

## **DISRUPTING THE ETHNOGRAPHIC IMAGINARIUM: CHALLENGES OF IMMERSION IN THE SILK ROAD CRYPTOMARKET COMMUNITY**

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### **ABSTRACT**

This paper is a contemplation of a digital ethnography with the community surrounding Silk Road, the first widely used cryptomarket for drugs on the Dark Web. To position the study within the broader field of illegal anthropology, it provides links between the existing literature on the study of cryptomarkets with relevant anthropological scholarship. A theory of piracy is interrogated for its explanatory capacity of the digital pirates of the Dark Web. The start of the study unexpectedly coincided with the FBI seizure of Silk Road in October 2013. The field site disappearance provoked a practice-based and conceptual rewiring. The paper unpacks how the 'hydra effect' introduced to conceptualise resilient innovation within cryptomarkets can also apply to the multiplicity of identities linked to research practice. This effect also raises how the knowledge production within digital ethnographic practice may be reconfigured through notions of opportunism, replication, obsolescence, regeneration, iteration, adaptation and proliferation.

Keywords: cryptomarket; digital ethnography; digital frontier; online community; contentious visibility; illicit drug use

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## 1 INTRODUCTION

Media reports sensationalise the Dark Web as a seedy digital location where drugs, guns, hitmen and child pornography circulate through eBay-style marketplaces that are only accessible to your hacker types. Here, elusive fringe behaviours proliferate in plain sight, with identities hidden through encryption technologies and secretive user cultures. In 2013, I began collaborating on a digital ethnography of the most popular Dark Web drug market, Silk Road. The social impacts of an online drug market defined by high-choice drug purchasing, visible yet anonymous user cultures and customer-to-customer (C2C) drug sales were unknown. The research was led by Dr. Monica Barratt (MB), a social scientist, through the National Drug Research Institute, Curtin University. When MB and I launched our study, Silk Road had successfully avoided ongoing law-enforcement efforts to shut it down through vigilant anonymization practices and encryption technologies. This successful resistance to state regulation lent the website a sense of stability that made it seem impenetrable. Yet, just as we launched the data collection component of the research the site was suddenly shut down by the FBI. Silk Road became a marker for the study of unstable field sites on the Dark Web.

There is an emerging field of scholarship into cryptomarkets that draws together criminologists, media scholars, sociologists, and computer scientists (cf. Barratt and Aldrige 2016). However there remains a disconnect between existing literature engaging with the cryptomarket space and relevant anthropological scholarship that may illuminate its social adoption, user cultures and the meaning making that arises through the social appropriation of technological innovations. To address this gap, I will situate this research within anthropological literature on illegal practices (Thomas and Galemba 2013; Roitman 2006) such as drug use and distribution (Polson 2013) and piracy (cf. Dent 2012). I will also draw in literature on platform affordances (Nardi 2015) specific to hacker cultures (cf. Coleman and Golub 2008; Coleman 2014), and online visibility, especially in the negative/dark sense such as trolling (Philips 2015) as a way to frame cryptomarkets and their surrounding users and communities.

In order to articulate the forms of digital ethnography that can represent this space, I will draw an initial definitional narrative around the research approach used. Throughout the paper, however, we will see how the frame through which I approached the research, my ethnographic imaginarium, is rewired by practice. Antunes and Dhoest (2019) usefully begin this process through their digital ethnography in autism communities. They start with an assertion, drawn from Horst and Miller (2012), that the basic characteristic of digital culture is that it can be converted to bits. Building into this the work of Bell (2006) they also highlight the notion of replication as a key component of both the affordances of the environment and the cultures arising. Here we can understand that digital ethnography is a study of digital cultures that are transmitted by bits, which afford replication. They then move from defining the nature of the object of study within

a digital ethnography to the practical nature of this approach. Drawing on the work of Boellstorff (2012) they highlight that digital ethnographic practice combines participant observation with elicitation techniques of online group discussion, interviews and participation in the community.

