**Beyond the Dark Web: Navigating the Risks of Cannabis Supply over the Surface Web**

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## Abstract

Common depictions of buying and selling illicit drugs online centre on how drug market actors engage in dark web drug cryptomarkets, but the supply of illicit drugs also takes place in ‘plain site’ on the surface web. Drawing on netnographic observations and qualitative interviews with hard-to-reach buyers and vendors (n = 20), this paper explores *LeafedOut*, a specific, popular surface web platform, that provides a conduit for local cannabis exchanges. We found that the platform enabled easy access and supply at the local level but increased some specific risks to those involved. Actors neutralised the perceived risks of drug supply over this surface web platform through the broader societal normalisation of cannabis use/supply, adopting encrypted messaging applications to cover ‘digital traces’, and developing various methods to establish trust with an exchange partner (e.g. review systems, sending selfies with drug paraphernalia, selectively choosing meet-up locations). This paper expands our understanding of the growing number of online illicit drug markets by shifting attention from dark web cryptomarkets to the much more widely accessed surface/clear web. Theoretical implications for the study of trust and risk in online illicit drug market exchanges are also considered.

Key Words: Surface Web, Online Illicit Drug Markets, Trust, Risk, Normalisation

## Introduction

The incorporation of technology in offline drug supply to reduce some of the real and perceived risks of illicit drug supply (e.g. seller reliability, exposure to law enforcement, product quality) has resulted in significant transformational changes in drug acquisition practices (May & Hough, 2004). Earlier elementary forms of technology, such as pagers/beepers and cheap, basic-function mobile phones, have historically reduced exchange related risk by reducing the visibility of drug sales (shifting them from open street-based markets to closed networks) and thus also facilitating flexible exchange arrangements that were less vulnerable to the presence of, or engagement with, police (May & Hough, 2004; Natarajan, Clarke, & Johnson, 1995). Many of these simpler uses of technology, including text messaging and voice calling functions, have persisted and continue to be widely adopted in current drug supply models to provide buyers with quick and convenient access to illicit drugs (Coomber & Moyle, 2018; Salinas, 2018; Sogaard, Kolind, Haller, & Hunt, 2019). Sitting alongside these conventional (offline) drug distribution models has been the integration of online technologies into the drug exchange process. This has transformed markets considerably as aspects of buying and selling drugs (e.g. finding a reliable connection, and organising delivery/meeting place) is increasingly become digitalised and reliant on various online platforms.

Such shifts mean that contemporary illicit drug market scholarship is therefore paying increasing attention to the presence of *online* illicit drug markets, that are typically distinguished by their presence over the surface web (referring to platforms accessible via conventional search engines such as Google) (Mounteney, Griffiths, & Vandam, 2016; Walsh, 2011), dark web cryptomarkets (where specialised anonymising browsers such as a Tor browser is required) (Martin, 2014), or through social media platforms installed on internet-enabled smartphones (such as Snapchat and Instagram) (Moyle, Childs, Coomber, & Barratt, 2019). To date, however, the bulk of criminological research examining online illicit drug markets has tended to focus disproportionately on the sale of illicit drugs through dark web cryptomarkets (see Grimani, Gavine, & Moncur, 2020 for a review), even though only a limited number of illicit drug market actors have adopted this method because of the difficulties accessing and navigating the process of buying and selling drugs this way (Decary-Hetu, Mousseau, & Vidal, 2018; Kowalski, Hooker, & Barratt, 2019; Van Buskirk et al., 2016). The burgeoning literature on the use of social media applications in illicit drug supply has recognised this and provides helpful insight into how more accessible means of technology are becoming the norm for how many individuals are accessing and supplying illicit drugs (Moyle et al., 2019). This, nevertheless, tends to overlook the role of the surface (or ‘clear’ web) in drug supply, where discussions often centre exclusively on New Psychoactive Substances, Performance and Image Enhancing Drugs, and other legally ambiguous “grey-market” substances (e.g. pharmaceuticals) (Kruithof et al., 2016; Walsh, 2011).

To help address this research gap, this article explores a contemporary example of a specific, popular surface web platform, *LeafedOut* (www.leafedout.com), and how it facilitates a mutually agreeable connection for cannabis exchange between buyers and sellers at the local level, albeit on an international platform. *LeafedOut* is one example of how illicit drug market actors steer clear of technologically arduous methods associated with drug buying via the dark web and the growing role of openly accessible spaces on the Internet for drug exchange. Specifically, this paper is interested in how the increased risks associated with engaging in this surface web drug market (e.g. digital traces of IP addresses and geolocation technology that disclose the nearby location of market participants), that can easily inform law enforcement, are perceived and navigated by actors involved in this space. This research on the adoption of surface web illicit drug markets therefore provides valuable insights into how the elevated risks of engaging with less secure means of technology are perceived and accommodated into technology-facilitated drug supply. This helps develop a more informed understanding of what is drawing buyers and sellers to different emerging forms of drug supply over the Internet.

This article begins with an overview of the nature of drug exchange in online environments and a discussion of how *online* drug exchanges are constituted by human and non-human elements that change the experience of buying and selling illicit drugs in the form of assemblages. The analytical framework of assemblage (Delanda, 2006; Deleuze & Guattari, 1988) is used to describe the emergence of risks in drug exchanges and how evolving digital spaces facilitate drug supply and continually shape the construction and experience of risk through new arrangements of humans and technologies. We then emphasise how there is a dearth of research on surface web illicit drug supply and how the formation of new exchange assemblages in this environment produces risks that are navigated, to a greater or lesser extent, by illicit drug market actors, before providing an overview of the methodology used for our exploration of the surface web located drug supply platform *LeafedOut*.

### How Risks are Assembled into Online Spaces of Illicit Drug Supply

Moving beyond simple structural or agential models of how society, economy, culture and politics are constructed, made and re-made, recent work into the theorisation of drug exchanges has considered that online methods of drug exchange can be understood as assemblages of bodies, affects, and technologies that are mediating and transforming the nature of buying and selling drugs (Childs, Coomber, & Bull, 2020). This perspective rests on the notion of how assemblages are formed when heterogenous elements including humans, non-humans (e.g. technologies and substances), practices, and material objects come together in systems configured to produce/reproduce something (in this case the context/s of exchange for illicit drugs) in assemblages that are constantly reconstructing the meanings and capacities of that particular assemblage (DeLanda, 2006; Deleuze & Guattari, 1988). Carrying this idea forward, drug market exchanges occur in instances where the elements of the assemblage remain stable and are reassembled when different elements are introduced into the exchange practice, which thus has important outcomes for how we can understand the process of, and nature of, drug exchanges (Childs et al., 2020). Using this framework we can account for meaningful differentiation (Coomber 2015) within broader drug markets generally (in terms of the varying market forms and practice) as well as how specific market structures and practices, evolve and manifest dynamically. This moves us away from the overly homogenised depictions of ‘drug markets’ and those that inhabit them that are so common and undermining of nuanced understanding (Martin et al 2020; Coomber 2015). This notion of assemblage highlights how risks are dynamically produced in specific formations of heterogenous elements (Lupton, 2013). Applying this in digital society (see Lupton, 2016; van Loon, 2002), is to note how digital risk assemblages are entangled with humans, digital technologies, and other non-human actors in ever-evolving combinations responsive to changes in context (see also Lupton, 2016). This notion of assemblage provides a framework for our discussion below of how risk actively shapes, and is shaped by, the elements (e.g. the dynamic interaction of technological configurations of physical and virtual spaces, platforms, policies, practices and norms, and actor perceptions and behaviours) constituting online illicit drug exchanges.

