* 17, no. 4 (October 2004): 400-06, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1200679/.
[250] Kenneth Alibek, "Biological Weapons in the Former Soviet Union: An Interview with Dr.Kenneth Alibek," By Jonathan B. Tucker. *The Nonproliferation Review*, 1999, https://www.nonproliferation.org/wp-content/uploads/npr/alibek63.pdf.
[251] Ibid.
[252] Ibid.
[253]Glenn Klessler, "The Iraq War and WMDs: An intelligence failure or White House spin?," *The Washington Post*, March 22, 2019, https://www.washingtonpost.com/politics/2019/03/22/iraq-war-wmds-an-intelligence-failure-or-white-house-spin/.
[254] "South Sudan becomes the 185th State Party to the Biological Weapons Convention," *Parliamentarians for Global Action*, February 15, 2023, https://www.pgaction.org/news/south-sudan-bwc-accession.html.
[255] "Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction," *United Nations*, April 10, 1972, https://www.un.org/en/genocideprevention/documents/atrocity-crimes/Doc.37_conv%20biological%20weapons.pdf.
[256] Ibid.

permanent members: China, Russia, France, the U.K. and the U.S. This affects the international community's ability to uphold the treaty's condition and to ensure the non-proliferation of bioweapons technology. Review conferences of the treaty have since been held every five years to establish verification processes, though without much success.[257] For example, the Third Review Conference called for countries to declare their biological research and development programs, and vaccine production facilities but failed to agree on any form of international inspection.[258] These review conferences have sought to strengthen the BWC by politically binding states to exchange data on biological activities, such as research, and by establishing the Ad Hoc Group in 1995, a body of governmental experts tasked with negotiating a legally binding protocol for the BWC.[259] In 2001, their protocol was rejected and the mandate was abolished. Confidence-building measures continue to be a major area of discussion during BWC meetings.

The North Atlantic Treaty Organization

The North Atlantic Treaty Organization (NATO) is a military alliance of 31 North American and European countries focused on defence. The nations in this alliance are mostly economically stable, and this political body holds the majority of the world's wealth. Biodefence policy for NATO includes many components, such as the Arms Control, Disarmament, and Weapons of Mass Destruction Non-proliferation Centre (ACDC); the Combined Joint Chemical Biological Radiological and Nuclear (CBRN) Defence Task Force; and the NATO Science for Peace and Security (SPS) Programme.[260] Although there exists many more subunits for biodefence, these are the main bodies, and they fall under NATO's WMD policy as a whole.

The ACDC, established in 2017, focused on preventing the proliferation of bioweapons internationally through negotiations and preventing non-state bodies from obtaining such weapons.[261] Historically, the ACDC has been focused on disarmament treaties among NATO members after the fall of the Soviet Union. In addition, it helped negotiate treaties such as the Treaty on Open Skies, which allowed for aerial surveillance over nations.[262] The ACDC has also applied significant political pressure on Russia, which indirectly aided many non-NATO members, such as Ukraine, from Russian encroachment.[263]

The Combined Joint CBRN Defence Task Force is a deployable force used to respond to CBRN attacks in NATO nations, which includes aiding the civilian population and apprehending perpetrators.[264] Finally, the SPS programme sees scientific cooperation across NATO nations to develop new methods and technologies to combat biological agents along with playing a major role in strengthening civil resistance to bioterrorism.[265] The SPS has also played a significant role in sharing research with non-NATO nations as well.[266]

[257] Daryl Kimball, "The Biological Weapons Convention (BWC) at a Glance," *Arms Control Association*, February, 2022, https://www.armscontrol.org/factsheets/bwc.
[258] Ibid.
[259] Ibid.
[260] "Weapons of Mass Destruction," *NATO*, February 27, 2023, https://www.nato.int/cps/en/natohq/topics_50325.htm.
[261] Ibid.
[262] "Arms control, disarmament and non-proliferation in NATO," *NATO*, February 27, 2023, https://www.nato.int/cps/en/natohq/topics_48895.htm.
[263] Ibid.
[264] "Weapons of Mass Destruction," *NATO*, February 27, 2023, https://www.nato.int/cps/en/natohq/topics_50325.htm.
[265] Ibid.
[266] Ibid.

NATO also plays a critical role in international biodefence as it has access to both economic and technological resources, with nations such as the U.S. and Germany being global leaders in biotechnology.[267] Their international outreach programs help provide training, technology, and aid to other nations, strengthening international protection against bioterrorism. However, NATO primarily provides aid to nations leaning towards Western ideals; some past engagements have caused many nations to form a distrust in NATO.

