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How the Drug Trade is Facilitated Online: A Qualitative Meta-Synthesis

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HOW THE DRUG TRADE IS FACILITATED ONLINE: A QUALITATIVE META-SYNTHESIS

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BY

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DEDICATION

This work is dedicated to my late grandfather and to my late cousin.

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ABSTRACT

The drug trade is part of society and will, therefore, continue to evolve as society
evolves. Technology plays a significant role in the evolution of society and the drug
trade alike. Technological developments such as the internet have facilitated our lives.
Several conditions have contributed to the evolution of the drug trade, including the
increased and intensifying criminalization of material spaces, which has led to people
engaging in crime in and across cyberspace(s). The transnational nature of the emergent
digital drug trade has brought with it unique jurisdictional concerns as the globalized
world intersects with the global internet to facilitate online communication and illegal
trade, while the emergence of cryptocurrencies and their role in 'dark web' markets
allows a level of anonymity that was previously impossible. This research used a
qualitative meta-synthesis structure to explore how the drug trade is facilitated online
and how drug markets and trade networks in cyberspace(s) will continue to evolve with
technology.

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Introduction

A normal Tuesday at the Glen Park Library in San Francisco, California, stopped being a normal day when federal agents swooped in to surround Ross Ulbricht, an unassuming 29-year-old man using his laptop in an otherwise quiet library (Lee, 2013). On October 1st, 2013, Ross William Ulbricht was arrested by the Federal Bureau of Investigation (FBI) for running a dark web marketplace called Silk Road. Ulbricht was known online as the *Dread Pirate Roberts*, and it was under this name that he ran Silk Road, an underground marketplace buried deep within the architectures of the internet, offering everything from pirated software, to drugs, to murder for hire, from 2011 to 2013. According to the FBI (2020), Silk Road made billions in sales and millions more in commissions. Ulbrict's laptop is now stored by the FBI as an artifact of his crimes. This high-profile case represents the evolution of the drug trade in the twenty-first century. Research suggests that bringing down Silk Road created a power vacuum or void that was filled by a multitude of dark web marketplaces that sought to replace its business. By analyzing themes in the literatures surrounding these issues, this thesis seeks to develop critical criminological understandings of those emerging marketplaces, including the factors that contribute to their rise and proliferation, their relationship to previous forms of illicit drug markets, and some of the critical challenges facing efforts to police and regulate them.

This study will explore how these developments indicate that the drug trade always evolves alongside technological development and globalization, and how that constant evolution indicates that illicit drug markets will never be eradicated. The drug

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trade has evolved and will continue to evolve with technology and globalization. The history of the drug trade in material spaces has led to its evolution into cyberspaces. The drug trade and the digital drug trade are transnational by nature, and that transnational nature brings jurisdictional issues. The use of cryptocurrencies and the dark web provide a level of anonymity that was not available in earlier examples of illicit drug markets. The drug trade in cyberspaces will intersect with future practical applications of technologies such as artificial intelligence and machine learning models. I will start by providing a brief overview of the literature on the drug trade, both in the US and international context, beginning with the history of drug trade in the US. Before examining these factors, I will start by providing some key conceptual definitions as well as some contextual histories to clarify my meaning here.

Technology and Globalizing Crime

Technology plays a significant role in the evolution of society. Technological developments such as the internet have facilitated our lives; Society is increasingly interconnected. This interconnectedness occurs through the internet, and computer-mediated communications (Holt et al. 2010). In *Globalization and Crime* by Franko Aas (2007), globalization is defined as the "growing interconnectedness of states and societies and the progressive enmeshments of human communities with each other." Globalization is described by Aas as a process that has been occurring throughout history and can be engaged by different actors in different ways. Globalization is a process that facilitates global connectivity by facilitating communications and other exchanges in society but also facilitates crime (Jewkes and Yar, 2013; Yar and Steinmetz, 2019).

As with everything in this world, globalization takes place in social, political, and economic contexts. Harvey (1990) explains how economic globalization increased the speed of communication and movement of capital, therefore resulting in the 'shrinking of space and the shortening of time'. An important area of the globalizing process is the movement of cultural images, ideas, and information (Aas, 2007). This can occur physically and virtually, therefore quickly opening new dimensions and forging new forms of connectedness in our society. Geographical distance has increasingly less meaningful effects on our lives and how society is structured. This opens an unquantifiable dimension of possibilities and outcomes. One of the technological developments most implicated in this process is the internet, which has

allowed the world to become interconnected on a global scale (Stalder, 2006). Castells (date) explains how geographical distance is mediated by communications and technology and how these forms of economic and cultural globalization have facilitated changes across many aspects of our society including the drug trade.

The development of the internet and the world wide web has created the cyberworld in which humans now engage a significant amount of time and resources. Cyberspaces, the spaces where computerized interactions and exchanges take place, have been created as part of the globalized society in which we live (Yar and Steinmetz, 2019). Cyberspace is defined in the criminological literature as the environment and spaces created by connecting computers into a communication network (Jewkes and Yar, 2013). Cyberspaces also refers to the totality of the different layers of the internet: the surface web, the deep web, and the dark web. The surface web is where most of the activity on the internet occurs and is accessible and available through search engines. The deep web is the content of the internet that is not available through a search engine, the infrastructural dimensions of the vast global digital networks that everyday users do not see. The dark web is the layer that hosts illicit marketplaces where the drug trade is facilitated, generally only accessible using specialized tools like TOR browsers, advanced VPN networks, and difficult to access specialized search engines. It is important to note that the drug trade now takes place in each of these layers of the internet, but the dark web is the preferred one since the encryption tools needed to access it allow the anonymity of buyers and suppliers (Yar and Steinmetz, 2019).

The media portrayal of the dark web has created some confusion surrounding the dark and deep web (Zhang & Zou, 2020). These terms are often used interchangeably in the media, but they actually mean different things. The deep web consists of content that cannot be found with the typical search engine; it is not encrypted; it is just not as easily accessible as content on the surface web. On the other hand, the dark web consists of content that can only be accessed through private networks (like Tor) that require several layers of encryption. The authors contextualize how the different surfaces or layers are accessed every day. Internet users that want to access the Dar Web have to take extra steps to achieve it. In society, we now have the option to engage in physical spaces and cyberspaces alike (Hayward, 2012). Hayward explains how the virtual and networked spaces our society is influenced by encourage us to spend more time in cyberspaces.