Online technologies now offer numerous opportunities to engage in drug exchanges to alleviate the typical risks associated with offline forms of illicit drug supply. In particular, risk mitigation has been most prominent in the functioning of dark web cryptomarkets for drug sales, and an alleviation of risks compared to conventional drug distribution models (e.g. avoiding law enforcement and finding a reliable exchange partner) is a frequently cited reason for utilising dark web marketplaces (Aldridge & Askew, 2017; Martin, Munksgaard, Coomber, Demant, & Barratt, 2020; Van Hout & Bingham, 2014). This is largely due to the fact that dark web cryptomarkets, popularised by Silk Road in 2011, exist in encrypted spaces through a specialised browser (a Tor Browser) that hides the IP address of any users. In addition, there are several structural features that provide comfort and security to drug market actors operating in this space. For example, buyers can read feedback/review systems and participate in dedicated forums to help gauge the authenticity of sellers and their product quality, cryptocurrencies are used to obfuscate the electronic transfer of funds for illegal purchases, drugs are delivered through postal systems negating any need for an in-person (potentially violent) interaction, and exchanges are overseen by third-party administrators and escrow payment systems that ensure parties adhere to norms (Barratt & Aldridge, 2016; Barratt, Ferris, & Winstock, 2014; Martin, 2014). In dark web drug exchanges, the assemblage of elements described above contains humans and technological structures used throughout the exchange, which function together to reduce the typical anxieties of the drug buying/selling experience.

This discussion also shows how the constituent elements involved in online drug exchanges can resolve issues of trust. In offline drug distribution practices, interpersonal trust is a fundamental aspect in drug supply to minimise the risks and uncertainties, including instances where exchange partners can act opportunistically for fraud/violence and where there may be asymmetrical distribution of information between those involved in the exchange (e.g. where the supplier may have greater awareness of product quality than buyers) (Moeller, 2018; Moeller & Sandberg, 2015; Taylor & Potter, 2013). In the online space, technologies such as feedback systems and secure communication channels are a vital part of forming, cultivating and maintaining trust in order to reduce risks in the online drug exchange (Bancroft et al., 2019). This is also indicative of trust when buying and selling goods in legal online markets, whereby traditional signals for assessing trustworthiness are replaced with interactions with technology and reputation systems (Etzioni, 2019; Fuller, Serva, & Benamati, 2007).

The online space for drug distribution is in a constant state of flux and as different online spaces evolve so too does the assemblage that constitutes online illicit drug exchanges. Indeed, increasing attention on the evolving nature of online illicit drug markets has revealed how, importantly, there are meaningful market variations within online spaces and significant ‘differentiation’ (see Coomber, 2010, 2015) of practice. There are numerous examples demonstrating a growing recognition that dark web cryptomarkets can take on varying forms, such as single-vendor marketplaces (Flamand & Decary-Hetu, 2019), markets that do not resemble the typical eBay/Amazon archetype (e.g. categorised vendor information, review and feedback systems) (Bancroft, Squirrell, Zaunseder, & Rafanell, 2019), and that some buyers and sellers choose to ‘direct deal’ via an encrypted messaging application and avoid the traditional protocols of dark web drug supply (Childs, Coomber, Bull, & Barratt, 2020). As these market variations occur, the arrangement of elements that form a drug exchange is reformed and a new assemblage becomes stabilised which alters the production and experience of risk in the drug exchange. For example, when actors reconstruct the exchange assemblage in ‘direct dealing’, buyers increase their likelihood of becoming a victim to a scam, as there is now no oversight of the deal from administrators as the supply was organised on an alternate platform (Childs, Coomber, Bull, et al., 2020).

Market variations and differentiation in dark web cryptomarket drug supply reveals how the mitigation of risk can often play a secondary role to the need for convenience and ease-of-access in organising drug exchanges over the Internet. This is also be illustrated by the recent growing uptake of social media drug markets (e.g. Facebook Groups, Instagram, Snapchat) (Moyle et al., 2019) where reconfigurations of the online context alter the exchange process and introduce new potential risks to buyers and sellers engaging in this market type. In app-based drug markets, for example, there are no comprehensive assurances of product quality, an in-person hand-to-hand drug exchange is required, and there is elevated exposure to law enforcement when organising supply in unencrypted spaces (Moyle et al., 2019; Bakken & Demant, 2019; Demant, Bakken, Oksanen & Gunnlaugsson, 2019). However, social media applications are adopted because of their convenience of use and the confidence that users have in these platforms, particularly as many applications are already installed on an individual’s smartphone, and many apps’ anonymising features are perceived to still provide *some* form of security to buyer and seller (Moyle et al., 2019). Bakken (2021) also suggests that visual signals of trust on vendor profiles can potentially help mitigate the risks associated with sourcing drugs on social media. Further attempting to understanding who is involved in social media markets, Oksanen and colleagues’ (2021) recent study investigating the psychological characteristics of those who purchase illicit drugs on social media in the Unites States and Spain indicates that buying drugs on social media is potentially associated with lower self-control, higher psychological distress, excessive gambling behaviour, and excessive Internet use.

#### Surface Web Illicit Drug Markets

Whilst there is now growing research on how easily accessible forms of technology, including social media applications, are being used for drug exchange, and how risk is navigated in these drug exchange assemblages, considerably less is known about the role of the surface web in the online drug market ecosystem. Early considerations of the interaction between the surface (or ‘clear’) web and illicit drugs began to arise in the mid 2000s and were predominately centred on how online communities could provide information on manufacturing/extracting substances (e.g. extracting opium from poppy seeds, cannabis botany) (Boyer, Shannon, & Hibberd, 2005; Montagne, 2008), rather than how the surface web could function as a space to facilitate drug exchanges. This has changed considerably in recent years as webshops offering the distribution of New Psychoactive Substances (NPS) and lifestyle pharmaceuticals (in particular performance and image enhancing drugs) have flourished over the surface web (Walsh, 2011).

The distribution of these products over the surface web largely takes place because of their position in what could be termed a grey market. That is, the products involved in the sale exist in an ambiguous legal status as they cross jurisdictional boundaries that differentially define their legal status (e.g. are legally manufactured and sold in one country but remain illegal in others) and/or the products are sold through unauthorised distribution routes (Dietzler, 2013; van Amsterdam, Nutt, & van den Brink, 2013). Though there may be risks involved in purchasing these substances over the Internet, actors justify their purchases and minimise fears because the product exists in a grey market (Kraska, Bussard, & Brent, 2010; Lavorgna, 2014; Paoli & Greenfield, 2017). Furthermore, even with many recent legislative changes aimed at curbing the distribution of New Psychoactive Substance through the clear web, some buyers remain ambivalent of the legal status of certain substances being offered on webshops and continue to engage in these markets (Pickering & Greenwood, 2019). When considering the constantly evolving nature of online illicit drug markets, as we have done in the above review of literature, focusing only on the distribution of grey market substances (e.g. NPS and PIEDs) on the surface web is too narrow and it limits our understanding of the precise role of the surface web for other commonly used *illicit* drugs. This includes, for example, how openly accessible websites are facilitating illicit drug exchanges, and how actors engage with risk when engaging in illicit drug supply over the Internet. Online illicit drug markets continue to expand and diversify, so developing a clearer understanding of the different ways the Internet is facilitating illicit drug exchanges changing the nature of drug supply is important in order to keep track of contemporary drug market trends.

#### Drug Supply on LeafedOut

This article focuses on *LeafedOut* (www.leafedout.com) as an example of a surface web platform for buying and selling cannabis. *LeafedOut*, originally named *LeafedIn* as a play-on-words from the popular professional networking website *LinkedIn,* was initially developed to accommodate the legal/medicinal supply of cannabis in regulated states in the United States of America, but, because the platform utilises global geolocation technology, its use as has since expanded and has been adopted by drug market actors in other countries even in contexts where cannabis use and distribution remains illegal (e.g. Australia, UK, New Zealand). *LeafedOut* is a peer-to-peer (P2P) marketplace, where the website provides the technology to form connections between individuals based on geographic proximity, but it is ultimately up to the users of the platform to locate a nearby seller or buyer and arrange the exchange of goods, as opposed to the website offering a centralised service through which to buy and sell goods (e.g. eBay and Amazon). *LeafedOut*’s popularity as a sourcing platform can be indicated in several ways. Firstly, in the three most populace capital cities in Australia, at the time of writing, there were 37, 77, and 51 profiles in Sydney, Melbourne and Brisbane respectively within just a 1 mile (1.6 kms) radius from the city centre. There are many more outside of this scope and a visual inspection of the website shows the sheer number of profiles on the website in various regions throughout Australia. Additionally, the popularity of this website can also be ascertained by its acceptance and discussion in online communities (e.g. Reddit), where individuals interested in sourcing cannabis are directed to try *LeafedOut*. The website has also been mentioned in various news articles highlighting how it is used in an Australian context (see Murphy, 2017). Attending to *LeafedOut* as a form of drug distribution that takes place through the surface web demonstrates the continued innovation in online illicit drug exchange spaces and the willingness of actors to take on the risks of engaging in operations occurring in the visible portions of the Internet.