INTERPOL Involvement

The International Criminal Police Organization (INTERPOL) is an intergovernmental agency focused on preventing global crime. Its involvement with bioterrorism prevention has primarily been focused on aiding states with developing legislation and methods against biological attacks. This role has been primarily designated to INTERPOL's Bioterrorism Prevention Unit, which has been developing strategies against bioterrorism, such as Project PANDORA in 2018, to improve the capacity for law enforcement surveillance on the internet.[268] The focus of INTERPOL has been primarily on terrorist attacks and educating the public on bioterrorism attacks through workshops on chemical, biological, radiological, and nuclear terrorism. Furthermore, INTERPOL has also focused significantly on the role of the internet in bioterrorism through its publication *INTERPOL Operational Manual on Investigating Biological and Chemical Terrorism on the Darknet,* which outlines procedures for preventing the spread of biological agents online.[269] These procedures involve the reporting and inspection of suspicious packages, along with the use of INTERPOL's criminal databases.

Working with other intergovernmental agencies such as UNODC and UNOCT, INTERPOL has continued developing curriculum on the International Legal Framework against CBRN Terrorism and has hosted workshops around the world.[270] In 2018, it sponsored a meeting with world leaders in Geneva, spreading awareness on the threat of non-state bioterrorism.[271] During this conference, INTERPOL also advocated for improved infrastructure for rapid healthcare to civilians in order to mitigate attacks. However, resource limitations have caused INTERPOL to primarily play an advisory role.

Current Situation

Bioterrorism from Non-State Actors

In the 21st century, international attention has shifted to focus more on bioterrorism from non-state actors, including terrorist organizations, domestic cults, individuals, and more. As state usage of bioweapons becomes more regulated and technology becomes increasingly accessible, the threat of bio-attacks from these actors have risen considerably. Notable incidents such as the Amerithrax attacks and the spread of polio from terrorist

[267] Habib Ur Rehman, "12 Most Advanced Countries in Biotechnology," *Insider Monkey*, December 21, 2022, https://www.insidermonkey.com/blog/12-most-advanced-countries-in-biotechnology-1101225/.
[268] "INTERPOL Bioterrorism Prevention Unit's activities to support the global law enforcement community," *Global Partnership*, n.d, https://www.gpwmd.com/interpol-bioterrorism-prevention-unit.
[269] "Bioterrorism," *INTERPOL,* n.d, https://www.interpol.int/en/Crimes/Terrorism/Bioterrorism.
[270] "Countering Chemical, Biological, Radiological and Nuclear Terrorism," *United Nations Office on Drugs and Crime,* n.d, https://www.unodc.org/unodc/en/terrorism/expertise/countering-chemical-biological-radiological-and-nuclear-terrorism.html.
[271] "International experts meet on potential threat posed by new technologies," *INTERPOL*, December 5, 2018, https://www.interpol.int/fr/Actualites-et-evenements/Actualites/2018/International-experts-meet-on-potential-threat-posed-by-new-technologies.

organizations in Africa have drawn concern over existing prevention measures against domestic and international terrorist attacks.

Existing prevention measures against biological attacks from individuals are primarily reactionary, with early warning systems limited to border inspections and alerts. This has been effective in mitigating transnational biological attacks by preventing suspicious packages from crossing state borders and apprehending perpetrators through cooperation between law enforcement agencies. However, a lack of resources and communication between nations means such individuals often go unseen. Both domestic and international attacks are incredibly difficult to detect early on and mitigate, especially since the technology required to develop biological agents can be acquired quite easily. This can be seen in Al-Qaeda experiments in the late 1990s where they were able to develop ricin and botulinum agents, and associates were able to infiltrate Turkey, Britain, Spain, Italy, France, Sweden, Germany, and other countries in 2002 before U.S. intelligence uncovered the attacks.[272] The deadly potential of a successful attack is exemplified with the Japanese cult Aum Shinrikyo's attack on the Tokyo subway systems in 1995, which saw the release of sarin gas on three subway lines that injured 5,800 and killed three. The sarin gas used was part of a stockpile of chemical and biological weapons manufactured by the Aum Shinrikyo, further demonstrating the vulnerability of nations to domestic biological attacks.