Yar and Steinmetz (2019) provide a brief history of the internet, which they describe as a development of connected networks which allows us to engage in practices that can potentially be used for deviant or criminal activities. In the same way that the internet has facilitated online communication, it has also facilitated communication opportunities to engage in deviant and criminal activities. The internet connects a series of networks ranging from the public sector, the private sector, and governments, thereby opening horizons and endless possibilities on how these networks can be used and abused. Finklea (2013) contextualizes how globalization and technological developments, like the internet, facilitate the growth of criminal activities in physical spaces and cyberspaces, explaining how law enforcement does

not have the technological capabilities to keep up with the development of trade networks online. This is a challenge across different jurisdictions that police the digital drug trade. Cyberspace allows everyone to overcome the limitations of geographic borders, jurisdictional concerns, and law enforcement limitations.

Portnoy and Goodman (2009) contextualize the conditions and circumstances in which the internet facilitates cybercrime and/or crime in cyberspace. Cybercrime is any activity that takes place on the internet and across other networks of electronic communication (Brey, 2017; Dupont and Holt, 2022; Franko, 2008; Holt and Bossler, 2017; Jewkes and Yar, 2013; McGuire, 2019; Steinmetz, 2016; Yar and Steinmetz, 2019). This demonstrates how the internet facilitates offending behaviors. This is how the internet and a globalized world have contributed to the facilitation of the drug trade. The growing role of information and communication technologies (ICT) in our society has contributed to and created the conditions to facilitate not only our day to day lives, but also the drug trade (McGuire and Holt, 2017). This is why it is logical that the drug trade would evolve to reflect new technologies as well. The internet has enabled the construction and communication of multiple networks of ICT, which have in turn enabled new forms of crime and new spaces in which they appear (Yar and Steinmetz, 2019).

The Drug Trade

The drug trade—conceptualized here as the vast network of global and globalized markets in and through which illicit drugs like cannabis, cocaine, heroin, and

other opioids, both natural and synthetic, and a virtually endless list of other illicit recreational drugs and illegally sold or used licit drugs—has evolved as society has become increasingly interconnected by technologies. The evolution of the drug trade takes place in an interconnected society. The drug trade, like any other business, involves an exchange of currency for a product. Jacques and Wright (2011) explain how the drug trade functions: it is a transaction where resources are exchanged for a quantity of drugs. The drug trade can occur in licit and illicit markets. Giommoni et al. (2020) explain how regulation and prohibition throughout history have been affected by the histories and geographies of the countries involved in the drug trade. These countries can be producers, intermediaries, or consumers in the drug trade. Keefer et al. (2008) explain how drug prohibition has led to the creation of the drug trade.

A well-known problem with the drug trade is its illegality and how this impacts development in already vulnerable countries. Keefer et al. (2008) explain how the criminalization--classifying specific actions as criminal or illegal--of the drug trade is derived from an array of issues faced by developing countries. The criminalization of the drug trade generally unfolds by having laws that deem any activity related to the drug trade illegal. Policies that pertain to criminalization tend to govern the quantities of drugs you are allowed to possess, exchange, or consume, and how those drugs laws are enforced characterizes the general shape and appearance of 'criminalization'. The drug trade is, therefore, reflective of a pattern of policies where criminalization is seen as the solution for larger social problems.

One of the issues that the drug trade brings in developing countries is the violence that often arises due to the prosecution of those involved (Keefer et al., 2008). This takes place when strict regulation of drug markets and prosecution of criminalized actors leads to disrupting the informal and formal control of the drug trade, which then results in violence. Keefer et al. (2008) explain how the U.S.-led 'War on Drugs' has brought unintended consequences such as increased harm, violence, and crime in developing countries which are caught in the crossfire. Most current drug policies intend to limit and reduce drug use. However, despite these policy efforts and despite the violent prosecution of the War on Drugs, demand and drug consumption has increased significantly in the last decade (Purvis and Gundur, 2019). The illegality of the drug trade, then, in this context creates opportunities for significant economic incentives instead of deterring the drug trade from occurring.

Jurisdictional concerns are part of the history of the criminalization of the drug trade and are brought into stark contrast when considering how drug markets have shifted online (Lavorgna and Antonopoulos, 2022). These jurisdictional concerns occur due to the production of certain ingredients or different drugs and how those ingredients, components, users, sellers, and overall markets are later transported around the globe (Purvis and Gundur, 2019). Therefore, the production, transportation, and consumption of drugs is transnational by nature, which makes it harder for regulating bodies to deal with jurisdictional concerns (Kruithof et al., 2016). If a drug is made in a given continent, but it is intercepted while it is being transported

to another continent, it becomes problematic to decide which jurisdiction is the one responsible for prosecuting the global drug war.

Lavorgna (2016) explains how control of the traditional drug market will impact the development of virtual drug markets. Lavorgna describes how certain substances may be legal in some jurisdictions because different countries and jurisdictions have different approaches to drug policies. Lavorgna also notes how different countries and jurisdictions have different methods to approach drug problems and drug addiction. For example, the Netherlands and the United States have different approaches regarding marijuana. In the United States, marijuana is still prohibited on a national level, but states have legalized medical marijuana and small amounts for recreational use. Meanwhile, in the Netherlands, marijuana is openly sold in businesses without risk of prosecution or enforcement from the state (Yacoubian, 2007). This is one example among countless others that illustrates the legal complexity of the global drug war, complexities that are only intensified by the rise of globalized and anonymous online drug markets.

Historically, the drug trade deals with these challenges of the transnational component of its illicit markets. The policies of drug prohibition have not been able to stop the drug trade. The growing and intensifying criminalization of physical spaces caused by prohibition has led people to engage in the drug trade in cyberspaces (Lavorgna and Antonopoulos, 2022). Therefore, the criminalization of a social problem like the drug trade has led to its evolution into cyberspaces.