As the ethnographer on the ground, my aim for entering the Silk Road cryptomarket was initially to immerse with the microcosm of a digital culture forming and reforming in the Dark Web. In digital field sites such as this, community activity is made visible through forum posts, online chat spaces, hyperlinks to audio files, news snippets and visual stimuli, user-produced content, and changes to platform architecture. Accessing the field site requires a series of routines best described by Postill and Pink (2012, p. 123) in their characterisation of digital ethnographic practices as including catching up, sharing, exploring, interacting and archiving. This data collection approach can then be combined with Pink's et al. (2016) broader parameters in which digital ethnography encompasses the full range of research practice, including the writing of this article. They also provide us with a thematic frame that guides digital ethnographic practice, that of multiplicity, non-digital-centric-ness, openness, reflexivity, and unorthodoxy. In taking up this invitation to think broadly about digital practices, in this paper I will utilise these frames to generate an endogenous understanding of digital ethnography based upon what it means to be human in the world of the Silk Road.

## 2 THE STUDY OF PIRATES IN THE DARK WEB

Yet again, I found myself in strangely familiar territory that occurs in uncharted or under-theorised waters where charismatic radical actors develop fiefdoms that give rise to a confluence of private actors, permissive moral fields, global exchange networks, innovative technologies, and unstable field sites (cf. Cox 2013). To anchor this experience, I draw parallels between the anthropological literature on piracy, the pirates of cryptomarkets, and digital ethnography. As has been previously argued (Dawdy and Bonni 2012; Johns 2010), there are significant continuities between the pirates of the open seas and the pirates of digital spaces. One main difference between these two 'genres' of pirates may be the medium of activity and the vessel. The ocean and the boat versus the infrastructure and platform affordances of digital environments. The infrastructure in the context of this study is the persistently uncharted and dynamic nature of Dark Web alongside the Silk Road cryptomarket platform, an autonomous and self-directed technology of the 'high seas'. These parallels may speak to the continuity between actors, environments and vessels within piracy scholarship.

However, in further interrogating the platform-infrastructure metaphor of the cryptomarket-Dark Web-pirate nexus, we may also see a discontinuity between sea-faring pirates and digital pirates. The site administrator, moderators and users, who may have emerged from hacker cultures, were opportunistically acting within a cyber-libertarian dream of weak state regulation and anonymizing technologies.

For these actors, the private nature of the platform and publicness of infrastructure is conflated. As argued by Gehl and McKelvey (2019) in their discussion of darknets as media systems, of which the Dark Web is one, darknets impose a radical making public of our private platforms and exist in between the platform and the infrastructure. The notion of the cryptomarkets as a 'leaky vessel' in which the ocean is both inside and outside of the boat may not sit well with our sea-faring pirate types. The question arising here is how digital ethnographic practice can adapt to this liminal space constituted by radical shifts between private platforms and public infrastructures.

To begin to unpack this question of operating within the radical shifts of liminal space, I move to the role of the tacit knowledge in research practice. In order to articulate the reflexivity of a digital ethnography, I introduce my own story of pirates. In doing so my aim is to illustrate the emic lens or tacit knowledge that has informed my research practice within the radical social contexts of 'pirate states' of the Dark Web, cryptomarkets. This framing will also assist in situating the study in the longer arc of illegal anthropology (Thomas and Galemba 2013). Through the hands-on nature of ethnographic practice, I was exposed to the interwoven personal, social, and regulatory logics and practices of the local, regional and international trade in reptiles (Maddox 2016). This global trade seamlessly shifts gears through legal to illegal yet socially licit and illicit practices. Within this murky context, autonomous actors building networks of access and exchange through the affordances of digital platforms and personal connections.

During ethnographic immersion, at two different points in time in this study, I was in the Netherlands and Italy viewing collections of rare or unique reptiles that had originally been collected by pirates in Indonesian waters. These pirates were opportunistically daylighting as animal collectors for a local Indonesian reptile export business and accessing unique animals by sailing through hard-to-reach and sparsely monitored islands up the Indonesian archipelago. The animals were captured, and brought to the facility for a 'per head' bounty, with the more unique captives (by colour, geography, or species) gaining a higher bounty. The animals were then quarantined, vet checked and conditioned from wild to domesticated behaviours at the facility. Finally, they entered the global commodity trade and were freighted in custom-made boxes to buyers from around the world who bought and paid for them online via the business website. This whole process could support the generation of an entire body of theory, however for our purposes here, we will focus on the imbrication between digital contexts, the global commodity trade, and autonomous actors who act within and beyond state regulation and intersect with the logics of maritime law, the pirate code and economic incentive. My personal exposure to the complexities and interplay of global economic and regulatory logics, institutional and personal moral orientations/ justifications, affordances of digital social space and uneven consequences surrounding these licit to illicit animal trade practices has broadened my imagined space and context for community action. I

often refer to my practice now as peering under the carpet of social convention, where social reality has been swept.