Although prevention measures have improved since the early 2000s, with the formation of the Federal Select Program, a program which oversees the possession and use of harmful biological agents in the U.S., and renewed focus on cybersecurity around biotechnology data, there continues to be weaknesses in many countries.[273] Firstly, there exists a disparity between nations and their capacity to implement biodefence methods. Wealthier nations are often able to divert more resources towards biodefence compared to developing countries. Indeed, developed countries dominate in the biomedical research industry, with the U.S. being responsible for 45 percent of the world's total funding towards biomedical research in 2014.

As bioterrorism continues to be regarded as highly improbable by many countries, biodefence against non-state actors has continued to be underdeveloped; specifically, novel protection methods of water sources, such as DNA microchip arrays, molecular probes, and microrobots, have not gone through sufficient testing.[274] This coincides with the rapid advancement of biotechnology that ever increases the potential harms of bioweapons. For instance, genome editing technology, such as CRISPR-Cas9, has become incredibly cheap and accessible, potentially allowing for genetically modified biological agents in the future. Ultimately, current prevention measures against non-state actors are severely underdeveloped and require significant discussion on solutions such as international cooperation, the sharing of scientific research and data, and foreign aid to help establish early warning systems.

Case Study: The Iraq War

Following the conclusion of the First Persian Gulf War in 1991, the UN Security Council passed a resolution which established the United Nations Special Commission (UNSCOM) to ensure Iraq's stockpile of weapons of mass destruction (WMDs) was destroyed. Included among the WMDs were biological weapons, which made UNSCOM one of the first cases of international inspection on such weapons. UNSCOM's final report confirmed

[272] Rolf Mowatt-Larssen, "Al Qaeda's Pursuit of Weapons of Mass Destruction," *FP*, January 25, 2010, https://foreignpolicy.com/2010/01/25/al-qaedas-pursuit-of-weapons-of-mass-destruction/.
[273] "2022 Federal Select Agent Program," *CDC*, n.d, https://www.selectagents.gov/index.htm.
[274] Ibid.

Iraq's violation of the BWC, reporting 500 missing bombs of biological agents.[275] This UN inspection was met with significant political pushback from the Iraqi government, which cited it as an invasion of national sovereignty and accused the U.S. of conducting covert espionage using UNSCOM.[276] As tensions rose in the late 1990s between Iraq and UNSCOM, Iraq became increasingly uncooperative with the commission, forcing it to shutdown in 1998. In total, UNSCOM conducted 250 inspections of Iraq through tours of Iraqi bases, but it was blocked from visiting many sites. Iraq is largely believed to have still possessed WMDs when it withdrew in 1998.

However, in 1999, the UN passed Resolution 1284, which established the United Nations Monitoring, Verification, and Inspection Commission (UNMOVIC). The commission essentially served the same purpose as UNSCOM; namely, its goal was to remove Iraq's WMD capabilities and establish long term verification processes. The commission began operations in 2002 and inspected nearly 350 sites, finding 70 missiles that exceeded the maximum range; however, no evidence of CBRN weapons was found.[277] Despite this report, the U.S. and its allies launched an invasion of Iraq on March 19, 2003. Their stated goal was to remove the capacity for Saddam Hussein to use WMDs, claiming that Iraq had continued to develop biological weapons since the departure of UNSCOM.[278] The war became highly controversial as some parties claimed that the U.S. lacked evidence. The invasion was swift and the U.S. coalition gained control of Baghdad just 22 days later.

During the occupation—although chemical weapons were found—no substantial evidence indicated that Iraq had restarted their WMD program before the war. The war and the subsequent disbandment of the Iraqi Army resulted in a rapid destabilization of Iraq's state structure, allowing for an influx of terrorist organizations and insurgent activity. Iraq quickly became a hub for terrorist groups such as ISIS and Al-Qaeda, which have since repeatedly tried to develop biological weapons. Notably, in 2015, ISIS attempted to develop botulinum toxins for attacks in European states before a U.S.-led operation targeted and killed the lead engineer and proponent.[279] The Iraq War demonstrated the ineffectiveness of current verification processes and emphasized the need to establish more concrete and transparent inspections.[280] These sentiments continue to echo today with unfounded accusations by Russia against the U.S. on secret bioweapons facilities in Ukraine and demonstrates the importance of verifiable information and data on biological programs.[281]

Healthcare for Biological Agents

Healthcare systems across the world play a crucial role in mitigating the potential damage caused by biological agents in attacks as they provide emergency response and treatment. However, the quality of healthcare, specifically healthcare for biological agents, varies drastically from nation to nation. For many countries, especially economically unstable ones like Mali, it is difficult to build political support for such resource-intensive