The jurisdictional concerns described above lead drug traffickers to move their businesses to cyberspace because there are conditions that facilitate access while mitigating risk to traffickers. The increased criminalization of physical spaces, the development of technologies like the internet, and an increasingly interconnected society due to globalization are some of the factors that have contributed to the drug trade being facilitated online. Lavorgna and Antonopolus's (2022) research, expands on how cyberspaces allow individuals to engage in different spheres, such as the legal, which happens mainly on the surface web, the semi-legal on the deep web, and the illegal, which happens largely on the dark web. There are, then, ways in which the rise of interconnected cultural globalization have increasingly facilitated access to a multitude of subcultures within the layers of the web. Also, cyberspace does not limit actors to just one crime or cybercrime. As actors can engage in a variety of cybercrimes online, sellers can diversify as well. For example, people who engage in drug trafficking can sell multiple types of drugs and become poly-traffickers. This is a dimension that online facilitated drug trade enables.

The majority of the drug trade that is facilitated online takes place on the dark web (Flamand and Décary-Hétu, 2019). This occurs due to multiple reasons, such as the power to engage anonymously and the ability of the dark web to simply offer a better marketplace for its customers. Duxbury and Haynie (2023) argue that the drug trade on the dark web did not exist in 2010 but now brings millions of dollars in revenue to traffickers. The conditions online, specifically on the dark web, allow the

drug trade to take place with a lower risk of getting prosecuted and a higher reward for the buyers and sellers.

Zhang and Zou (2020) explain some of the benefits of anonymity online as it ensures freedom of expression in the context of oppressive regimes or even just simple user safety while navigating online. These authors explain how user anonymity on the dark web is achieved through various forms of networks that create an encryption layer. Multiple layers of encryption allow the user to be on the internet without their activities being traced back to them. Tor and other tools can be combined to offer multiple layers of encryption; they conceal the user's information online and can therefor allow users to engage in content that would not pass normal reviews or regulations. Moore and Rid (2017) contextualize the benefits of encrypting user information and how these encryption practices enhance safety online. Encryption provides privacy that helps people from being victimized by preventing their personal information from being exploited, but this encryption also allows people that engage in criminal activities in cyberspaces to remain undetected. Technological advancements and the combinations of multiple technological resources enhance anonymity online, but this anonymity can also be utilized by actors who want to harm others.

The Dark Web and Cryptocurrency

The illicit drug trade has historically been complicated by traditional currencies, which present problems to traffickers: Pablo Escobar, for example, famously faced

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significant difficulties in dealing with the management of huge amounts of physical

currency, going so far as to fill the homes of family members with U.S. dollars that

could not be deposited into banks without risking seizure or detection (Simser, 2012).

In response to this problem, cryptocurrencies have emerged as the preferred currency

to engage in the digital drug trade. Chertoff (2017) describes how cryptocurrencies are

utilized for transactions on the dark web, as these digital currencies prevent

transactions from being tracked back to the buyers or suppliers. The use of

cryptocurrencies in the dark web facilitates the anonymity of engaging in the drug

trade online. Zhang and Zou (2020) explain how transactions made on the Dark Web

use cryptocurrencies to avoid traceability from regulatory agencies, with digital

currencies Monero and Dash being noted as some of the cryptocurrencies that provide

the highest level of user anonymity. The marketplace for the drug trade already

existed before the use of cryptocurrencies: Cryptocurrencies simply contribute to the

conditions that facilitate anonymity for buyers of drugs on the dark web.

Lavorgna (2014) contextualizes how internet-mediated drug trafficking is

different from in-person drug trafficking. Cyberspace has opened unlimited

opportunities for actors in the drug trade. Cyberspace has democratized access to the

digital drug trade. When the drug trade only took place in material spaces, people had

to travel to different geographies to engage in illicit drug markets, including those that

engaged in the transportation of drugs. Nowadays, internet-mediated trafficking

increases the possibility of the drug trade taking place in legal ports of entry. With the

emergence of a newly globalized illicit market, drugs are moved along the same routes

and through the same channels as any other merchandise in the current political

economy.

Methods

This research uses a qualitative meta-synthesis structure to explore and explain how and why the drug trade is facilitated online and will continue to evolve with technology. A meta-synthesis theoretical research design is an approach to synthesizing a topic by integrating qualitative research (Siddaway et al., 2019) with a close and thorough examination of extant and developing literature. This research also employed an ethnographic content analysis in order to explore the emergent digital drug trade. Altheide (1996) defines ethnographic content analysis as a qualitative collection and analysis of data originating in a range of content and content forms including scholarly literature, official documents, and popular media. An ethnographic content analysis is used to explore theoretical relationships of previous theoretical claims to support them or to gain new analytical constructs.

I used databases on the EKU Libraries website, such as EBSCO Host, and publicly accessible sources like Google Scholar to identify scholarly, peer-reviewed articles containing information on the drug trade facilitated online. I also relied on public events including academic webinars, such as one cited webinar which was presented by the cybercrime division of the American Society of Criminology which was facilitated by a leading scholar in cybercrime.

It is important to theorize this topic, given that we are spending more time in cyberspace, and that—as described above—there is increasing evidence that online and offline illicit markets exist alongside each other, and that flows and movements in one will impact flows and movements in the other, resulting in significant impacts on

law enforcement, policing, public health, drug policy, and much more. Taken together,

this all indicates that the drug trade will keep evolving since more people will engage

in cyberspaces will create more demand and supply to maintain the ongoing evolution

of the drug trade.

Drugs, Markets, and Prohibition

The origins of the contemporary drug trade in the US date back to the prohibition era of alcohol and the early days of organized crime in America characterized by Al Capone's "gangster" era (Joseph and Smith, 2021). Al Capone's time was characterized by the prohibition of alcohol and how this prohibition created and facilitated the trade of alcohol in a criminal underground illicit market (Borden, 2013). During Capone's era, alcohol was prohibited in similar ways to those in which illicit drugs like cocaine, cannabis, methamphetamines, and more are prohibited today. Borden also explains how prohibition helped create mafias and other forms of organized crime in the United States. The mafia in the United States dominated the illicit markets, and the illegality of alcohol created the conditions for networks like the mafia to profit from the illicit market. When prohibition is contextualized, it becomes clear that these efforts were created to more effectively police urban poverty and disadvantaged neighborhoods. Prohibition also creates the opportunity to accumulate capital in a criminal environment instead of a regulated environment, whereas legalization can reduce revenues and capital accumulation in illicit markers. Miron and Zwiebel (1995) also explain how drug prohibition enables politicians and law enforcement corruption. This is yet another example of the unintended consequences of prohibition.