### Aim

The risks associated with participating in online illicit drug markets are contextually formed and the result of the unique configuration of human and non-human elements that constitute the drug exchange. This paper seeks to explore how the risks involved in a surface web illicit drug market, *LeafedOut*, are comprehended and navigated by those involved engaging in this digital platform. It does this by analysing insights generated by buyers and sellers who use this website and asking them to explicitly consider why they are willing to take on the risks of market participation in this visible portion of the Internet. This exploratory work on emerging forms of online illicit drug markets echoes other research (see Childs, Coomber, Bull & Barratt, 2020; Martin et al., 2020; Moyle et al., 2019) that is primarily interested in the motivations and barriers surrounding engagement in various online platforms, and how risk is perceived by those operating in digital spaces for drug supply. The geophysical focus of this research was undertaken in Australia.

## Method

This paper explores the role of the surface web in illicit drug supply through a case study of *LeafedOut* and the perspectives of buyers and sellers active on this website. The data for our study comes from a combination of unobtrusive observations that helped us understand the organisation of the website, as well as interviews with buyers and sellers active in this space. Prior to the interviews being conducted, the lead author (AC) spent a considerable amount of time engaged in the website in a form of passive virtual observation (Hine, 2008; Kozinets, 2002, 2009), which occurred for approximately 6 months between 2018-2019, in order to gain a sense of how the website functions to facilitate the exchange of illicit drugs. Unobtrusive and non-influencing monitoring of online websites, whereby the researcher remains completely invisible when lurking webpages, can provide practical insights into how websites function and how members interact in a context not impacted upon by the researcher (Kozinets, 2002).

After conducting this initial period of passive observation, a semi-structured qualitative interview schedule was developed to include open and closed questions designed to explore the mechanics of drug supply over *LeafedOut*, as well as actors’ motivations, barriers and perceptions of risk when engaging with this website. Having a semi-structured approach reflected the exploratory aims of this research and allowed novel concepts beyond the interview schedule to emerge, questions to be modified or added as necessary, and ensured that the interview schedule did not take precedence over issues that the participant may have wanted to discuss (Brinkmann, 2014). During the passive observation of the website it became clear that *Wickr*, a popular encrypted messaging application, was a key mode of communication between individuals using this site in Australia. As Wickr was an accepted means of communication, it was used to recruit and conduct interviews. Individuals were directly contacted using the encrypted messaging smartphone application Wickr and invited to be part of the study. This is a method increasingly being used in qualitative research involving hard-to-reach populations of buyers and sellers of illicit drugs online because of the trust that actors have in security features that allow encrypted communication and protect personal data (Bakken & Demant, 2019; Martin et al., 2020; Masson & Bancroft, 2018).

A total of 20 individuals (11 buyers, 9 sellers) who use *LeafedOut* in Australia were recruited for interviews in this study. Not every participant was willing to provide extensive demographic details, potentially because of traditional fears that hard-to-reach groups of drug market participants often hold towards researchers (e.g., that providing sensitive information increases exposure to law enforcement) (Coomber, 1997; Sandberg & Copes, 2013), but we were nevertheless able to gather some details of the participants who made up the sample. The sample contained individuals in various locations throughout Australia (Queensland, New South Wales, Victoria, and Western Australia). All participants had engaged in some form of offline drug supply/access prior to their engagement with this website. Their descriptions of involvement in past offline illicit drug market activity corresponded with what Coomber, Moyle, and South (2016) describe as social supply, whereby sales are conducted between friends and acquaintances, for little or no profit, often in low-risk contexts. The buyers in our sample reported a range of historical drug use, but cannabis was their main drug of choice with its use being between daily and once a month. Cannabis was also the preferred drug to sell amongst the vendors in our sample, and though dealing predominately in cannabis, some sellers described how they have previously ‘dabbled’ (Mohamed & Fritsvold, 2006) in the sale of other drugs (e.g. MDMA, Xanax) to either meet customer demands or because of economic motivations. The interviews lasted in length between 1 month (with regular contact daily/ever few days) to 1 day (where only several messages were exchanges). Once completed, the interviews were transcribed into a document to remove the username associated with a participant’s *Wickr* address, and a unique identifier was attached to each participant corresponding to their role (Buyer or Vendor) and the number at which they were interviewed. Interview transcripts were then uploaded into NVivo12 to assist with the data analysis.

A combination of inductive and deductive approaches to analysing the interview data ensued, which protected against an overreliance on theory to facilitate emerging findings in the data (Collins & Stockton, 2018; Fereday & Cochrane, 2006). The protocol for thematic analysis outlined by Braun and Clarke (2006) was used to identify themes that emerged throughout the interviews, as this type of inductive thematic analysis is considered a useful method of capturing and exploring the complexities of meanings that emerge within interview data. This process began with open coding by using initial notes and memos alongside the data when reading the transcripts over line-by-line. Following this process, and after further reflection of the data and discussions between authors AC and MB, key themes emerged capturing the regularity between events, perceptions, and emotions. The quotes selected in the following section are used to illustrate the essence of these themes and conscious efforts have been made to represent views drawn from participants across the sample interviewed for this study. Quotes may have been slightly edited for grammatical purposes, or to assist with clarity of meaning, and bracketed words have been used in quotes to indicate the authors own additions or to further explain comments made from participants. This study was granted ethical approval from Griffith University (GU Ref No: 2018/141).

## Findings

### Setting and Context: A Virtual Walkthrough of the Surface Web Illicit Drug Market *LeafedOut*

The unobtrusive observations of *LeafedOut* provided setting and context for the interview data and a virtual “walkthrough” of this platform. The walkthrough method is a way of engaging directly with a digital platform to examine the numerous elements that comprise an interface; it provides a structured approach for engaging directly with digital platforms through the position of a potential user (Dieter et al., 2019; Light, Burgess, & Duguay, 2018). Creating an account on *LeafedOut* requires users to sign up with a username and password, link the account to an active email address, indicate their role on the website (a consumer, vendor, worker, or employer), and agree to the terms of service on the website. Users are then provided an interactive map after entering their location to help locate other individuals in their area for cannabis supply, as shown in Figure 1. In reviewing the map, and navigating the various aspects of the website, it became clear how multiple elements work together to create and sustain a feeling of community by actively drawing upon the cultural codes and symbols of cannabis use. For example, the use of the cannabis plant to depict user accounts on the map is a purposeful choice by the website designers because of its special significance as a symbolic marker of this culture (Sandberg, 2012), and buyer/vendor profiles contained numerous other instances of the clear incorporation of the identities of cannabis users (e.g. the use of emojis to signify cannabis plants and the widespread use of signifying language such as “*kush*”, “*420*”, and “*smoke*”). As previously stated, *LeafedOut* functions as a platform that connects buyers and sellers, and through unobtrusive engagement it became clear that this was made possible through user profiles that allowed users to advertise their contact details and direct others to contact them on an encrypted messaging application to initiate a transaction. The following section of this paper reports on the results obtained from the thematic analysis of interviews with actors who use this website for supplying and/or accessing cannabis.