The Silk Road cryptomarket was a domain of activity for marginalised populations who prefer high-choice drug access. Silk Road alludes to an ancient network of trade routes that connected the East and West, along which many pirates, and carpets, are likely to have passed. In contrast to the illegal yet socially licit blackmarket described by Roitman (2006) in the Chad Basin, the moral economy surrounding the site etched out a space of independent economy, collaborative creativity and political resistance. The cryptomarket encoded Johns' (2009) notion that digital pirates undermine property and enact security through technical designs that avoid centralised control and harness peer-to-peer architectures. The justification for the retail of illicit commodities rested on anarchist values of formative internet cultures (Levy 1984) that argue for user privacy and the free circulation of information (and drugs). We can connect these observations to define Silk Road as an autonomous pirate state in the Dark Web that was operating on decentralised and securitised principals of trade. The early work of Barratt (2012) describes both the peer-to-peer architecture of Silk Road as producing an eBay for drugs and the central role of encryption and cryptocurrencies for decentralised exchange and privacy practices. Because of the site founder and initial core member's orientation towards information liberty, anonymity and personal privacy linked to notions of self-sovereignty, they initiated a secure platform and marketplace based upon anonymising technologies that bootstrapped cryptocurrencies and started a whole wave of e-commerce innovation.

In a more obvious connection to pirates, the site administrator used the pseudonym, Dread Pirate Roberts (DPR), and has been described in the literature as a charismatic figurehead who promoted Silk Road as an anarcho-capitalist resistance to state power (Zajáč 2017). The continuities here with an anthropology of (digital) piracy include the practices of undermining the secured movement or transmission of property (McKelvey 2015, p. 736), a.k.a. smuggling or moving contraband, and appearing on the scene as a charismatic folk hero when contradictions and inequalities built into a political economy reach breaking point (Dawdy and Bonni 2012). The breaking point in case of the US and more globally may be considered the moral panic articulated through a long-standing 'war on drugs' (Hawdon 2001). In his discussion of the moral panic surrounding methamphetamine-related crimes in the US, Linnemann (2010) draws on the work of Cohen (2002) to connect the media and authorities' exaggerated reaction through the war-on-drugs narrative to the behaviour of a particular group or cultural identity 'the folk devil'. While in Linnemann's case, the folk devil was the media construct of the 'meth mom', in the case of the Silk Road, the digital pirate /folk devil construct articulated through news media, digital media, social media and his own forum spaces, was DPR.

Perhaps positioned as a cultural scapegoat (Linnemann 2010), I would argue that an influential reason that Silk Road became a target for US law enforcement

was the constructed ‘folk hero/devil’ persona and media presence of its site administrator, Dread Pirate Roberts (DPR). As described by Ladegaard (2018), and in an unusual decision for an anonymous actor(s) administrating an illegal drug market online, DPR responded to inquiries from journalists and did a full profile interview for Forbes Magazine (Greenberg 2013a), that he later promoted through his account on Twitter. In this interview he asserted that he was a ‘radical libertarian revolutionary’ who was providing an anarchic digital space that was (apparently) beyond the reach of the taxation and regulatory powers of the state. He also asserted that Silk Road was about standing up for ‘our rights’ as human beings and refusing to submit. As Greenberg also reports, within the site forum itself DPR posted manifestos about Silk Road’s libertarian political ideals and was regarded by many as a hero. The first participant (Participant 1) I interviewed for the digital ethnography of Silk Road (Barratt and Maddox 2016, Maddox et al. 2016) prior to the site shutdown articulates this from an insider’s perspective:

8:18:16 PM Participant 1: 😊. I believe the creator of sr created it with a moral fight in mind. I see the other sites as just competitors making money. Obviously dpr(the sr creator) is making money, but his agenda is to point out something that is wrong in this world. That being the way drug users are looked down on. ... in the deep net, there are plenty of private drug dealers. The sr created a central market, but.I think it also is representative of a group of people that think alike about the world..’