The methods and networks involved in the drug trade vary significantly based on contextual factors. Joseph and Smith explain how formal control from the state influenced the involvement of state actors in the drug trade. Jacques and Wright

(2011) explain how the drug trade functions: like other markets, drug trades are characterized as transactions in which an amount of resources is exchanged for a quantity of drugs. These authors also contextualize the different factors that might affect the prices and quantities of products available within drug markets. This variation in quantity and price is due to the location and the broader context in which the exchange is taking place. According to Purvis and Gundur (2019), the illicit drug trade is trading substances that are sold and/or produced illegally. This means that some drugs are produced and manufactured outside of the 'legal economy' and traded and exchanged for recreational purposes in illicit markets and economies.

Jacques and Wright (2011) also describe the growth of the literature on the effects of the law and the global drug war on the drug trade. They contextualize the unintended consequences of the formal and informal control of the drug trade. Their theoretical framework integrates rational choice and opportunity perspectives, describing and theorizing how these factors might affect individual and group involvement in the drug trade and the drug trade itself. They explore how and why people decide to engage in the drug trade and how their involvement in the drug trade is affected, concluding that the drug trade is controlled by people participating in the drug trade far more than any formal external controls, and the state, through formal control, disrupts informal control within these illicit markets. The informal control of the drug trade occurs when people within the drug trade engage in and enforce the unwritten rules of drug markets. These unwritten rules can be enforced through intimidation, control, and violence. The formal control of the drug trade occurs when

the state intervenes and attempts to control these illicit markets and their core actors. People have always had the opportunity to engage in the drug trade, but contextual factors influence how this involvement occurs.

Joseph and Smith's (2021) research supports the idea that regulation around illicit markets will influence the organization of those markets. They describe how the global structure of illicit markets is influenced by legislation in a given context; the transnational nature of the illicit global trade in drugs transcends nations' borders and has historical dimensions and implications. According to these authors, this is widely proven by various shifts in an organization before and during the prohibition era. These findings support the idea that the criminalization of a social phenomenon will not stop the phenomenon from occurring and will instead only influence how the social phenomenon takes place, the forms it takes, and the ways in which core actors move within and around these markets and economies. This is why throughout history, we have seen that the illicit markets and economies that constitute the drug trade evolve but will never be eradicated.

The War on Drugs

The war on drugs tends to dominate the public imagination when it comes to drug policy. But there are actually decades of history before the 1980s, when the formal global war on drugs was most significantly intensified under US President Ronald Reagan, which brought us to where we are today. The prohibition of alcohol in the early 1900s contributed to and eventually evolved into drug prohibition. Purvis and Gundur (2019) contextualize the origins of the criminalization of the drug trade that occurred during the beginning of the 20th century. Drug prohibition gained attention in the media and the public in 1971 when then-president Richard Nixon openly declared a 'war on drugs.' Bewley-Taylor (2022) describes the creation and impact of global drug prohibition. Understanding the contextual factors in which the United States-led drug war later influenced and developed global policies is important.

The drug trade has always included a transnational component, taking place across countries' borders and in several continents (Purvis and Gundur, 2019). Chalk (2011) explains how some countries that have been known to be main actors in the drug trade have played a role as producers of the illicit market. Chalk states the main actors of the drug trade are Colombia, Peru, Bolivia, and Mexico and that several countries in West Africa serve as trafficking routes to supply European countries. There are a multitude of contextual factors that intersect with the transnational nature of the drug trade in the main actors of the drug trade. There are structural and systematic conditions in these countries that create an endless surplus population that will fulfill the drug trade. The social and economic conditions in these countries are

what creates a surplus of motivated people who often have no means of survival other than engaging in the drug trade. These surplus populations will fulfill their role in the drug trade, whether it is licit or illicit. Research has demonstrated how inequality affects criminal justice practices, and the systemic forces that construct and condition the drug trade are a prime example of these affects (Bewley-Taylor, 2022). The implications of the drug trade are also caused by and have effects on a transnational scale as well, indicating implications to governance, political economy, and international affairs, among others.

These transnational components of the drug trade are plainly evident in licit and illicit markets and can be affected by the political and economic system in a given country. A political system can influence the transnational nature of the drug trade since the policy and practice surrounding the drug trade—and in particular policing and prohibition—are largely influenced by politicians instead of experts (Bewley-Taylor, 2022). This has created variations in regulations and deregulation surrounding the drug trade across different geographies. Depending on a government or elected officials in any country, leadership will influence how the drug trade is not only constructed but enforced and regulated (Bewley-Taylor, 2022; Purvis and Gundur, 2019). From an economic perspective, countries with lower labor costs will attract businesses that produce the ingredients or chemicals needed to produce drugs. The production of drugs can either be for the licit or illicit markets. The drug trade is a business that operates within licit and illicit markets with a transnational component; it will keep evolving and adjusting to the conditions of the market.

Chalk (2011) provides a traditional approach-to and understanding-of the drug trade in Latin America and its relationship to other geographies that are implicated in the production, transportation, and consumption of cocaine and how production and transportation impacted the drug trade in the geographies of consumption in other parts of the world through supply and demand. The price of drugs was based on the availability of drugs in that the drug trade was able to import to its best consumers, the United States and Europe.