[FIGURE 1 HERE]

### Motivations for Illicit Drug Supply on the Surface Web

Pragmatic motivations for buying and selling illicit drugs in a timely and uncomplicated manner dominated the accounts of why buyers and sellers used *LeafedOut*. Primarily, the buyers in our sample noted the convenience associated with buying drugs through this surface web platform, and in particular, the speed at which cannabis (and potentially other substances) could be obtained when using *LeafedOut* compared to other online and offline mediums of drug supply. To illustrate, after identifying a seller willing to make an exchange, one participant claimed how a typical deal could be undertaken “*probably on the night. Within 3-5 hours”* (**B4**). Buyers and sellers cited how the speed of exchanges was made possible because of the unique features of the website and its interactive map, which allowed actors to connect with others in their local area. Because the website was seen to function predominately around cannabis, the perceived quality of cannabis and was another drawcard for using *LeafedOut,* and sellers believed this was a prime location to distribute what they saw as high quality cannabis. But this sentiment was not unanimously shared, as one buyer spoke about how the website was “*full of bad quality weed. Such as PGR*” (**B6**), referring to plant growth regulators (PGR) that are additives used in the growing stage to force the early flowering of plants (Small, 2016).

A unique feature of *LeafedOut* compared to other methods of buying and selling drugs online (e.g. dark web and social media apps), and forming a vital part of this online drug exchange assemblage, was the ease at which buyers and sellers could locate the website through Google searches. A unique feature of *LeafedOut* compared to other methods of buying and selling drugs online (e.g. dark web and social media apps) was the ease at which buyers and sellers could locate the website through Google searches. This was a differentiating factor for this market access compared to social media supply routes, such as Facebook, as there was no need to gain access to designated groups (Demant et al., 2019), or from websites hidden in the dark web:

*I found it through a quick vague google search…* (**B3)**

*One of the first things that come up when you google search “420* [a number used to refer to cannabis or smoking cannabis] *Melbourne”.* **(B4)**

*I found out about it through some basic searches about Wickr and about finding weed online…* **(B9)**

The above quotes represent only a portion of those discussing how they came across the website through their situational need for cannabis. Without access to other local or preferred suppliers (e.g. moving interstate, on a holiday) many buyers applied simple Google searches on their computers through regular browsers (e.g. Google Chrome, Safari, Internet Explorer) in order to locate a supplier. This aspect of Googlization, referring to the permeation of Google in culture affecting multiple economic, political, and social aspects of life (Thielmann, van der Velden, Fischer, & Vogler, 2012; Vaidhyanathan, 2010), has been cited as one of the key reasons for the growth of legally ambiguous markets (e.g. online pharmacies) over the surface web, as simple Google search terms (e.g. “*buy steroids online*”, “*buy research chemicals online*”) can easily be applied to access relevant web-shops (Kraska et al., 2010; Thornton, Darracq, Gugelmann, & Armenian, 2019). Our interviews show how this same process of ‘Googling’ is being integrated into searches for *illicit* substances, such as cannabis, and that digital drug market access for our participants was unencumbered by requirements such as specialised programs (e.g. Tor Browsers, cryptocurrencies) and group participation marked by secrecy, which can often act as a barrier to the growth of cryptomarkets (Kowalski et al., 2019). These results suggest that Google and other search engines can be used at an individual level for sourcing drugs, but also, as Perdue, Hawdon and Thames (2018) show, Google can provide unique insights and predictions into emerging drug trends at an aggregate level.

Many of those interviewed in our study had experiences with other forms of online illicit drug markets (e.g. cryptomarkets and social media) and deliberated on their decisions to engage in the surface web by reflecting on the affordance capacities of the *LeafedOut* assemblage*.* For example, a vendor in our sample (**V9**) spoke about his experiences operating simultaneous vendor accounts on both the surface web and the dark web. He acknowledged that although selling drugs on the dark web was, for him, safer and far less risky because of technological structures that guide exchanges and provide security, the financial costs associated with having a vendor account on the dark web was prohibitive, whereas *LeafedOut* offered a free platform on an accessible part of the Internet to advertise his products. This acknowledgement of the affordances of different online settings took place through cost-benefit assessments of financial motivations for, and convenience of, the exchange; but it also included more abstract considerations of forming trust in online platforms and how this was easier to do in the ‘regular’ part of the Internet:

*Darknet is not user friendly and it’s mostly mail only. Leafy is in person meet up. Aussies in general don’t like too much technical jargon. They want it easy like a KFC drive through*.**(V6)**

*I wouldn’t trust any other site.* (**V3**)

*I have tried dabbling on markets like Silkroad, but they just seemed so I don’t know taboo it scares the s\*\*\* out of me really…Its just the trust factor really ‘cause now we’re talking cryptocurrencies, and face to face cash deals are all I’ve ever known. The thought of handing large sums of money over on a hope that the delivery makes it into the country or be posted without it being traced…* *Some people seem to love the way that darknet markets are put together with the escrow and stuff…I think it comes down to not completely understanding how the dark net works.* (**V5)**

Organising drug supply over the surface web involved motivations often cited by actors when transitioning to digitally-mediated supply (e.g. speed of exchanges, see Moyle et al. 2019), but its ease of access over the regular portion of the Internet was a highlighting feature. It was in these narratives of access, and willingness to trust open forms of technology as opposed to dark web spaces, where we began to see how the website’s presence on the surface web, where a simple Google search is all that is needed for access and anyone with a computer can locate the website without difficulty, started to structure the perceived risks associated with this digital platform.

### Navigating the Traditional and Emergent Risks of Surface Web Drug Supply

#### Digital Traces

The risks associated with *LeafedOut* can be divided between the traditional risks of drug supply (e.g. law enforcement, product quality, and seller reliability) and the emergence of new risks in this particular online drug exchange assemblage (e.g. digital traces and falling victim to scams). Avoiding exposure to law enforcement has been one of the chief concerns for actors that directly structures how drug exchanges are performed (Eck, 1995). In online illicit drug markets, the primary concern of actors often relates to the digital traces that are produced through interactions with technology (Decary-Hetu & Aldridge, 2015), which are often relied on by law enforcement practices and can provide an abundance of evidence in the course of criminal investigations (Casey, 2019). Organising a drug exchange over *LeafedOut* involved greater risks associated with digital traces of market involvement because of the openness digital activity and retrievability of digital traces. Some interviewees did in fact express concerns over their safety in relation to detection by law enforcement agencies because of this. To overcome fears of detection linked to digital traces, participants used an end-to-end encrypted messaging application (e.g. Wickr, Telegram, or Signal) when organising the face-to-face illicit drug exchange. They discussed how the presence of this market on the accessible portion of the web, and the limited security features of traditional communication methods (e.g. the retrievability of mobile phone data, see Berry 2018), necessitated the move to an encrypted messaging application to organise the deal:

*Wickr just has better security – leafedin is associated with an account, region and sometimes it creates a consumer mark on your address…its super unsafe….* (**B5)**

*I only use Wickr for this as well…I can erase everything in one click.* **(V7)**

All interviewees described how it was essential to move across to an encrypted messaging application to organise a meeting place for the illicit drug exchange, and described how the advantages of *LeafedOut* concerning its accessibility on the surface web are balanced out against the technological risks produced by this same feature. The participants recognised the risks of this particular assemblage of *LeafedOut* drug buying and the digital trace risks associated with drug supply over the surface web, and played an active role in reassembling the elements involved in the drug exchange to reduce their exposure to law enforcement.

#### Normalisation of Cannabis Supply

Even though there was a recognition that browsing activity on the surface web could potentially expose individuals to elevated risks, actors were mostly impervious to the threat of law enforcement because of the object involved in this exchange assemblage. Perceptions that the legal risks were minor were predominately tied into the typical drug exchanged through this platform (cannabis), the amount (small amounts for personal use), and a belief that the risk of law enforcement was neutralised (see Sykes & Matza, 1957) by differentiating cannabis’ legal risk from other substances that were perceived as more dangerous and needing regulation by the police (e.g. cocaine) (Jacobs, 1999):

*The police aren’t wasting their time with trying to bust someone for a bag of weed*. **(B1)**

*I’m not concerned about police just because I don’t buy anything close to a drug trafficking charge – police wouldn’t waste their time trying to arrest a guy buying $90 worth of weed* 😂 *[crying laughter emoji]. Worst case scenario they pick me up for possession and I get a drug diversion…which is basically a warning[[1]](#footnote-1).* **(B5)**

The relative normalisation (Coomber et al., 2016) or increasing social acceptance of the use of some substances, such as cannabis, in recent years is being increasingly incorporated into the functioning of contemporary illicit drug markets. This is evidenced by the social supply of substances between friends and the increasing recognition of type of supply in judicial systems (Chatwin & Potter, 2014; Coomber et al., 2018; Coomber et al., 2016). In our study, the broader societal context in which the use of cannabis is relatively normalised, and the fact that *LeafedOut* exists over the regular part of the Internet, interacted to produce a context where many actors disregarded the legal risks associated with this form of supply. Furthermore, even those more anxious about their safety compared to those who confidently minimised the risks associated with cannabis supply only saw the threat of police as something that required that they keep their “*eyes peeled*” (V3). Law enforcement was a vague or perhaps distant risk, but one that could nevertheless be accommodated for with appropriate safeguarding practices. The varying perceptions of the possibility of legal sanctions as a consequence of involvement in this surface web illicit drug market were mediated through the transition to alternate digital tools/platforms in order to reassemble the LeafedOut exchange. This together with the normalisation of cannabis use amongst the participants interviewed meant that the perceived risks associated with market engagement over *LeafedOut* were low, and even laughable (Dickinson & Wright, 2017).