[275] T. Editors of Encyclopaedia Britannica, "UNSCOM," *Encyclopedia Britannica*, March 20, 2023, https://www.britannica.com/topic/UNSCOM.
[276] Ibid.
[277] T. Editors of Encyclopaedia Britannica, "United Nations Monitoring, Verification and Inspection Commission," *Encyclopedia Britannica*, March 20, 2023, https://www.britannica.com/topic/United-Nations-Monitoring-Verification-and-Inspection-Commission.
[278] "The Iraq War," *Council on Foreign Relations*, n.d, https://www.cfr.org/timeline/iraq-war.
[279] Joby Warrick, "ISIS planned chemical attacks in Europe, new details on weapons program reveal," *The Washington Post*, July 11, 2022, https://www.washingtonpost.com/national-security/2022/07/11/isis-chemical-biological-weapons/.
[280] Glenn Klessler, "The Iraq War and WMDs: An intelligence failure or White House spin?," *The Washington Post*, March 22, 2019, https://www.washingtonpost.com/politics/2019/03/22/iraq-war-wmds-an-intelligence-failure-or-white-house-spin/.
[281] Steven Lee Myers, "U.S Rebukes Russia for Claims of Secret Bioweapons in Ukraine," *New York Times*, September 13, 2022, https://www.nytimes.com/2022/09/13/technology/russia-ukraine-bioweapons.html.

programs directed at low probability events, when issues like poverty ravage the majority of the population. Despite the challenges, however, biodefence programs in many nations have improved significantly due to the COVID-19 pandemic, which increased foreign aid spending from developed nations to developing ones by 3.5 percent from 2020 to 2021.[282] While much of this aid came through distributing COVID-19 vaccines, it was also sent through waves of foreign doctors and trainers, along with funding. Specifically, the Organization for Economic Co-operation and Development's (OECD) Development Assistance Committee (DAC) delivered USD 18.7 billion to support developing nations.[283] Furthermore, the pandemic created an influx of personal protective equipment on the market such as face masks, medical gloves, etc.

However, despite increasing biodefence capacities, the disparity between wealthy nations and developing nations on healthcare infrastructure—hospitals, roads, emergency response centers, and diagnostic equipment—continues to be immense. The lack of infrastructure is especially prominent in unstable regions such as Sub-Saharan Africa, where conflict often prevents supplies and care from reaching potential victims and hinders the establishment of early warning systems. Currently, early warning systems against biological attacks require a high level of technical expertise along with the necessary political incentive. Countries primarily in Africa and Central Asia also suffer from a lack of healthcare workers, with the WHO estimating a shortfall of healthcare workers of 10 million by 2030.[284] Furthermore, even wealthier nations—those better equipped for bio-attacks—face challenges with advancing and expanding their biodefence programs. The National Blueprint for Biodefense report in 2015 points out the economic difficulties of convincing private corporations to fund biodefence, especially as the threat continues to be minimal.[285] Despite research continuing to develop more cost-efficient methods, a report in 2016 from the same organization pointed out how offensive bioweapon research is far outpacing biodefence research.[286]

Disparities with early warning systems is best exemplified by the BioWatch system in the U.S., a biodefence mechanism that began in January 2003 and has since been expanded upon significantly. Led by the U.S. Department of Homeland Security (DHS), BioWatch involved the mass implementation of air sampling equipment and laboratory sampling tools across millions of laboratory arrays.[287] The frequent sampling and analysis of high risk areas allowed the detection of biological aerosols and airborne biological agents within 10–34 hours after sampling, a remarkable benchmark that the system has since strived to lower to 4–6 hours.[288] By the end of 2003, BioWatch had reached 30 major cities and has since been implemented continually in even more cities, with its benefits allowing for the "mass distribution of prophylactic medications or other medical countermeasures in time to prevent widespread illness or deaths."[289] However, the cost of the program is immense. An estimated USD 80 million was spent in 2014 alone, and this figure is projected to grow to USD 200 million with planned upgrades to the program.[290]