The 1961 Treaty on Narcotic Drugs and the institutions around it led to the globalization of the prohibition approach (Bewley-Taylor, 2022). This treaty was passed as drug use was significantly increasing around the world. Bewley-Taylor (2022) explain several problems that appear to have arisen from these treaty conventions, including that they were passed without considering the local economy of countries that were drug producers and the effects that the intensification of prohibition would have on them. This convention was passed, targeting the supply side of the drug trade—largely producers and traffickers in the Global South—while simultaneously intensifying the policing of the demand side: the domestic urban poor in the United States. The 1980s were a troubled decade for the drug trade, and for those countries and communities caught in the crosshairs of prohibition (Bewley-Taylor, 2022). The dominant contextual factors at the time were the Cold War and the expansion of struggles for global power into Latin America, which influenced how the drug trade was enforced and carried out. In 1998, the United Nations Office on Drugs and Crime, with all its member states, implemented an action plan to counter the world drug problem (Bewley-Taylor, 2022).

This plan consisted of a series of policies that UN member nations were mandated to

follow in order to deal with the global drug trade.

Social and Public Health Consequences of Drug Policy

The prohibition of drugs and the related rise of illicit drug markets result in a host of social problems that especially effect disadvantaged populations and that include everything from violent crime to home foreclosure. Like alcohol prohibition before it, this era of drug prohibition led to illicit markets and to harms and crimes created within and by them. Drucker's (1999) analysis explains the relationship between drug prohibition and public health over 25 years, arguing that the policies and treaties of prohibition surrounding the drug trade have had significant negative public health consequences as they criminalize and marginalize drug users and drug-related risks. Drucker contextualizes the significant amount of government spending that goes to drug-enforcement activities, which was already well into the billions in 1999. Drug prohibition translates to increased emergency visits for drug-related activities and an increase in drug-related deaths. This exemplifies how the prohibition approach toward the drug trade has not had the intended consequences it was expected to. The 1994 Crime Bill is an example of the intensifying criminalization of physical spaces that leads to the 21st-century issues with the drug trade and how it continues to evolve to avoid detection through the migration to cyberspace.

Keefer et al. (2008) explain how the impacts of the drug trade are suffered unevenly, as different geographical spaces experience the war on drugs differently. The global powers of Europe and the United States have the population that demands drugs the most, therefore creating the material conditions and opportunities for suppliers, who are largely located in the Global South and developing economies, to

provide them with a significant economic incentive. This is important to understand

since the seriousness of unintended consequences is what keeps the drug trade

evolving. As the focus here is the increased utilization and on online technologies in

the drug trade, the following section addresses the new and related challenges in

regulating global markets.

Regulating Global Markets: Jurisdictional Concerns

The global market for illicit drugs has been transformed by technological advancements and globalization. Current regulations of the drug trade create an opportunity that enables any group that engages in the drug trade, online or offline, to pursue markets compelled by economic incentives. Therefore, understanding the broader context in which the drug trade takes place demonstrates how the social, political, and economic system facilitates the drug trade in one way or another (Chalk, 2011). Arnell and Faturoti (2023) explain the complexity and the cost of transnational prosecution for cybercrimes; part of this is the feasibility of this and how challenging it would be to pursue meaningful prosecutions. It is unrealistic to expect all jurisdictions where cybercrimes occur to prosecute when even global powers have a limited budget and capability to deal with cybercrimes, specifically the drug trade online.

Rothe and Collins (2011) explain what system criminality is, describing it as the ways in which different layers and different actors are needed for transnational arms trafficking. System criminality can also be applied to the drug trade and to the digital drug trade since multiple layers and actors are needed to trade drugs in material spaces and cyberspaces. Multiple participants are required for successful operations in the drug trade, especially with its transnational nature; suppliers and sellers need intermediaries in order for the transactions to take place. System criminality intersects with Sergi's (2021) research on how transnational networks use ports to transport drugs: this involves transnational networks that implicate public and private corruption alike since some ports are run by the private sector. Also, the multiple international

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shipping companies through which illicit drugs and goods are trafficked are part of the

global supply chain. These shipping companies are of course supposed to abide by the

law of the government, which can and has been co-opted to participate in or sponsor

the drug trade. Therefore, system criminality allows us to understand the different

actors that are needed in facilitating the markets for the drug trade.

Sergi's (2021) research on the drug trade reveals how various social, political,

and economic systems enable and facilitate the global drug trade. Ports are a crucial

point of entry and transportation for international commerce and are affected by

regulations and deregulations that impact the international flow of goods.

Globalization also has both visible and invisible impact on who these ports operate. For

example, Sergi highlights how ports are designed to operate to move a greater amount

of goods in less time, which leaves less time for port authorities (whether they are

private or public) to engage in interception and detection on the goods being

transported. Port authorities are also subject to fines if a load of goods stays too long

in a port, which further complicates the responsibilities of those authorities.

Globalizing Illicit Markets, Drugs, and the Internet

Cyberspace is a worldwide open network that serves as an interactional space for communication (Jewkes and Yar, 2013; McGuire, 2019; Portnoy and Goodman, 2008; Yar and Steinmetz, 2019). The internet has democratized access to the drug trade in multiple ways. The drug trade that is facilitated online occurs in different layers of the internet, with the most explicit and diverse marketplaces occurring across the Dark Web because of a lack of regulation in Dark Web spaces. In terms of regulatory failure, the state plays a primary role in this because of its failure to enact policies to regulate internet service providers (ISP), while the private sector lobbies significantly to maintain this unregulated environment because regulating the internet might incur a loss of revenue. Therefore, the private sector effectively lobbies to maintain the conditions that enable a criminogenic environment on the web. Portnoy and Goodman also explain how the internet reflects the social practices of the world as a reflection of the social world in which we live. The drug trade, of course, already existed before the internet was created, but new developments in the drug trade have been induced and facilitated by the development of the internet. This is important to highlight, as technological advancements are often blamed for the criminal behavior that they facilitate. But the internet is just the environment in which humans can extend their behaviors, actions, and ideologies (Yar and Steinmetz, 2019).

Although they did not create it, globalization and the internet have enabled and facilitated the contemporary evolution of the trade in illicit drugs. The drug trade has been adapting over time, especially in the twenty-first century, where globalization

and the internet play an exponentially bigger role in our lives. Globalization has allowed some of the traditional limitations on the drug trade, such as its transnational nature and the difficulties for producers, traffickers, and consumers that transnationality presents, to be diminished. Over the last two decades, there has been a decline in the retail price of illicit drugs like cocaine and heroin (Costa Storti and De Grauwe, 2009). Globalization has played a key role in this as it has opened access from the seller to the buyer, therefore reducing intermediation and revenue that can be taken out of the exchange (revenue that represents ricing prices for consumers). Globalization, the internet, and cybercrime are intertwined, and this is how the drug trade is facilitated.