#### Gift Card Scammers

Instead of the main source of risk being the product of outside actors, such as law enforcement, the buyers on this website perceived a far greater threat from other actors on *LeafedOut*. While online methods of drug buying can allay traditional fears that link drug buying with potential exposure to violence (Barratt, Ferris, & Winstock, 2016; Morselli, Decary-Hetu, Paquet-Clouston, & Aldridge, 2017), novel risks through new assemblages of technologies and humans emerge. In *LeafedOut*, prospective buyers noted how they spent a considerable amount of time establishing who in fact was a *real* dealer as opposed to a scammer. Buyers discussed their real experiences falling victim to scams, and how the accessibility of this website over the surface web generated a significant presence of fraudulent actors in this market. The scams employed in this platform typically centred on versions of advance fee fraud scams (Chang, 2008), whereby fraudulent actors attempted to secure payments from buyers (typically through different types of gift cards) without ever intending to meet for a drug exchange. These scams, a form of process-based fraudulent resource exchange (see Moeller, Munksgaard, & Demant, 2017), often employed elements of manipulation by deceiving buyers into believing that payment with pre-paid gift cards makes the exchange safer and quicker. In this surface web platform, marked by the absence of dark web mechanisms to ensure actors adhere to exchange norms (e.g. third-party administrators, formal dispute resolution systems, escrow payment systems, verification of vendors), scammers flourished, and the majority of our participants believed that this was the largest source of risk when co-ordinating drug exchanges in this digital space.

### The Virtues and Limits of Technology in Establishing Trust

The absence of formalised technological structures to govern exchange processes (e.g. escrow payment systems and administrator oversight) that is common in dark web cryptomarkets, and the fact that this market existed in the visible portion of the web, meant that actors had to rely centrally on trust to mitigate the potential risks associated with drug supply through *LeafedOut*. The following section describes: how the process of establishing and maintaining trust between drug exchange actors involved a wide array of practices to assess the trustworthiness of an exchange partner, the innovative ways that technology was used to establish trustworthiness, and how trust between individuals structured offline exchange locations.

#### Assessing Trustworthiness

A combination of strategies were employed to gauge the trustworthiness of a potential exchange partner on *LeafedOut*. Online feedback and review systems have become a significant feature of the online shopping experience in legal markets and promote consumers’ trust in online structures for exchange (Dellarocas, 2003; McKnight & Chervany, 2001; Ren, Yeoh, Ee, & Popovic, 2017). Like broader research on trust in legal online markets, existing research in online platforms for illicit drug supply has focussed extensively on the importance of feedback ratings to mitigate a buyer’s anxiety regarding the reliability of an illicit drug vendor (Bakken, Moeller, & Sandberg, 2018). Consistent with this literature, some buyers in our sample did refer to the role of structural features in the digital platform for signalling trust, and how the ability to read feedback and reviews on an individual’s profile provided an initial indication of the trustworthiness of a potential exchange partner:

*I find you need to speak to people who already have reviews, anyone else is probably a fraud.* (**B11)**

*So far so good I’ve met some nice people due to the ratings and reviews that people can leave on one’s profile from leafedin. It really helps weed out the sketchy cunts.***(B8)**

*I usually referred back to the reviews – made sure they were recent..(****B5****)*

*I guess maybe the review aspect of the site allows for community voting, and usually only the cream of the crop are on top and easily found (****B10****)*

Although some in our sample referred to feedback systems, this was not the only information that buyers relied upon to make exchanges, and in fact, some buyers and vendors believed that many people who use the website do not pay attention to, nor contribute towards, the review systems on the website. In addition, one buyer (**B4**) who was interviewed reasoned how, contrary to many reports on the importance of establishing reputations in virtual settings (Bakken et al., 2018; Nurmi, Kaskela, Perala, & Oksanen, 2017), the genuine sellers on the website were those with newer accounts as they were looking to part with stock quickly. Many interviewees described how they relied on these personal, more intuitive methods, rather than feedback systems for assessing risks and the trustworthiness of an exchange partner. To this point, buyers and sellers referred to the various ways that some people simply give off a “*bad vibe*” (**V5**), may “*look suspicious*”(**V8**), and that it “*just depends on how the person talks…*” (**B6**). Rather than relying only on formal systems, many simply chose to instead be guided by these unquantifiable assessments of trust that were being driven by a sense of the situation and individual gut-feelings.

#### Sending Selfies to Establish Trust

Assemblages can produce new risks into the drug exchange but configurations of humans and technology can also produce new methods for developing trust. A unique technique for building trust and ensuring the reliability of an exchange partner described in interviews was the use of photo messaging as a form of a pre-meet up check when co-ordinating cannabis exchanges through this platform. Pre-meeting checks of the other, using available technology, have been reported previously. For example, Edmunds, Hough, and Urquía (1996) report how, in the street-based illicit drug markets they studied, buyers would contact sellers via mobile phones in order to confirm identity through the use of nicknames and codewords. In our study of this surface web illicit drug market, when users transitioned to an encrypted messaging application to organise the deal, they used the technology afforded to them via camera-enabled smartphones and messaging platforms that support sending a photo to establish new mechanisms for trusting a previously unknown person for the exchange:

*Yes and asked for a photo (I thought this was a little weird) but then when I met him near a tram stop he was able to say hi and to anyone who could see it just looked like a normal interaction and also saved me from being like hi are you....*[Q: You weren’t worried you might be sending it to a cop?]…*I mean sure it's incriminating in the sense that whoever I’m sending my photo to knows I want weed. But you can’t get arrested for that.* (**B1)**

*I also had a seller ask me to do a specific hand gesture in front of paraphernalia [in a photo] in order to verify my legitimacy.* (**B4)**

*…maybe ask them to send a photo of writing on a piece of paper with their smoking device.* (**B6)**

Creating and sharing ‘selfies’ involves a digitally mediated self-representation and the visual placement of the self in a particular situation, event or place that forms an identity the creator of the selfie wishes to present to others (Hess, 2015; Koliska & Roberts, 2015). In our study, it appeared that either buyers or sellers might initiate the process of asking the exchange partner to send a selfie with drug paraphernalia to present themselves as a genuine drug user/supplier. Ladegaard (2020), in his research on dark web cryptomarkets, noted how despite its benefits, anonymity can present some challenges for users in maintaining trust between one another. In our interviews, however, the digital visualisation of the drug economy (Moyle et al., 2019) represented on *LeafedOut* that extended from emoji representations of users through geo-located cannabis leaves to user-specific photographs, which established that someone was a legitimate drug market actor, was key to minimising fears about meeting with an unknown person or potentially dialoguing with a scammer.