In this statement, we get a strong sense of the moral fight related to the pervasive ‘war-on-drugs’ narrative and a ground-swell of people seeking social change through the charismatic leadership of a pirate. For Weber, this notion of charismatic leadership was a crucial element of social change (Friedland 1964). Charismatic leadership in the Weberian sense was a socially-validated, saviour-leader, which speaks to our digital pirate on a moral mission. In this sense, we can also understand that whilst libertarian, the Silk Road community was not actually anti-authoritarian in terms of seeking its own leader. This suggests that Silk Road was led by a charismatic digital pirate who practiced nodal governance (cf. Martin 2014b and discussed in the next section of this paper) and used the media to promote his newly emerging cryptomarket whilst simultaneously responding to the moral panic articulated through the ‘war on drugs’.

In terms of ‘being with’ a culture of digital piracy, the Silk Road cryptomarket was a space rich with metaphorical connection to folk heroes and charismatic leadership, a blackmarket economy of socially licit contraband and a narrative of anarcho-capitalist resistance to state power. However, as McKelvey (2011) has problematised, we are all digital pirates. Within the peer-to-peer/C2C platform affordances and social practices of the Silk Road marketplace and the collaborative nature of maintenance within the forums and software, this concept of collective piracy is deeply embedded. As an ethnographer in this space, are we a pirate too?

### 3 THE STUDY OF CRYPTOMARKETS IN THE DARK WEB

What are cryptomarkets and how do they actually work? Cryptomarkets are e-commerce websites that operate in the Dark Web, commonly referred to as darknet markets (DNMs). The Dark Web (a darknet) is an overlay network. It is a securitised Internet network operating over existing networks through encrypted traffic on those networks (Hunsinger 2015, p. 58, discussed in Gehl and McKelvey 2019). More simply put, it is an encrypted part of the internet that is not accessible to clearnet search engines such as Google (Martin 2014a). The encrypted space of the Dark Web is created through the Tor network, which is a free and open-source software that anonymises users, particularly through techniques that circumvent traffic analysis (Tor Project 2019). These infrastructure characteristics, alongside the use of cryptocurrencies such as Bitcoin, afford the trade of illicit goods and assist cryptomarkets to avoid external regulation. Essentially, this is achieved through their ability to hide internet user activity and incorporate the use of a digital, non-identity-carrying payment system (Barratt and Aldridge 2016, p. 1). Vendor/seller trust was moderated by reputation systems including ratings and user feedback and a community forum (Van Hout and Bingham 2013a). Trust was also built into the transaction systems of the cryptomarket, whose technologies removed the need for a third party to arbitrate disputes and deliver an escrow service (Barratt and Aldridge 2016, p. 4). On the Silk Road platform, ‘anybody’ (with a computer, the capacity to use Tor and the correct IP address for the marketplace) could set up an account to buy or sell.

Silk Road cast itself as an autonomous fiefdom that operated beyond the reach of the law. Barratt and Aldridge (2016) describe their first exposure to the marketplace:

‘When we first discovered Silk Road in 2011, on opposite sides of the globe, we could not believe it was real: people were buying illegal drugs anonymously through a global marketplace that resembled eBay or Amazon.’ (Barratt and Aldridge 2016, p. 1)

However, this retail of illicit drugs did not mean that Silk Road was a lawless zone. Silk Road was characterised by internal community regulation (Honeycutt 2005) rather than external regulation such as by the state. I saw it as bounded by encryption, with a clear value system and norms of behaviour being socially regulated amongst the users and through the platform affordances (Nardi 2015). This was particularly evident in the ‘pruning’ and blocking of unruly members by forum moderators and epic flame wars between community members. Another example of this complex internal regulatory process can be seen in the types of content and products that were permitted in the space. In the history of Silk Road, the sale of guns, for example, was vetoed by community members and there was a clear ‘no child porn’ policy. In early work characterising cryptomarkets, Martin (2014b) refers to this phenomenon of online communities characterised by

collective identities, inter-site migration, digital refugees and self-regulating cyber networks as nodal governance. In responding to Martin's notion of nodal governance, Van Hout (2015, p. 263) synthesises the community governance activity as characterised by community and political affiliations, indigenous harm reduction, communal folk pharmacology and with vendor-buyer consumer relations grounded in trust and mutual responsibilities centring on service quality, feedback, contracts and refund policies.