Hayward (2012) explains the different theoretical frameworks regarding the use and abuse of cyberspaces. Theorizing crime in cyberspaces comes with additional challenges, as several actors and contextual factors—like anonymity, for example—are in constant states of flux and development. The regulation and policing of the internet will continue to be a significant site and issue of and for debate as some argue it might infringe on civil liberties as described by Yar and Steinmetz (2019), whose research contextualizes the challenges regarding the cyber-policing of the internet. In some types of cybercrimes, however, it might be easier to identify the parties involved and the harm or crimes that took place when compared to traditional crimes.

The attempt to regulate cyberspaces is clearly influenced by earlier attempts to regulate physical spaces. Here we see how policy and practice fit a pattern that focuses on the criminalization of any social phenomenon. The responses to deal with

the different issues that arise in the cyberworld have numerous challenges, as cybercrime is experienced differently than crime in a physical setting. Some of the challenges are the intersection of technological and regulatory processes (Hayward, 2012). But in other complex cases, these might not be readily available. Some examples of complex cases of cybercrime can be swatting, doxing, harassment, social engineering, etc. Another example of how contextual factors affect crime in physical and cyber spaces is how the drug trade is influenced by the different enforcement and legislation regarding drugs. Drug suppliers are subject to different local laws, but these laws are also subject to change over time. This indicates some of the policy and practice implications of the regulating body in any given jurisdiction. Therefore, even though institutions in charge of regulating trade and markets encounter subjects engaging in the drug trade, jurisdictional issues often arise which make prosecution challenging, if not impossible.

It is important to gain a better understanding of the drug trade in cyberspaces in order to reflect on the effects of policy and practice in the enforcement of drug laws. One of the problems is that it is a challenging, if not impossible, task to police and regulate the drug trade due to the transnational nature of it and the jurisdictional concerns that come with transnationality. In the context of the contemporary globalized world, drugs have become more accessible and readily available to anyone: the drug trade is easier to engage in now than ever before, as buyers and sellers alike can operate anonymously and with minimal risk from the comfort and relative safety of their own homes. This is important to understand since the approach to the drug

trade has been dominated by prohibition; it is imperative to understand how the markets in which drugs are produced, trafficked, sold, and consumed will keep evolving with technology and globalization.

Online communication has increased exponentially in the last decade; it is important to highlight the increased use of online communication of every age group (Parti, 2023). This significant increase in online communication includes using cell phones, tablets, and laptops/computers. This translates to an increase in the time that human beings spend in cyberspace, which means that an increase in the risk of victimization is expected. As research demonstrates, vulnerable groups in society are more likely to be victimized by certain cybercrimes. For example, the elderly are susceptible to falling for scams, robo calls, etc.

Holt and Bossler's (2017) research contextualizes how crime and deviance are facilitated online through technology and the internet. They cover multiple approaches to forming a theoretical framework that better fits cybercrime in the twenty-first century, describing and analyzing the challenges of policing cybercrime and theorizing the increased risk of victimization globally. Holt et al. (2009) explain how online communication aids in evading detection from law enforcement, demonstrating that the different strategies and risk avoidance practices that offenders have found significantly increase the frequency and success of offending (Cherbonneau & Copes, 2006). This demonstrates the relationship between the online and offline world and how deviance and crime occur. Holt's research describes how offenders engage in public web forums to communicate the location of law enforcement operations

surrounding prostitution in 10 cities in the United States. The outcomes of these law

enforcement operations varied when consumers soliciting sex communicated about

the operations taking place, deriving in offenders engaging in risk-avoiding practices to

dodge arrest. According to Cross (2000) —who also explains how inequality is

operationalized in the broader context of the trade in illicit drugs—this method also

applies to the drug trade, where informal control within the illicit drug trade is a risk

management and risk avoidance strategy in relation to formal control (Cross, 2000).

Steinmetz (2016) provides some insights on how to deal with "technocrime",

and crime within technological contexts, describing also the serious misconceptions

that dominate public and political narratives around cybercrime. Given the current

political economy in which it exists, these misconceptions have serious policy and

practice implications. When Steinmetz refers to technocrime, this includes hacking and

related theft of technological and intellectual property. These are the main topics that

people think of when they are discussing cybercrime. In his research on this

phenomenon, Steinmetz contextualizes the material conditions in which these beliefs

and misconceptions are formed, noting that their formation is heavily influenced by

massive historical, cultural, social, political, and economic forces.

Internet service providers play a significant role in the framework of regulating

access to the internet and its various and varied contents (Parti and Marin, 2013). Parti

and Marin study the role of internet service providers in relation to content generated

by individuals online, also known as "users." These authors emphasize the intersection

of personal freedoms and rights while attempting to regulate cyberspace. Multiple

challenges arise when attempting to remove content online, ranging from the

increased amount of content generated and diffused online to the technical and legal

frameworks present. Even if a legal framework is in place, who will enforce these

regulations, given that enforcement priorities are reflected in and by the current

political economy? Parti and Marin conclude that the state's intervention is necessary

when regulating user-generated content online.

The development of technologies has social and criminological relevance

because of the shifting nature of cybercrime and its enforcement. Milivojevic (2021)

contextualizes the significance of how technological advancements shape the way we

engage with and experience criminal behavior in the twenty-first century. These

technologies have an impact on crime prevention, criminal justice responses,

offending, and penal policies. The author explores the digital technologies-crime nexus

as it has multiple implications for life in our increasingly online and internet-facilitated

world. Milivojevic's (2021) approach to technological developments in our society calls

for a reflection on the intersection of technology, crime control, and offending. Given

the fast rate of technological development and the always-increasing involvement of

digital technologies in our daily lives, Milivojevic calls for a more comprehensive

theoretical framework in order to understand and analyze the implications of these

emerging technologies on our present and future.