#### Trust and Offline Drug Exchanges

The use of *LeafedOut* required an in-person meeting place for the drug exchange to occur, and perceptions of trust and risk worked in tandem with the negotiation of where this would play out for actors. After connecting via *LeafedOut*, in-person exchange locations varied considerably from personal residences (or a street nearby), public areas (e.g. shopping centres, parks, and public transport stops), to near an individual’s place of employment. The spaces of in-person meetings for the drug exchange are important beyond simplistic descriptions of geographies (Dilkes-Frayne, 2016; Duff, 2012) as it illustrates how there are affective and social capacities in the drug exchange assemblage, like perspections of trust and risk, and how this can materialise in-practice:

*I set up a meeting place after I’m 100% sure it’s safe and real*…*I keep things very vague until the other side confirms and there’s no one place I do travel here and there for people and make my decision on how the other person presents themselves before they see me****.* (V3)**

*All clients are aware that it’s not legal so once they start giving out the drop off address they themselves know that if anything goes wrong they stand to go in for it as well.* **(V8)**

The production of space through perceptions of trust and risk was dynamic and constantly shifted the nature of drug exchanges. For example, as actors came to realise they could trust each other after successful drug exchanges, this could reorient the location of meeting places:

*… After a while a lot of people just invite me to their residence which eliminates the public risk factor but some form of trust needs to be built from both parties before that…they’re taking more of a risk being I now know where they live. I still stick to my safety rules and don’t enter the premises for quite a few meets. It shows me they are willing to trust me with giving me their address [so there is] less chance that they are dodgy.* (**V5**)

In addition to situational factors (e.g. lack of police), physical exchange space locations were the product of the interaction between drug market actors’ perceptions of trust and risk, and indeed, these spaces could also reinforce or reduce trust. Meeting with someone from *LeafedOut* at their personal residence, or somewhere near their house, was associated with feelings of comfort and security, whereas meeting places including transportation hubs and shopping centres signalled little trust between buyers and sellers. This low level of trust had the potential to build if successful exchanges were produced over time and meeting locations shifted, demonstrating how the assemblage of drug market exchanges has the capacity to constantly evolve and change the meanings of the drug exchange.

## Conclusion

Common depictions of online illicit drug markets tend to focus on the process of buying and selling illicit drugs on dark web cryptomarkets. However, a greater degree of illicit drug supply potentially takes place through easier to access forms of technology (Moyle et al., 2019). This article has explored how a website on the surface web is facilitating illicit drug supply, and why and how individuals might be willing to use such an apparently risky platform for the purposes of drug exchange. In doing so, we have specifically paid attention to how the risks associated with engaging in this digital space are navigated and why buyers and sellers of illicit drugs might be willing to compromise on digital security and adopt elevated levels of risk in drug exchange practices. Although there was some evidence of a wide range of substances exchanged via connections made on this platform, the platform studied in this paper specialised in cannabis supply, which was a key aspect of minimising fears when using the surface web for access to local markets. Actors engaged with this platform for cannabis supply because the website existed over the accessible portion of the Internet, and the features of the website promoted a community feeling of likeminded cannabis users/suppliers as opposed to the “*taboo*” and anonymous dark web, thus reflecting the perception of widespread societal normalisation of cannabis use/supply over the surface web.

The notion of assemblage (DeLanda, 2006; Deleuze & Guattari, 1988) was used throughout this paper to trace how the heterogenous elements involved in drug exchanges (body, objects, affects, and technologies) are entangled in the production and navigation of risk and trust. The advantages of using *LeafedOut*, associated with its accessibility over the surface web, is balanced out against the technological risks produced by using a platform on the openly accessible portion of the Internet, where digital traces (e.g. IP addresses) can inform law enforcement action. A deconstruction of the perceived risks, accessed directly through interviews with actors involved in this space, shows how buyers and vendors often neutralised the potential legal consequences of their activity through their framing of the object involved in the exchange. Participants’ responses demonstrated how aspects of perceived societal normalisation of cannabis use contributed to the emergence and adoption of this cannabis market over the visible portion of the Internet.

Our results have also showed how actors take measures to reassemble the drug exchange elements in order to reduce risk by shifting between online platforms. For example, the initial risks of digital traces that are produced from surface web participation are navigated by actively reshaping the human/technology assemblage by moving onto an encrypted messaging application. This assemblage provides stability for periods of time, producing and (re)constructing the experience of risk and other capacities (e.g. trust) that mediate drug exchanges. Resultantly, this then contributed to the configuration of entirely new assemblages of risk (e.g. avoiding scammers, being asked to send a selfie, determining an offline exchange meeting place) to be navigated. We have also highlighted in this exploration of this surface web drug market the complex ways that trust is perceived, produced, and performed in technology-mediated drug exchanges, and encourage future research to be attentive to the wide variety of trust relations (both interpersonally and digitally structured) that exists between exchange actors (McKnight & Chervany, 2001).

This paper helps build an understanding of why online methods of illicit drug supply away from the dark web are appealing to buyers and sellers, and why such methods continue to gain prominence as a legitimate supply method despite the additional risks to personal security from law enforcement. The Internet, and other digital devices connected online, have created virtual spaces where illicit drugs can be bought and sold. The development of these digital spaces, and the inclusion of technology in drug supply practices, will continue to evolve. As these developments occur, an understanding of how actors are participating in online mediums of exchange is crucial to understanding how the process of risk/trust governs the supply of illicit drugs between actors in digital spaces.

**References**

Aldridge, J., & Askew, R. (2017). Delivery dilemmas: How drug cryptomarket users identify and seek to reduce their risk of detection by law enforcement. *International Journal of Drug Policy, 41*, 101-109. doi:10.1016/j.drugpo.2016.10.010

Bakken, S. A. (2021). Drug dealers gone digital: using signalling theory to analyse criminal online personas and trust. *Global Crime, 22*(1), 51-73. Doi 10.1080/17440572.2020.1806826

Bakken, S. A., & Demant, J. (2019). Sellers’ risk perceptions in public and private social media drug markets. *International Journal of Drug Policy, 73*, 255-263. doi:10.1016/j.drugpo.2019.03.009

Bakken, S. A., Moeller, K., & Sandberg, S. (2018). Coordination problems in cryptomarkets: Changes in cooperation, competition and valuation. *European Journal of Criminology, 15*(4), 442-460. doi:10.1177/1477370817749177

Bancroft, A., Squirrell, T., Zaunseder, A., & Rafanell, I. (2019). Producing trust among illicit actors: A techno-social approach to an online illicit market. *Sociological Research Online, 25*(3), 456-472. doi:10.1177/1360780419881158

Barratt, M. J., & Aldridge, J. (2016). Everything you always wanted to know about drug cryptomarkets\*(\* but were afraid to ask). *The International Journal of Drug Policy, 35*, 1-6. doi: 10.1016/j.drugpo.2016.07.005

Barratt, M. J., Ferris, J. A., & Winstock, A. R. (2013). Use of Silk Road, the online drug marketplace, in the United Kingdom, Australia and the United States. *Addiction, 109*(5), 774-783. doi:10.1111/add.12470

Barratt, M. J., Ferris, J. A., & Winstock, A. R. (2016). Safer scoring? Cryptomarkets, social supply and drug market violence. *International Journal of Drug Policy, 35*, 24-31. doi:10.1016/j.drugpo.2016.04.019

Berry, M. (2018). Technology and organised crime in the smart city: an ethnographic study of the illicit drug trade. *City, Territory and Architecture, 5*, 1-11. doi:10.1186/s40410-018-0091-7

Boyer, E. W., Shannon, M., & Hibberd, P. L. (2005). The Internet and psychoactive substance use among innovative drug users. *Pediatrics, 115*(2), 302-305. doi:10.1542/peds.2004-1199

Brinkmann, S. (2014). Unstructured and Semi-Structured Interviewing. In P. Leavy (Ed.), *The Oxford Handbook of Qualitative Research*. New York, NY: Oxford University Press.