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[282] "COVID-19 assistance to developing countries lifts foreign aid in 2021 - OECD," *OECD*, n.d, https://www.oecd.org/dac/covid-19-assistance-to-developing-countries-lifts-foreign-aid-in-2021-oecd.htm.
[283] Ibid.
[284] "Health workforce," *World Health Organization*, n.d, https://www.who.int/health-topics/health-workforce#tab=tab_1.
[285] Blue Ribbon Study Panel, "A National Blueprint for Biodefense," *EcoHealth Alliance*, October, 2015, https://www.ecohealthalliance.org/wp-content/uploads/2016/03/A-National-Blueprint-for-Biodefense-October-2015.pdf.
[286] Bipartisan Commission on Biodefense, "Biodefense Indicators," *Bipartisan Commission on Biodefense*, December, 2016, https://biodefensecommission.org/reports/biodefense-indicators/.
[287] Institute of Medicine et al., *Biowatch and the Public Health System. BioWatch and Public Health Surveillance: Evaluating Systems for the Early Detection of Biological Threats* (Washington, DC: National Academies Press, 2011), https://www.ncbi.nlm.nih.gov/books/NBK219704//.
[288] Ibid.
[289] Ibid.
[290] Ibid.

Artificial Intelligence

With the rapid growth of artificial intelligence (AI) in the past decade and the rise of scientific analysis from AI systems, AI's role in biological attacks continues to grow. In 2020, studies from the Swiss Federal Institute for Nuclear, Biological, and Chemical Protection, which programmed an AI to develop biological agents, found that it was feasible to produce 40,000 harmful agents within six hours.[291] Moreover, since the program was developed with publicly available toxicity databases, it has played a major role in raising awareness of the threat of biological weapons. This study was built off pre-existing concerns over the misappropriation of AI drug testing programs at the Swiss Spiez conference and demonstrated the deadly potential if malicious users gained access to virus databases.[292] Lower income nations, in particular, do not have the adequate funding to develop sufficient counter-measures. Although further studies need to be conducted, given the apparent effectiveness of AI, weak cybersecurity in one nation could have international ramifications. Therefore, control and regulation of AI programs and international biological databases should be another major aspect of international bioterrorism prevention.

Possible Solutions and Controversies

Verification Processes

Verification processes involve existing structures to ensure compliance with international agreements and have become a highly debated topic worldwide in the area of biological weapons. Currently, under the BWC protocols, international inspection on nation-states requires a resolution from the UN Security Council, as seen with both UNSCOM and UNMOVIC in 1991 and 1999 respectively. Such resolutions are notoriously difficult to pass due to not only requiring the support of nine out of 15 members but also requiring none of the five permanent members of the Security Council to veto the agreement. This protocol aims to ensure the protection and balance between national sovereignty and international agreement but has often resulted in deadlock, given the frequently opposing views between the five permanent members.[293] Therefore, there have been numerous suggestions on how to best ensure that nations are complying with the standards and conditions of the BWC.

BWC verification processes were a central topic of discussion at multiple review conferences. In 2006, for example, the Implementation Support Unit (ISU) was established.[294] The ISU provided administrative support for BWC nations by having permanent employees for the review conferences, while also facilitating confidence-building measures. However, the ISU and other confidence-building resolutions remain relatively weak; nations

[291] Kaushik Pal, "AI in Bioweapon Development: What Are the Ethical Boundaries?," *Technopedia*, July 24, 2023, https://www.techopedia.com/ai-in-bioweapon-development-what-are-the-ethical-boundaries.
[292] Rebecca Sohn, "AI Drug Discovery Systems Might Be Repurposed to Make Chemical Weapons, Researchers Warn," *Scientific American*, April 21, 2022, https://www.scientificamerican.com/article/ai-drug-discovery-systems-might-be-repurposed-to-make-chemical-weapons-researchers-warn/.
[293] Anjali Dayal et al., "The U.N. Security Council Was Designed for Deadlock — Can it Change?," *United States Institute for Peace*, March 1, 2023, https://www.usip.org/publications/2023/03/un-security-council-was-designed-deadlock-can-it-change.
[294] Daryl Kimball, "The Biological Weapons Convention (BWC) at a Glance," *Arms Control Association*, February, 2022, https://www.armscontrol.org/factsheets/bwc#

still need to submit for inspection on their own volition. As a result, there have been numerous calls for a permanent international inspection unit made up of scientists as an independent body to enforce regulations.[295]

Compared to UNSCOM and UNMOVIC, this international inspection unit is envisioned to have a separate voting system, allowing for more flexibility and utility. However, many nations oppose this idea on the basis of national sovereignty. Many countries remain cognizant of the potential for bias in decision making, and there remains unclear boundaries between balancing inspections and reasonably protecting government secrets. Other possible verification processes include monitoring stations to detect biological activity in nations, similar to the International Monitoring System of the Comprehensive Nuclear Test Ban Treaty (CTBT), and monitoring through civil activities and open source data.[296] In essence, countries currently bear the brunt of the responsibility with regards to verification processes, rather than a third party, deemed insufficient by some and necessary by others to protect sovereignty.