This nodal form of community governance resonated with American anarchist author Hakim Bey's prefigurative politics articulated through 'Temporary autonomous zones' (TAZ) (cf. Armitage 1999); an idea flagged by cryptomarkets researcher Rasmus Munksgaard on social media during our respective fieldwork practice (see Munksgaard and Demant 2016). As Truscillo (2003) brings to the fore in his discussion of the different architectural metaphors of postmodern anarchistic spaces, the TAZ is a liberated area (of land, of time, of imagination) that can be thought of as a guerrilla operation which dissolves itself to re-form elsewhere/elsewhen before the state has built the capacity to 'crush it'. The similarity of this idea to how cryptomarkets operate, and can be conceptualised, demonstrates the common libertarian roots between Bey's description of a TAZ and the material realisation and properties of cryptomarkets. These autonomous pirate states were leveraging the 'free hand' of the market to trade in goods and services that are usually heavily controlled, regulated and taxed by nation-states.

The sense of successful resistance to state regulation over time led to a community experience of continuity and perceived impenetrability. The evocation of an impenetrable online community making a moral fight for existence is not unique to Silk Road however. This homesteading mentality was conceptualised by Howard Rheingold as a characteristic of virtual community during the early days of internet scholarship (Rheingold 2000). In the context of a TAZ-style platform structure, I argue that the notion of a homesteading mentality be reframed as 'nodal attachment' in which identity construction at an individual and collective level is both stable and ephemeral. I would argue that the combination of a charismatic leader and the sense of continuity against the odds evoked nodal attachment within Silk Road. This dynamic of attachment to a site operating through nodal governance, often focused by a charismatic leader, occurred in the face of probable internal (hacking) and external (law-enforcement) disruption to site location and market function. Nodal attachment in this context of contention, disruption and obsolescence drove the community to collaborate, construct and iteratively transform the function and process of the platform. I have elsewhere referred to the collective output of community resistance that results from nodal attachment as constructive activism (Maddox et al. 2016). If we are to further reconfigure our understanding of ethnographic practice in light of the attributes of the Silk Road cryptomarket discussed in this section, then we are to incorporate contention, disruption, obsolescence, collaboration, construction and iteration into our knowledge production practice. Perhaps it is in the interconnectivity of disciplinary



fiefdoms, an interdisciplinary stance suggested by Pink et al. (2016), that we can perform these radical acts of being with as digital ethnographers.

#### 4 A DIGITAL BERMUDA TRIANGLE

The Dark Web can be thought of as a digital Bermuda Triangle. It is dynamic space with websites regularly changing their IP address, the unique identifier of each device connected to the internet. The notion of a digital Bermuda Triangle also articulates the cartographic vacuum within the Dark Web where cryptomarkets appear through emerging logics of aggregation (cf. Juris 2012), just as they disappear within an instant through submerging logics of disaggregation. In linking back to the discussion of digital pirates and the platform as the vessel, we can understand that the affordances of the technologies that make cryptomarkets is generative, iterative and degenerative. The transitory nature of this environment was also a construct of its dynamic digital context, previously conceptualised through the notion of a TAZ. A cryptomarket can fall out of favour and its seemingly established community engagement may disaggregate. Security flaws may be revealed by self-righteous hackers that create a mass exodus of users. In such instances, users close their accounts, change their avatars and passwords and start up again at another marketplace. In addition to these technologically induced social currents, a marketplace may be shut down due to scams, internal disputes, and law-enforcement activity. While we knew this theoretically at the outset of the study, Silk Road looked set to stay.

The growth in its use had affected the culture, transitioning it from a small select inner circle - where most people held similar values - to a public access site with a diverse user base there to buy drugs. This trend fitting with study objectives, on 1 October 2013 MB launched the study through a Twitter announcement and I conducted our first interview shortly thereafter. It was exciting to finally begin the project that we had spent painstaking hours researching and working with existing and emerging technologies in preparation for. The next day, however, I awoke to a string of urgent messages relating that the site was seized and shut down. I attempted to log into the site, only to be confronted with the law-enforcement notice that the site had been seized. Our field site was gone. For a period of time, the forum associated with the Silk Road marketplace remained active and the community shared their grief at the loss of this space, their space. During an interview, Participant 18 encapsulated this experience:

12:23:31 pm [Participant 18]: Also, while I was sort of taking the piss out of the whole DPR cult thing, when the site was shut down, there was a serious sense of mourning in the 'community' and I was stunned to find I felt it too, a little bit . It was like the death of Martin Luther King or JFK or Kurt Cobain, maybe. People were shattered and vented rivers of grief and fury in the forums and I felt a serious sense of loss too

I too felt a similar sense of loss and confusion to that which poured out over the forums. I had come to take these digital structures for granted and had invested my online identity (directly linked to my identity as a researcher) and field time in learning its functionality, culture and the norms of interaction. As discussed in our methods paper describing the study, we subsequently followed the community to other online spaces where those who had used Silk Road gathered (Barratt and Maddox 2016). I refer to this as a movement from nodal attachment (to a single site) to distributed attachment, which I define as a multi-sited identification with and enactment of the overlapping values, history and characters of, and social connections made through, Silk Road. This mobility of people and practices across the environment taught me a key lesson as a digital ethnographer. This lesson was not to get attached to any one ‘site’ as the location of community and to be prepared for some form of site instability during the course of field work.

From the conceptual movement between nodal and distributed attachment, I would argue that digital ethnographic practice can be transformed through the study of online behaviours that border between innovation and illegal, yet socially licit, practices. Drawing from the social shaping of technology (SST) studies I would rearticulate that in the case of cryptomarkets, innovation is indeed a garden of forking paths (Borges cited in Williams and Edge, 1996). Rather than forking paths, the community metaphor of resilient innovation in the face of cryptomarkets disappearance was that of a hydra. The hydra, describes Martin (2014b, p. 64), is a dreaded mythical beast whose magical powers of regeneration allowed it to grow two heads wherever one had been cut off. The ‘hydra effect’ was coined by media commentators (Greenberg 2013b; Ormsby 2013) who observed the digital replication and proliferation of new cryptomarkets to fill the vacuum after the closure of Silk Road. Martin (2014b, p. 65) observes that the ‘hydra effect’ occurs upon the closure of a cryptomarket, which provides ‘an opportunity for new sites to establish themselves and capture an unclaimed proportion of the illicit market share and profit’. From a digital Bermuda Triangle and resilient innovation to digital ethnography, the arc of continuity is in questions of opportunism, replication, regeneration, adaptation and proliferation in response to a knowledge vacuum. To support an agenda towards articulating the hydra effect within digital ethnographic practice, the challenge raised by the cryptomarkets space is in the capacity for practice-oriented innovation to harness these affordances. Essentially, how can we articulate a hydra effect within digital ethnographic practice? The following section considers multiplicity and resilience in light of a culture of contentious visibility.

## 5 VISIBILITY, VULNERABILITY, AND CONTENTION

In this section I will reflect on the moral and ethical conundrums that arose during my attempts to raise the visibility of our research project and conduct interviews amongst the community. This reflection introduces a central issue of the study for both myself and participants: on Silk Road, personal visibility was negotiated to

avoid vulnerability in a highly contentious (and performatively so) social context. I identify this central theme as contentious visibility, which I will unpack through a discussion of the research (and researcher) visibility as well as considering how my sense of vulnerability and exposure in the space was met in equal and opposite dimensions by my participants. As has been previously discussed, the Silk Road cryptomarket was built on a backbone of libertarian principles that were articulated through a socially pervasive mantra of self-sovereignty. In line with the findings of Gehl (2016) in his study of a Dark Web social network, I observed that the autonomous self, the protagonist of the Silk Road, was cloaked in anonymity provided by encryption and enhanced by social conventions where real-life identities are separated from online personas during interactions (cf. van der Nagel and Frith 2015). Such agents operated effectively within the ephemeral conditions of nodal governance and a culture of anonymous engagement that was mediated by technologies of trust.

In order to establish researcher credibility in the field, I used the alias of my research Twitter handle consistently across all platforms of interaction to identify myself in forums and on chat channels. In discussion with the moderators of the space, the role ‘researcher’ was linked to my online persona. Within my forum profile page, I also provided links to the research homepage, a blurb about the research and the different ways participants could contact me online. These online contact points included by forum direct message (DM), through Internet Relay Chat (IRC) channels, my institutional email, and through my research-oriented presence on Twitter and Reddit. In this sense, I was highly visible and identifiable across online spaces and through my professional identity. My visual appearance was revealed through a shared YouTube video of me conducting a member check on research findings. This consistency of connection between my online persona with my real-world identity was unique in the space.