The Cyber Threat Alliance webinar in 2023 provided a forum in which leading

experts in the areas of cybercrime, technocrime, and technologically facilitated

criminal offending explained how structural issues might contribute to or cause several

challenges in the cybersecurity field. The structural issues in the internet create an unregulated environment that facilitates crimes online; it leaves users more vulnerable to identity theft, among other crimes. There are few or no restrictions in online marketplaces, which contributes to how the drug trade is facilitated in cyberspace. Regulatory solutions for these structural issues already exist and could be implemented as soon as today, but those solutions are constrained by political and economic factors. Internet service providers, among others, will lose revenue if these solutions to the structural issues are implemented. Several key players have significant economic incentives to create the conditions which increase traffic through their network. This occurs without regard for the effects of the demonstrated lack of effective regulation, leading to increased cybercrime and a criminogenic environment.

Mackey et al. (2011) describe how an unregulated environment of anonymity and lack of adequate enforcement leads to a global counterfeit drug trade, which in turn leads to significant public health and safety issues. These authors explain how the significant economic incentive of this billion-dollar industry has global implications which affect public health and increase patients' risk of death. This is enabled by a global supply chain that is facilitated online and offline which affects developed and developing countries alike. The unregulated internet has facilitated and increased accessibility to these counterfeit drugs, offering yet another example of how systematic deregulation and regulatory failure facilitates criminal behavior in a given context through the globalized networks of cyberspace.

Cryptocurrencies, Drugs, and the Darkweb

Another similarity between the drug trade online and the drug trade offline is reflected in how buyers might shift their decision to engage in either of these markets by considering how soon they want to receive the drugs they are buying (Garcia, 2017). This means that even if a buyer is saving money or cryptocurrency by buying a larger quantity of drugs online, they might be motivated to instead participate in real-world drug markets. This also indicates that the product, which might be shipped from the other side of the world, may not satisfy the expectations of the buyer. Therefore, buyers on the dark web may prefer to engage in the drug trade offline, with a reliable drug dealer, just so that they can get their drugs fasters and with less risk of adulterated or counterfeited drugs. Instant gratification is a reality in all consumer markets, and the drug trade online is not exempt from having to meet the demands of its clients/buyers. Garcia's work also deals with how cryptomarkets are used on the dark web and what this looks like. There are similarities between the market of a normal and legal business and the illicit markets on the dark web: both markets function based solely on the relationship between buyers and sellers. As Belshaw (2021) claims, sellers on dark web markets engage in competition for buyers just like sellers in more traditional markets. This is why on the dark web, you can routinely observe reviews from sellers, reviews on products and services, and also reviews on transactions/methods of payment.

The conditions surrounding cryptomarkets in the dark web are also influenced by the conditions of any given cryptocurrency in the global market, both licit and illicit

(Garcia, 2017). As mentioned previously, there is still significant public skepticism and distrust toward any type of cryptocurrency. This distrust comes as hackers and scammers see cryptocurrencies as an opportunity to obtain illicit profits through financial crime. People that engage in transactions with any type of cryptocurrency have often lost the money they have put into their chosen cryptocurrency. This can be caused by a multitude of reasons, but the ever-lasting unstable market surrounding cryptocurrencies is one of the reasons for this shift. Still, the advantage of anonymity outweighs the risk of the loss of profit when using cryptocurrencies. The origins of the relationship between cryptocurrencies and the dark web can be traced to the Silk Road. The *Silk Road* was the first widely recognized darknet market to buy drugs in cyberspace; it was created in 2011 and shut down in 2013 (Belshaw, 2020; Duxbury and Haynie, 2023; Holt and Bossler, 2017; Jewkes and Yar, 2013; Kruithof et al., 2016; Puddephatt, 2017; Yar and Steinmetz, 2019). It is also important to understand why and how cryptocurrencies came to be. Part of the marketing campaign surrounding cryptocurrencies highlights their role in decentralizing financial resources, which goes against the regulations present in the traditional global financial system, systems which themselves obviously fail to prevent deviant or criminal behavior. The deregulations of the financial system, though, are also criminogenic in nature: the system works on a base logic that prioritizes profit over people.

Cryptocurrencies have been in the public imagination in recent years, surrounded by significant speculation and fear, because of the prominent rise of currencies like Bitcoin, Ethereum, and Tether. Some advocate for a future with crypto

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as they believe that decentralized currencies will contribute to the decentralization of global markets. The decentralization inherent in contemporary cryptocurrencies might be beneficial in regard to freedom of speech, but in many ways it also provides the conditions to facilitate the digital drug trade. Steinmetz (2016) contextualizes the push for decentralization as decentralized systems are harder to shut down, explaining how anonymity-preserving software is preferred as it can help decentralize power and control. If control over cryptomarkets is centralized, it can create conditions that foster an environment where information on the web is easier to monitor. Several arguments based om personal liberty may support why everyone should have anonymity online, but research also demonstrates how this anonymity can be a double-edged sword because of its facilitation of criminogenic cyberspaces. The use of cryptocurrency in facilitating illicit transactions across the Internet has evolved to "cryptomixing" services offered in online illicit markets (Holt et al., 2023). This consists of using a method to avoid the detection and traceability of cryptocurrency transactions. Yuneline (2019) analyzes the characteristics of cryptocurrencies and how cryptocurrencies are used as a risk mitigation in the illegal and informal trade.

Ngo et al. (2023) explain the challenges surrounding the study of the dark web and its crypto markets. There is a wide range of activities that take place on the dark web, and of course these can be both legal and illegal. Some of the deviant and criminal activities that take place on the dark web are the drug trade described here, but also the sale and dissemination of child pornography, arms dealing, extremist recruitment, counterfeiting of currency and consumable goods, and human trafficking.

The authors highlight how the development of the internet has led to the development of the dark web markets that facilitate these crimes. Again, technologies that are used to protect user's anonymity are essential in allowing activities in the dark web to go unmonitored.