Countries need to reliably ensure that they are complying with the demands of the treaty while ensuring that their national sovereignty is respected. Solutions that allow for more frequent international inspections also need to ensure that they remain neutral and independent. In addition, more advanced biosurveillance options such as through aerial analysis need to be regulated.

Transgovernmental Law Enforcement Cooperation

Transgovernmental cooperation has been incredibly effective in enhancing regional biodefence efforts. In the past, NATO has demonstrated the effectiveness of international data sharing, foreign aid, and cross-border cooperation against bioterrorism.[297] This is especially relevant for lower income nations that do not have the political incentive and economic stability to fund adequate biodefence systems. By providing foreign aid and sharing research and data, countries would be better prepared to identify weaknesses in their biodefence programs, locate threats, and gather the resources to prevent substantial damage. Aid could come in the form of funding infrastructure such as hospitals, roads, and early biodefence systems such as BioWatch, which help strengthen the ability of countries to react to and counter biological attacks. Furthermore, providing pharmaceutical supplies, training, and data strengthens the international community's ability to prevent bioterrorism across the world.

Transgovernmental cooperation can also help with expanding the boundaries for nations to apprehend the perpetrators of biological attacks. For example, if a terrorist from one country launches an attack on another, extradition agreements could allow the terrorist to be apprehended. Intergovernmental criminal databases can also be expanded, and cooperation between law enforcement agencies can aid in improving border inspections for bioweapons. However, transgovernmental cooperation places a significant burden on wealthier nations of providing biomedical aid, something likely to face political pushback as it cuts into national spending. Moreover, regions with high rates of conflict, such as the Middle East and Eastern Europe, are unlikely to cooperate and share data or form extradition agreements. Therefore, it is likely that complete transgovernmental cooperation will occur primarily amongst political and regional allies, rather than being dedicated internationally. Political organizations such as the EU can play a major role by facilitating negotiations and providing resources for such

[295] Kerstin Vignard et al., "Disarmament Forum: Arms Control Verification," Translated by Valérie Compagnion, *United Nations Institute for Disarmament Research*, 2010, https://unidir.org/sites/default/files/publication/pdfs//arms-control-verification-en-320.pdf.
[296] Ibid.
[297] "Weapons of Mass Destruction," *NATO*, February 27, 2023, https://www.nato.int/cps/en/natohq/topics_50325.htm.

efforts; however, extending these regional cases of cooperation to the international community requires thorough negotiation with the involved parties.

Cybersecurity for Biotechnology

International cybersecurity for biotechnology is currently underdeveloped due to a lack of attention in the sector. Currently, the responsibility for cybersecurity standards is mainly placed on the nation, which means that there exists varying levels of security from nation to nation. The U.S., for example, has established relatively strong cybersecurity standards on research data and other databases, while less developed nations such as Algeria have lower standards for cybersecurity. Currently, a multitude of cybersecurity guidelines are in place, including the European Union General Data Protection Regulation, the Chinese Personal Information Security Specification, and the General Data Protection Law in Brazil, which outline encryption methods to secure biotechnology data.[298] However, oftentimes, even these guidelines can be bypassed due to a combination of human error, such as accidentally downloading malware, as well as cybersecurity gaps in the system due to factors such as bad programming and glitches. Furthermore, scientific cooperation in the modern day sees an enormous amount of data being sent everyday from all across the world, exposing itself to potential malicious users. The dangers of cybercrime are also not just limited to non-state actors, as states such as Russia, China, and North Korea have conducted numerous cases of cybercrime in the past.[299]

Cybersecurity requires international cooperation since protecting one database is ineffective if another is compromised. National cybersecurity policies can have far-reaching consequences that affect scientific research internationally.[300] The focus of cybersecurity efforts are primarily on the identification and isolation of threats and vulnerabilities in systems. Compared to current national policies on cybersecurity, this can be improved through rigorous international inspections and analysis from independent third parties similar to UNSCOM. Furthermore, international bodies can also establish technical support to developing nations and strong encryption standards for sending data, similar to that of SWIFT with banking. These encryption standards could be overseen by third parties, such as UNODC, to ensure cybercrime is minimized along with mediating negotiations between nations to apprehend violators. However, such actions are likely to face resistance from nations that prioritize a high level of national sovereignty. Clear boundaries would need to be discussed to ensure state rights are protected. Cybersecurity also likely hinders scientific advancement, which is a major priority of countries such as China.[301] Finally, increased cybersecurity on biotechnology could indirectly harm disarmament movements as data becomes more heavily guarded, making illegal biological research harder to detect. Therefore, the balancing act to ensure a safe and cooperative cyberdefense for biological research requires extensive discussion.