Through the research practice, I was exposed to and needed to take account of the liberal values embedded in internet cultures such as freedom of information, personal sovereignty, and distributed collaboration and information dissemination (cf. Coleman 2014). Working with the community was about engaging with anonymous others who may be a drug dealer, a drug user, an undercover cop, a programmer with a side interest in hacking, a ‘tourist’ just visiting for the novelty, a devout libertarian philosopher, or a forum moderator (or a combination of these identities at the same time). The intertwining and interstitial space through which these masked characters paraded was one of technologically induced smoke-and-mirrors. Perhaps it is here that the ‘hydra effect’ can also be understood at the micro level as an identity-construction toolkit and that it is through multiplicity of identity that resilient innovation within the self could be achieved. A lesson I was yet to work out for myself.

I had followed the Silk Road community within the Dark Web to another cryptomarket-related forum, The Hub. The Hub was a discussion forum set up within the Tor network by digital refugees fleeing Silk Road. It positioned itself as

an omni-forum for the discussion of the cryptomarkets emerging in response to the void and opportunity left by the closure of Silk Road. Here I gained approval from the forum moderators to discuss the research and to recruit possible participants. To promote the research, I used strategies to increase the visibility of the research thread through the practice of ‘bumping’, which harnesses forum technology to raise the thread to the top of a section each time it gets a new post. This approach was recommended to me by an early cryptomarket ethnographer, Tim Bingham (Van Hout and Bingham 2013a, b, 2014), as one way to garner attention from the community. This attention took the form of positive engagement (support for the research agenda) alongside scepticism and blunt negative assessments of the capacity of the researchers to contribute positively to the community. Other more archivally minded community members made dooming associations with previous research projects that had launched in the environment and not been able to meet the standards of technical awareness required to operate convincingly. The thread pattered along with polarised responses from forum members until a known troll took deep offence at my presence as a researcher on the forum and issued a series of threats, culminating in a death threat. Even though the threat was merely digital, I immediately let the thread drop. I took a series of preventative actions to deal with these personal attacks, yet these initial negative experiences continued to shape the ways in which I raised the visibility of the work in the environment. This dynamic of known researcher interacting with anonymous personas as research subjects and actors created a conflicting power dynamic in a contentious social space, and meant that I experienced a strong sense of personal vulnerability.

Given the extensive literature on trolling in online environments, it is definitely something that the visible researcher must expect when actively engaging in online spaces. Philips (2015) argues that trolling is a spectrum of behaviours that constitute an expression of one’s online identity, and a celebration of anonymity. In a return to the platform affordances concept of Nardi (2015), the technical affordances, structures, and policies of online platforms may either impede or facilitate trolling behaviours. The Silk Road forum space was conducive to online trolling through its ethos of online anonymity, socio-historical link to hacker cultures and the platform affordances of the environment that enshrined anonymity as a technical possibility. Through the non-identifying sign up process, one user was able to have multiple disconnected accounts and thus multiple discreet identities. Here we can see parallels with the hydra concept evoked through the discussion of piracy and the cryptomarkets environment of replication at the outset of this paper. The capacity for multiple active identities supports a spectrum of behaviours where the individual can display different personas based upon diverse agendas (Turkle 1999). The ability to switch or fragment between these identities may diffuse personal accountability and shield the individual from the consequences of community regulation. In terms of the platform affordances for this, it is only possible for a forum moderator to ban the account that has been actively identified as a troll and as breaking the communicative conventions and community norms of

the environment. All other accounts that may be occupied by this user remain active and new ones can easily be generated to avoid the invisibility enforced by forum banning.

As Philips (2015) argues online trolls troll in order to receive a reaction, commonly referred to from the recipient's point of view as 'feeding the trolls', with receipt of the spotlight of attention and engagement fuelling truly vicious trolling behaviour. In addition to the culture and platform affordances, I contend that the shutdown of the marketplace by law enforcement had created an unstable and paranoid social environment where trolls sought to trigger conflicts among the community of users (cf. Hardaker 2010) and 'everyday sadism' (Buckels, Trapnell and Paulhus 2014) could gain a solid foothold. The negative aspects to this transparent use of a research statement (that is linked to the ethical conduct of research) to engage the community through their forum space is similar to that found by Hudson and Bruckman (2004) and strongly raised the question for me as to whether covert engagement or the use of a dual identity would have been more appropriate. The approach taken by Gehl (2018) melds both of these approaches in which he followed the convention of the environment and used a pseudonym, but offered to reveal his real-world identity to participants should they wish to know. The effect of this approach is that it would be more likely to act as a shield for researchers active in contentious online environments, particularly in its act of conformation with rather than confrontation of community expectations and norms.