Casey, E. (2019). The chequered past and risky future of digital forensics. *Australian Journal of Forensic Sciences, 51*(6), 649-664. doi:10.1080/00450618.2018.1554090

Chang, J. J. S. (2008). An analysis of advance fee fraud on the internet. *Journal of Financial Crime, 15*(1), 71-81. doi:10.1108/13590790810841716

Chatwin, C., & Potter, G. R. (2014). Blurred boundaries: The artifical distinction between “use” and “supply” in the U.K. cannabis market. *Contemporary Drug Problems, 41*(4), 536-550. doi:10.1177/0091450914567120

Childs, A., Coomber, R., & Bull, M. (2020). Do online illicit drug market exchanges afford rationality?. *Contemporary Drug Problems, 47*(4), 302-319. doi:10.1177/0091450920934186

Childs, A., Coomber, R., Bull, M., & Barratt, M. J. (2020). Evolving and diversifying selling practices on drug cryptomarkets: An exploration of off-Platform “direct dealing”. *Journal of Drug Issues, 50*(2), 173-190. doi:10.1177/0022042619897425

Collins, C. S. & Stockton, C. M. (2018). The Central Role of Theory in Qualitative Research. *International Journal of Qualitative Methods, 17*(1), 1-10. Doi 10.1177/1609406918797475

Coomber, R. (1997). Using the Internet for survey research. *Sociological Research Online, 2*(2), 1-10. doi:10.5153/sro.73

Coomber, R. (2010). Reconceptualising drug markets and drug dealers — the need for change. *Drugs and Alcohol Today, 10*(1), 10-13. doi:10.5042/daat.2010.0122

Coomber, R. (2015). A tale of two cties: Understanding differences in levels of heroin/crack market-related violence—a two city comparison. *Criminal Justice Review, 40*(1), 7-31. doi:10.1177/0734016814565817

Coomber, R., & Moyle, L. (2018). The changing shape of street-Level heroin and crack Supply in England: Commuting, holidaying and cuckooing drug dealers across ‘County Lines’. *The British Journal of Criminology, 58*(6), 1323-1342. doi:10.1093/bjc/azx068

Coomber, R., Moyle, L., Belackova, V., Decorte, T., Hakkarainen, P., Hathaway, A., . . . Werse, B. (2018). The burgeoning recognition and accommodation of the social supply of drugs in international criminal justice systems: An eleven-nation comparative overview. *International Journal of Drug Policy, 58*, 93-103. doi:10.1016/j.drugpo.2018.05.010

Coomber, R., Moyle, L., & South, N. (2016). The normalisation of drug supply: The social supply of drugs as the “other side” of the history of normalisation. *Drugs: Education, Preventation and Policy, 23*(3), 255-263. doi:10.3109/09687637.2015.1110565

Decary-Hetu, D., & Aldridge, J. (2015). Sifting through the net: Monitoring of online offenders by researchers. *European Review of Organised Crime, 2*(2), 122-141.

Decary-Hetu, D., Mousseau, V., & Vidal, S. (2018). Six years later: Analyzing online black markets involved in herbal cannabis drug dealing in the United States. *Contemporary Drug Problems, 45*(*4*), 366-381. doi:10.1177/0091450918797355

DeLanda, M. (2006). Deleuzian Social Ontology and Assemblage Theory. In M. Fungslang & B. M. Sorensen (Eds.), *Deleuze and the Social.* Edinburgh, Scotland: Edinburgh University Press.

Deleuze, G., & Guattari, F. (1988). *A Thousand Pleateaus*. London, UK: Bloomsbury Publishing

Dellarocas, C. (2003). The digitalization of word of mouth: Promise and challenges of online Feedback mechanisms. *Management Science, 49*(10), 1407-1424. doi:10.1287/mnsc.49.10.1407.17308

Demant, J., Bakken, S. A., Oksanen, A., & Gunnlaugsson, H. (2019). Drug dealing on Facebook, Snapchat and Instagram: A qualitative analysis of novel drug markets in the Nordic countries. *Drug and Alcohol Review, 38*(4), 377-385. doi:10.1111/dar.12932

Dickinson, T., & Wright, R. (2017). The funny side of drug dealing: Risk, humor, and narrative identity. *Criminology, 55*(3), 691-720. doi:10.1111/1745-9125.12148

Dieter, M., Gerlitz, C., Helmond, A., Tkacz, N., van der Vlist, F. N., & Weltevrede, E. (2019). Multi-situated app studies: Methods and propositions. *Social Media + Society, 5*(2), 1-15. doi:10.1177/2056305119846486

Dietzler, J. (2013). On ‘organized crime’ in the illicit antiquities trade: moving beyond the definitional debate. *Trends in Organized Crime, 16*, 329-342. doi:10.1007/s12117-012-9182-0

Dilkes-Frayne, E. (2016). Drugs at the campsite: Socio-spatial relations and drug use at music festivals. *International Journal of Drug Policy, 33*(33), 27-35. doi:10.1016/j.drugpo.2015.10.004

Duff, C. (2012). Accounting for context: exploring the role of objects and spaces in the consumption of alcohol and other drugs. *Social & Cultural Geography, 13*(2), 145-159. doi:10.1080/14649365.2012.655765

Eck, J. E. (1995). A general model of the geography of illicit retail marketplaces. In J. E. Eck (Ed.), *Crime and Place: Crime Prevention Studies* (Vol. 4, pp. 67-95). Modney, N.J: Willow Tree Press.

Edmunds, M., Hough, M., & Urquía, N. (1996). *Tackling Local Drug Markets* (Vol. 80). Home Office Police Research Group London.

Etzioni, A. (2019). Cyber Trust. *Journal of Business Ethics, 156*, 1-13. Doi 10.1007/s10551-017-3627-y

Fereday, J. & Muir-Cochrane, E. (2006). Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative Methods, 5*(1), 80-92. Doi 10.1177/160940690600500107

Flamand, C., & Decary-Hetu, D. (2019). The Open and Dark Web: Facilitating Cybercrime and Technology-enabled Offences. In R. Leukfeldt & T. J. Holt (Eds.). *The Human Factor of Cybercrime*. <https://doi.org/10.4324/9780429460593>

Fuller, M. A., Serva, M. A. & Benamati, J. (2007). Seeing Is Believing: The Transitory Influence of Reputation Information on E-Commerce Trust and Decision Making. *Decision Sciences, 38*(4), 675-699. Doi 10.1111/j.1540-5915.2007.00174.x

Grimani, A., Gavine, A., & Moncur, W. (2020). An evidence synthesis of strategies, enablers and barriers for keeping secrets online regarding the procurement and supply of illicit drugs. *International Journal of Drug Policy, 75*. doi:10.1016/j.drugpo.2019.102621

Hess, A. (2015). The Selfie Assemblage. *International Journal of Communication, 9*, 1629 - 1646.

Hine, C. (2008). Virtual Ethnography: Modes, Varieties, Affordances. In N. G. Fielding, R. M. Lee, & G. Blank (Eds.), *Sage Handbook of Online Research Methods*. London, UK: SAGE Publications.

Jacobs, B. A. (1999). *Dealing Crack: The Social World of Streetcorner Selling*. Boston, MA: Northeastern University Press

Koliska, M., & Roberts, J. (2015). Selfies: Witnessing and participatory journalism with a point of view. *International Journal of Communication, 9*(1), 1672 - 1685.

Kowalski, M., Hooker, C., & Barratt, M. J. (2019). Should we smoke it for you as well? An ethnographic analysis of a drug cryptomarket environment. *International Journal of Drug Policy, 73*, 245-254. doi:10.1016/j.drugpo.2019.03.011

Kozinets, R. V. (2002). The field behind the screen: Using netnography for marketing research in online communities. *Journal of Marketing Research, 39*(1), 61-72. doi:10.1509/jmkr.39.1.61.18935

Kozinets, R. V. (2009). *Netnography: Doing Ethnographic Research Online*. Thousand Oaks, CA: SAGE Publications.

Kraska, P. B., Bussard, C. R., & Brent, J. J. (2010). Trafficking in bodily perfection: examining the late‐modern steroid marketplace and its criminalization. *Justice Quarterly, 27*(2), 159-185. 10.1080/07418820902814013

Ladegaard, I. (2020). Open secrecy: How police crackdowns and creative problem-solving brought illegal markets out of the shadows. *Social Forces*. doi:10.1093/sf/soz140

Lavorgna, A. (2014). Internet-mediated drug trafficking: towards a better understanding of new criminal dynamics. *Trends in Organized Crime, 17*(250-270). doi:10.1007/s12117-014-9226-8

Light, B., Burgess, J., & Duguay, S. (2018). The walkthrough method: An approach to the study of apps. *New Media & Society, 20*(3), 881-900. doi:10.1177/1461444816675438

Lupton, D. (2013). *Risk (Revised 2nd Edition)*. London, UK: Routledge.