[298] Kavita M. Berger et al., "National and Transnational Security Implications of Asymmetric Access to and Use of Biological Data," *Frontiers in Bioengineering and Biotechnology* 7 (February 25, 2019), https://doi.org/10.3389/fbioe.2019.00021.
[299] Damien Black, "Cybercrime from Russia and China: What can we expect next?," *Cybernews*, January 24, 2023, https://cybernews.com/editorial/cybercrime-russia-and-china-what-next/.
[300] Kavita M. Berger et al., "National and Transnational Security Implications of Asymmetric Access to and Use of Biological Data," *Frontiers in Bioengineering and Biotechnology* 7 (February 25, 2019), https://doi.org/10.3389/fbioe.2019.00021.
[301] Ibid.

Privatization of Biodefence

The privatization of biodefence involves increasing competition within the biodefense sector to make biodefence methods cheaper and more accessible. For countries such as the U.S., where the private sector plays a large part in both healthcare and the military, extending government contracts for biodefence could be a solution compared to the slow bureaucracy of state systems. Privately funded biosurveillance systems such as ProMED-mail, which provides users with up-to-date information on infectious outbreaks, have already been well received internationally due to the ease for users to identify and report outbreaks.[302] Moreover, innovation in the private sector allows for the implementation of biosurveillance systems in smartwatches, phones, and other portable devices, allowing for earlier warning. Therefore, increased international cooperation with private companies and NGOs can provide biodefence to civilian populations through establishing biosurveillance software and even biodefense technologies such as filtration systems.[303]

However, there exists many challenges involving the private sector in biodefence. First, there are international concerns over corruption and biases from private corporations; allowing private corporations to collect biosurveillance data could result in infringement of privacy. This concern has been exacerbated by events such as the Huawei security scandal, where Huawei was speculated to be selling user data to the Chinese government.[304] In addition, accessibility becomes a concern given the monetary motivations of companies that could cause a disinterest in biodefense, as there does not exist a high potential for profit currently. Furthermore, there is a high cost associated with biodefence technology development. Therefore, NGOs are likely more suitable despite the lower potential for innovation. Many NGOs have worked closely with the UN and can help provide biodefence training and technical expertise for many nations. However, as NGOs are funded primarily through donations, they would likely be unable to provide more expensive biodefence measures.

Ultimately, a solution that involves both NGOs and private corporations would likely be the most effective form of privatization. Yet, this solution requires a thorough discussion on a plethora of factors, such as how to best regulate a private biodefense sector, the purpose of NGOs, and whether the associated risks with increased availability are worth it.

Bloc Positions

North America, Europe, and Australasia

The U.S., Canada, Australia, and European nations have all established relatively strong biodefence systems against bioterrorism. Frequent scientific and military cooperation between these states through political alliances such as NATO and the EU means their biodefence systems are consistently at the forefront of global development. Furthermore, as most of the world's biotechnology sector is concentrated within these economically stable nations, they have the resources to mitigate potential cases of bioterrorism attacks. However, despite their readiness, they are still dedicated to ensuring the control of bioweapons in order to protect the

[302] Carrie M. Long et al., "Biodefense research Two Decades On: Worth the Investment?," *The Lancet Infectious Diseases* 21, no. 8 (August 2021): 222-233, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8364771/.
[303] Ibid.
[304] Kate O'Flaherty, "Huawei Security Scandal: Everything You Need to Know," February 26, 2019, https://www.forbes.com/sites/kateoflahertyuk/2019/02/26/huawei-security-scandal-everything-you-need-to-know/?sh=c80e99473a55.

welfare of their own citizens.[305] Major political alliances in this bloc, such as NATO, have dedicated vast amounts of resources to international disarmament efforts.[306] Given the prominent role of this bloc in intergovernmental organizations, they would advocate for the implementation of verification processes and be major contributors of foreign aid to developing countries. Being ideologically geared towards liberalism and capitalism, they would likely cooperate with private corporations and NGOs by providing affordable and more accessible biodefence methods. Ultimately, the primary goal of this bloc is to ensure global security and management of bioweapons, continue technological advancement with biodefence, and ensure that they uphold their status as peacekeepers.

