Cambridge Cybercrime Centre: Fourth Annual Cybercrime Conference

The not so Dark Side of the Darknet

And Ball and Sand and a set of the set of th

Dr. Victoria Wang (BSc; PhD) Senior Lecturer on Security and Cybercrime

Institute for Criminal Justice Studies (ICJS) University of Portsmouth (UoP) 11-07-2019

Structure

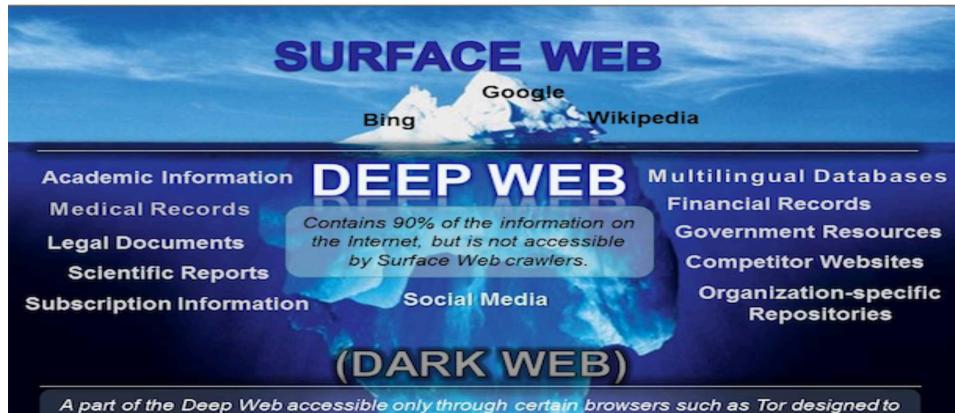
1. Background

2. Our research project

1. Background



What is the Darknet?



A part of the Deep Web accessible only through certain browsers such as Tor designed to ensure anonymity. <u>Deep Web Technologies has zero involvement with the Dark Web.</u>

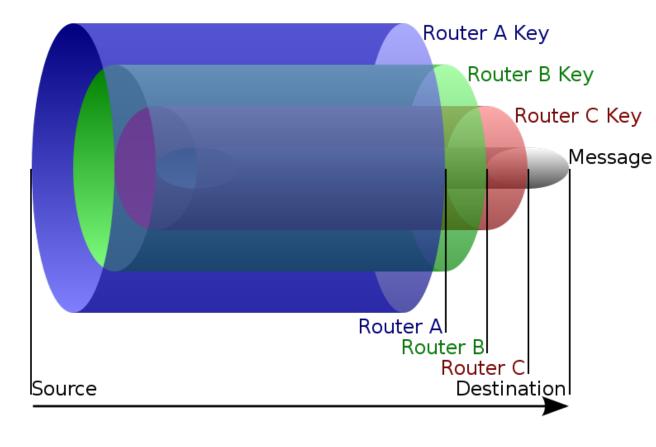
Illegal Information TOR-Encrypted sites

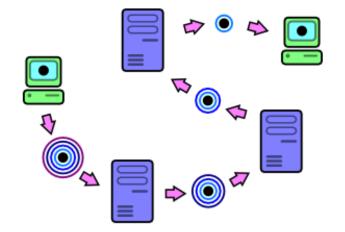
Political Protests

Drug Trafficking sites Private Communications **Key concepts simplified**

Internet Deep Web Dark Web	Indexed	Non-indexed
Restricted		Dark Web
Accessible	Internet	Deep Web