Lupton, D. (2016). Digital risk society. In J. O. Zinn, A. Burgess, & A. Alemanno (Eds.), *The Routledge Handbook of Risk Studies* (pp. 301-309). London, UK: Routledge.

Martin, J. (2014). Lost on the Silk Road: Online drug distribution and the ‘cryptomarket’. *Criminology & Criminal Justice, 14*(3), 351-367. doi:10.1177/1748895813505234

Martin, J., Munksgaard, R., Coomber, R., Demant, J., & Barratt, M. J. (2020). Selling drugs on darkweb cryptomarkets: Differentiated pathways, risks and rewards. *The British Journal of Criminology, 60*(3), 559-578. doi:10.1093/bjc/azz075

Masson, K., & Bancroft, A. (2018). ‘Nice people doing shady things’: Drugs and the morality of exchange in the darknet cryptomarkets. *International Journal of Drug Policy, 58*, 78-84. doi:10.1016/j.drugpo.2018.05.008

May, T., & Hough, M. (2004). Drug markets and distribution systems. *Addiction Research & Theory, 12*(6), 549-563. doi:10.1080/16066350412331323119

McKnight, D. H., & Chervany, N. L. (2001). What Trust Means in E-Commerce Customer Relationships: An Interdisciplinary Conceptual Typology. *International Journal of Electronic Commerce, 6*(2), 35-59. doi:10.1080/10864415.2001.11044235

Moeller, K. (2018). Drug Market Criminology: Combining Economic and Criminological Research on Illicit Drug Markets. *International Criminal Justice Review, 28*(3), 191-205. Doi 10.1177/1057567717746215

Moeller, K., Munksgaard, R. & Demant, J, (2017). Flow my FE the Vendor Said: Exploring Violent and Fraudulent Resource Exchanges on Cryptomarkets for Illicit Drugs. *American Behavioral Scientist, 61*(11), 1427-1450. Doi 10.1177/0002764217734269

Moeller, K. & Sandberg, S. (2015). Credit and Trust: Management of Network Ties in Illicit Drug Distribution. *Journal of Research in Crime and Delinquency, 52*(5), 691-716. Doi 10.1177/0022427815583912

Mohamed, A. R., & Fritsvold, E. (2006). Damn, it feels good to be a gangsta: The social organization of the illicit drug trade servicing a private college campus. *Deviant Behavior, 27*(1), 97-125. doi:10.1080/016396290950668

Montagne, M. (2008). Drugs on the Internet. I: Introduction and web sites on psychedelic drugs. *Substance Use & Misuse, 43*(1), 17-25. doi:10.1080/10826080701690698

Morselli, C., Decary-Hetu, D., Paquet-Clouston, M., & Aldridge, J. (2017). Conflict management in illicit drug cryptomarkets. *International Criminal Justice Review, 27*(4), 237-254. doi:10.1177/1057567717709498

Moyle, L., Childs, A., Coomber, R., & Barratt, M. J. (2019). #Drugsforsale: An exploration of the use of social media and encrypted messaging apps to supply and access drugs. *International Journal of Drug Policy, 63*, 101-110. doi:10.1016/j.drugpo.2018.08.005

Murphy, J. (2017). Like LinkedIn for drug users. *The Queensland Times.* Accessed 12/2/2021.

Natarajan, M., Clarke, R. V., & Johnson, B. D. (1995). Telephones as facilitators of drug dealing: A research agenda. *European Journal on Criminal Policy and Research, 3*, 137-153. doi:10.1007/BF02242934

Nurmi, J., Kaskela, T., Perala, J., & Oksanen, A. (2017). Seller’s reputation and capacity on the illicit drug markets: 11-month study on the Finnish version of the Silk Road. *Drug and Alcohol Dependence, 178*, 201-207. doi:10.1016/j.drugalcdep.2017.05.018

Oksanen, A., Miller, B. L., Savolainen, I … Zych, I. (2021). Social Media and Access to Drugs Online: A Nationwide Study in the United States and Spain among Adolescent and Young Adults. *The European Journal of Psychology Applied to Legal Context*, *13*(1), 29-36. Doi 10.5093/ejpalc2021a5

Paoli, L., & Greenfield, V. A. (2017). The Supply of Doping Products and the Relevance of Market-Based Perspectives. In J. Beckert & M. Dewey (Eds.), *The Architecture of Illegal Markets: Towards an Economic Sociology of Illegality in the Economy*. Oxford, England: Oxford University Press.

Ren, J., Yeoh, W., Ee, M. S., & Popovic, A. (2017). Online consumer reviews and sales: Examining the chicken‐egg relationships. *Journal of the Association for Information Science and Technology, 69*(3), 449-460. doi:10.1002/asi.23967

Salinas, M. (2018). The Unusual Suspects: An educated, legitimately employed drug dealing network. *International Criminal Justice Review, 28*(3), 226-242. doi:10.1177/1057567717745583

Sandberg, S. (2012). Cannabis culture: A stable subculture in a changing world. *Criminology & Criminal Justice, 13*(1), 63-79. doi:10.1177/1748895812445620

Small, E. (2016). *Cannabis: A Complete Guide*. Boca Raton, USA: CRC Press.

Sogaard, T. F., Kolind, T., Haller, M. B., & Hunt, G. (2019). Ring and bring drug services: Delivery dealing and the social life of a drug phone. *International Journal of Drug Policy, 69*, 8-15. doi:10.1016/j.drugpo.2019.02.003

Sykes, G. M. & Matza, D. (1957). Techniques of neutralization: A theory of delinquency. *American Sociological Review*, *22*(6), 664-670. doi 10.2307/2089195

Taylor, M. & Potter, G. R. (2013). From “Social Supply” to “Real Dealing”: Drift, Friendship and Trust in Drug-Dealing Careers. *Journal of Drug Issues, 43*(4), 392-406. Doi 10.1177/0022042612474974

Thielmann, T., van der Velden, L., Fischer, F., & Vogler, R. (2012). Dwelling in the web: Towards a googlization of space. *HIIG Discussion Paper Series*. doi:10.2139/ssrn.2151949

Thornton, S. L., Darracq, M. A., Gugelmann, H. M., & Armenian, P. (2019). Surface internet marketplace presence and availability of NPS sold as research chemicals: a snapshot study. *Toxicology Communications, 3*(1), 67-74. doi:10.1080/24734306.2019.1648067

Vaidhyanathan, S. (2010). *The Googlization of Everything (and Why We Should Worry)*. Berkeley, CA: University of California Press.

van Amsterdam, J., Nutt, D., & van den Brink, W. (2013). Generic legislation of new psychoactive drugs. *Journal of Psychopharmacology, 27*(3), 317-324. doi:10.1177/0269881112474525

Van Buskirk, J., Roxburgh, A., Bruno, R., Naicker, S., Lenton, S., Sutherland, R., . . . Burns, L. (2016). Characterising dark net marketplace purchasers in a sample of regular psychostimulant users. *International Journal of Drug Policy, 35*, 32-37. doi:10.1016/j.drugpo.2016.01.010

Van Hout, M. C., & Bingham, T. (2014). Responsible vendors, intelligent consumers: Silk Road, the online revolution in drug trading. *International Journal of Drug Policy, 25*, 183–189. doi:10.1016/j.drugpo.2013.10.009

van Loon, J. (2002). *Risk and Technological Culture: Towards a Sociology of Virulence*. London, UK: Routledge.

Walsh, C. (2011). Drugs, the Internet and change. *Journal of Psychoactive Drugs, 43*(1), 55-63. doi 10.1080/02791072.2011.566501

1. This participant resided in Queensland, Australia. In Queensland, there is a legislated program permitting eligible persons for minor drugs offences (50g of cannabis) to participate in a drug diversion assessment as an alternative to prosecution and to divert minor drug offenders from the criminal justice system. [↑](#footnote-ref-1)