South America

Prominent nations in this bloc include Brazil and Argentina, whose biodefense systems have not received a lot of attention amid other regional concerns such as rampant political corruption and economic instability. Many states in this region consider biodefence as a low priority as they face more pressing issues, such as economic instability in Venezuela and the drug crisis in Columbia. However, given the prevalence of criminal organizations and gangs in South America, biodefence still plays a significant role in the region. With a relatively weak healthcare system in some nations and unstable security, prevention measures against bioterrorism are incredibly undeveloped. Therefore, South American nations are likely to advocate for foreign aid programs and technical training, as seen with COVID-19.[307] Although international intervention is not preferred, countries in this bloc would not be against this idea, as many South American nations are closely associated with the U.S. The goal of the South American bloc is to ensure that international biodefence regulations do not divert a large proportion of national resources and to increase foreign aid programs.

Africa and the Middle East

Africa and the Middle East are comparatively underdeveloped compared to the rest of the world in terms of biodefence, and many countries in these regions continue to be involved in conflict. More stable nations in this region include South Africa and Saudi Arabia, with South Africa having had a biological weapons program in the past. Countries in this bloc are also the most vulnerable to bioterrorism attacks since healthcare infrastructure is not adequate in many nations and insurgent groups are rampant. Therefore, the primary goal of this region is to reduce the bioterrorism threat from non-state actors and to establish frameworks for biodefence. Given the insecurity of the region, it is likely that international intervention would be necessary in conflict zones to enforce standards and build infrastructure. Such instances of foreign aid would be welcomed by national governments but would be opposed if the aid also went to rebel groups in areas of conflict. For example, in the Syrian Civil War,the U.S.provided support to Kurdish rebels because they politically opposed Bashar Al-Assad's government.

Asia

Major countries in this bloc include China, Japan, Russia, and India; the biotechnology industry in these countries have experienced rapid growth over the past decade. In particular, China's funding towards the

[305] "Arms control, disarmament and non-proliferation in NATO," *NATO*, February 27, 2023, https://www.nato.int/cps/en/natohq/topics_48895.htm.
[306] Ibid.
[307] Hamilton, R. Alexander et al., "Biological Security Priorities in South America," *United Nations Interregional Crime and Justice Research Institute*, 2020, https://unicri.it/sites/default/files/2020-11/South%20America.pdf.

biomedical sector increased by 33 percent in 2014.[308] This bloc would mostly reject international intervention as they highly prioritize national sovereignty and aim to prevent what they see as U.S. hegemony in global affairs—the view that the U.S. is actively trying to dominate international affairs. Therefore, these countries would strive to give as few concessions as possible in any resolution and instead place biodefence as a solely national responsibility. This bloc also encourages rapid scientific innovation and is willing to sacrifice security in order to continue research and development. Regional cooperation is also a priority for this bloc. That said, political ideologies vary widely amongst the region, and some countries would be willing to accept foreign aid and submit to international inspection. Ultimately, the goal of this bloc is to ensure that national sovereignty is protected.

Discussion Questions

1. Should international organizations have the right to freely conduct inspections? If not, how can countries ensure international compliance?
2. Should nations prioritize biodefence over other national issues? If not, what are the international ramifications of weak biosecurity?
3. How can underdeveloped nations establish independent long-term frameworks to prevent bioterrorism?
4. What systems can be established to ensure biotechnology data is protected from malicious users? How can threats be better identified?
5. What regulations can be implemented to ensure that technological advancements are not repurposed for harm?
6. How can nations incentivize biodefence and make it more accessible to commercial customers?
7. When confronting bioterrorism, should the issue be the responsibility of nation states or should it involve the international community?

[308] Cathay Kristiansen, "America is losing biomedical research leadership to Asia," Fogarty International Centre 13, no. 1(January, 2014), https://www.fic.nih.gov/News/GlobalHealthMatters/january-february-2014/Pages/spending-investment-biomedical-research-development.aspx.

Additional Resources

Biological Warfare and Bioterrorism: A Historical Review:
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1200679/

National and Transnational Security Implications of Asymmetric Access to and Use of Biological Data:
https://doi.org/10.3389/fbioe.2019.00021

Biotechnology Market:
https://www.precedenceresearch.com/biotechnology-market

Biodefence and the Production of Knowledge: Rethinking the Problem:
https://www.jstor.org/stable/43282734

The Biological Weapons Convention (BWC) at a Glance:
https://www.armscontrol.org/factsheets/bwc

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