Kruithof et al. (2016) describes the context that brought attention to the internet-facilitated drug trade as the moment in 2013 when the FBI dismantled the *Silk Road*, the pioneer online marketplace of illicit goods. After this intervention and the media attention that followed, the vacuum created in the illicit marketplace online was filled by other sellers and suppliers, creating a significant increase in digital drug trade market buyers and suppliers. These sellers and suppliers engage in multiple layers of the web, not only the dark web, with access to illicit products readily available through a search engine. This further indicates how draconian and ineffective regulations and drug polices pushed the drug trade to adapt to the 21st century.

The research on cryptomarkets demonstrates that wholesale transactions on the dark web represent a quarter of all dark web drug transactions (Kruithof et al., 2016), indicating that transactions in the internet-facilitated drug trade are also utilized for off-line distribution. This is another example of how the regulation and criminalization of physical spaces has a direct relationship with the use of cyberspaces to engage in internet-facilitated drug trade, and how those relationships might be more complex than are immedaitely indicated: the flow of products and users might be two way rather than one way, with markets off and online complimenting one another rather than strictly competing with one another.

Encryption and New Technologies of Anonymity in Illicit Markets

As indicated above, encryption and things like cryptocurrencies have both

positive and negative implications. Scrivens and Conway (2020) explain how the

internet and encrypted platforms facilitate communications, but also how actors in

cyberspace mitigate their language to avoid their posts from being taken down on the

open web, also known as the surface web. Actors that engage in the drug trade online

use the same strategy to avoid detection across different layers of the internet. These

practices are used online and offline to avoid detection or interception from

authorities.

Garcia (2017) explains the technical components employed in order to access

the drug trade on the dark web. Buyers or anyone else that wants to access the dark

web has to engage with *TOR,* which is a special purpose-built encrypted browser.

Belshaw (2021) describes the dark web as a "dangerous neighborhood," as the people

that engage in this cyberspace also tend to monitor who is in these virtual spaces.

Belshaw (2020) explains how open-source software-software that it is publicly

available online for no cost--called 'onion routing' or, more commonly, *TOR,* is used to

access the dark web.

Garcia (2017) and Ngo et al. (2023) each describe and discuss the essential role *TOR*

plays in the drug trade online through the dark web. This technology started in a lab of

a military branch of the United States. There are multiple practical applications that

this technology has in our lives. For example, *TOR* can be utilized to ensure the safety

of an individual who might be the target of an authoritarian regime. This indicates

again that technological developments that are essential to the online trade in illicit

drugs can also be utilized in prosocial behavior, especially in a situation where it is

imperative to protect the psychological and physical safety of someone in danger.

Brenner (2011) explains the transformational power that information holds in our

increasingly connected digital world. This is why the fields of information security and

cybersecurity have gained significant importance. According to Madhusudhan and

Sursahe (2022) and Leith (2021), Brave is another popular browser that is privacy-

oriented, as it prevents the IP address of the user from being tracked, although this

technology is nowhere near as popular as TOR.

Limitations and Future Directions

Steinmetz and McCarthy (2021) explain how technology and the internet have facilitated crime. Ngo et al. (2023) describe the internet as the superhighway of communication. While these authors describe the internet as encompassing three layers, the surface web, the deep web, and the dark web, the future implications of this research include how technological advancements across these 'superhighways' might facilitate shifts in the global drug trade both online and offline. McGuire and Holt (2020) explore the relationship between technology, criminal justice practices, and criminal behavior, and we can follow their lead in considering the ways in which emerging technologies could be applied to emergent cybercrimes.

A limitation of this topic and research concerns regulations regarding cyberspace and personal information, and how those are likely shift in the future. This might make it harder or easier to track activities online. Research suggests that this is unlikely, however, since civil liberties are largely understood in the popular imagination as essential when dealing with privacy online (Yar and Steinmetz, 2019).

Another shift in these issues that can be anticipated relates to the rise of Artificial Intelligence and machine learning. Artificial intelligence is a field in computer science that attempts to recreate human intelligence (Jakhar and Kaur, 2020). Saghiri et al. (2022) explore several challenges of practical applications of AI, including the fairness with which the AI will interact with ethical dilemmas such as those presented by and in the global drug trade, which as described above is reflective of imbalances in global power. Relatedly, Joh (2017) explains how artificial intelligence can be used to

process a greater amount of data than law-enforcement agencies currently have the

capacity to process, while Duxbury and Haynie (2023) explain how artificial intelligence

and machine learning can be used to prevent drug trafficking by using artificial

intelligence and machine learning models to predict future patterns of suspicious

activity reports in the financial system. According to Dupont and Holt (2022), emergent

technologies like artificial intelligence, cryptocurrencies, and the internet are factors

that will increasingly facilitate criminal activities in cyberspace, while Harris (2022)

explains the risks and limitations of the application of AI in policing.

Conclusion

This research has explored the maxim that the drug trade might constantly evolve but will never be eradicated. Technological developments like those described in this thesis have already changed the drug trade and will continue to change how the drug trade takes place: its geographies, its cultural contexts, its regulation, and its harms will always change alongside the various digital technologies that facilitate modern life. The shifts and evolutions described here are largely due to the criminalization of physical spaces, globalization, and the development and rise of cyberspace. It is important to understand the literature on the drug trade and its new digital forms, since prohibition has not been able to prevent people from engaging in the trade. Kruithof et al. (2016) introduce several approaches to addressing the internet-facilitated drug trade, especially when it takes into consideration the transnational nature of it and the challenges that come with it. International cooperation and coordination is necessary to address the drug trade more effectively and humanely. As traditional strategies and techniques have been unable to detect or disrupt the volume of drugs traded online or offline. The traditional strategies to detect and intercept the drug trade do not account for the digital drug trade. Sergi (2021) describes how it is unrealistic to use x-ray machines to scan all the goods being transported, thereby illustrating that policies and technologies need to stay up to date in order to effectively keep pace with the evolution of the drug trade. The supply of the trade is constant, and the number of consumers has actually increased. Perspectives that critically employ a political economic analysis of the history and

effects of the global drug trade need to be incorporated in order to understand and

analyze the current state of the drug trade and the digital drug trade. Technological

advancements might contribute to growth and development, as well as the detection

and interception of the global digital drug trade, but will never be able to eradicate it.

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