The Silk Road forum space was characterised by discursive parrying, posturing, and a more forthright and attacking narrative style – all of which, alongside drug-use, was fuel for the extended 'flame wars' (Franco et al. 1995). As an illustration of the risks they had experienced while purchasing drugs on Silk Road, Participant 18 shared their experience of receiving blackmail from a vendor. They also shared their response to the blackmailer, which was feisty and forthright in expression. The following extended quote provides an example of how such attacks were dealt with in the environment.

1:51:50 pm [Participant 18]: I replied instantly and told him to go fuck himself and that I was already doxxing him (for the purposes of this elaborate bluff I said I was a forensic computer expert and an authority on stylometrics) and that he had stuffed up in a big way and that when he hears his front door being smashed in he had better hope it was the police and not me - with several heavily armed associates and a serious case of the shits.

[...]

1:53:21 pm [Participant 18]: Some things are the same on dark markets as they are in the real world. Bluff, bluster and bullshit can be very effective when under threat

The forthright and combative communication style that characterised this response was not uncommon to see when delving into the deep archives of the forums. While this style would have been difficult for me to emulate, I consider now that it would have been appropriate to develop a communication style that did not at least appear ‘soft’ or empathetic in this space. This ethos was not unique to Silk Road and has been previously described by Gabriela Coleman, in her work on internet cultures, as enacted ‘for the lulz’. This dichotomy in communication styles, however, explicitly revealed the climate of contention in this community and brought into play an ethos where community members gained traction (and satisfaction) through their capacity to attack another, while masking themselves through posturing and belligerence. These performative communication styles may be referred to as a form of contentious visibility. I argue that contentious visibility is engendered by the playful and purposive splitting of online identities and movement of users between multiple sites, associated activities that make forum banning and blocking practices ineffective. These disruptive, fragmented and evasive practices are also characteristic of the distributed attachment that drives individual and community identity creation in the cryptomarket space.

## 6 CONCLUSION

While actively engaging with a community through ethnographic immersion is an incredibly rewarding experience, it is not without its risks, especially when the space of engagement is undergoing a period of upheaval, transition, and contention. In turning on a beacon for participatory engagement during data collection, the researcher can consider themselves as bait, a goat on a rope, with the community watching from the stalls, largely for entertainment value. This risk is largely avoided through the passive monitoring (Décary-Héту and Aldridge 2015) and automated content analysis approaches (Munksgaard and Demant 2016) often taken by researchers in the study of cryptomarkets. I would argue, however, that the intense nature of immersion provides socially meaningful insight that results in a conceptually rich vocabulary to direct future practice. This is the rewiring of the ethnographic imaginarium.

Prior to the seizure of the marketplace, the community had a sense of impenetrability which made them relatively open to newbies and observers. However, after this first sign that the dream was over, the environment fostered paranoia and became ripe for trolls to create divisions between them and us and to target outsiders, which I was initially regarded as. I have argued that the multiplicity of identity, both a community norm/expectation and platform affordance in environment, may be considered as a resilient response to a culture of contentious visibility. I have flagged some approaches that the researcher may take, some of which may be unorthodox but correspond to the endogenous concept of the ‘hydra effect’. In terms of resilient innovation within digital ethnographic practice that this effect speaks to, the arc of continuity for practice is in questions of opportunism,

replication, regeneration, adaptation and proliferation in response to a knowledge vacuum.

Throughout this paper I have argued that if we are to further reconfigure our understanding of digital ethnography, then we must consider practices of contention, disruption, obsolescence, collaboration, construction and iteration into our knowledge production practice. Returning to Pink's et al. (2016) thematic proposition towards digital ethnography, this essay articulates for the researcher how openness is the tension raised by in operating in such spaces. I would argue reflexive knowledge must be accompanied by transparent vulnerability, a common element of being human. Perhaps, on the high seas of the Dark Web, it is only through this practice that there can be a context collapse between the digital ethnographer and the digital pirate.

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