Anonymity – onion network



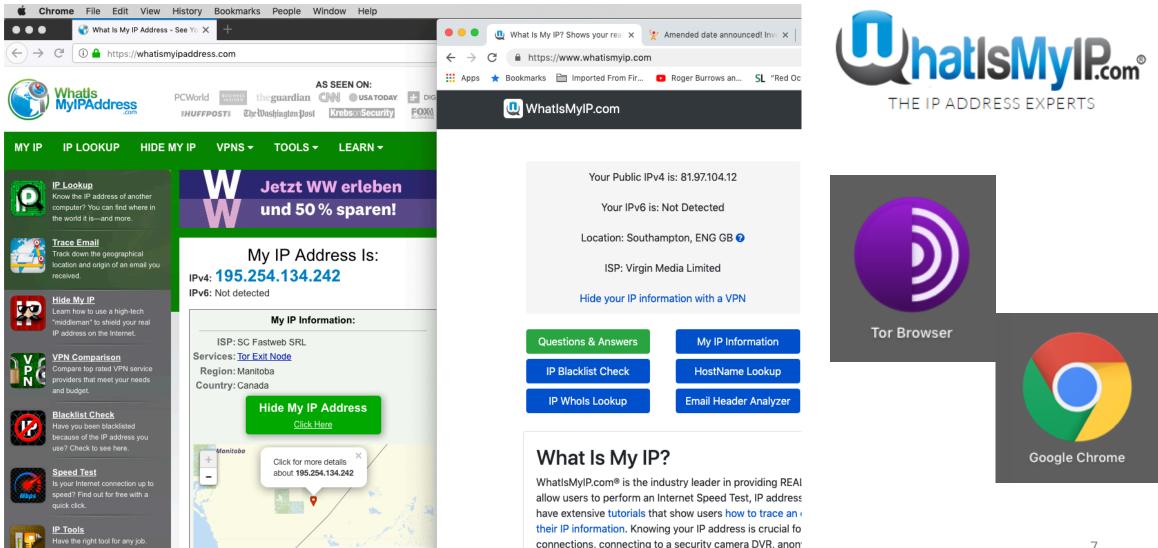


What protections does Tor provide?

- To prevent websites and other services from learning your location;
- To prevent people from watching your traffic locally; and
- To route your connection through three volunteered serves in order to keep the traffic secure.

An ideal Darknet situation – hide your IP

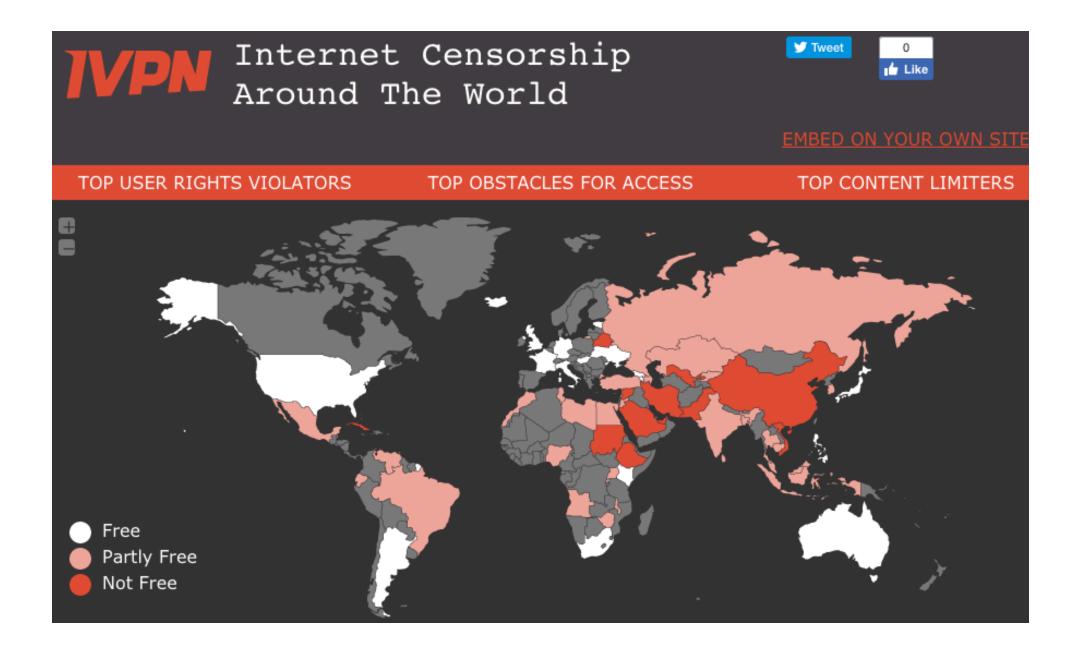
l aaflat | @ OpenStr



Main criminal activities on the Dark Net

- Drug Dealers
- Arms Dealers
- Paedophiles and Child pornographers
- Counterfeiters
- Smugglers
- Hackers
- Scammers
- Terrorists
- Hitmen

- Sex Racketeers
- Fixers
- Thieves
- Hate Groups
- Insider Trading
- Illegal Gambling
- Organised Crime Syndicates



2. Our research project

Secur J https://doi.org/10.1057/s41284-018-0150-5



ORIGINAL ARTICLE

The not so dark side of the darknet: a qualitative study

Mihnea Mirea¹ · Victoria Wang¹ · Jeyong Jung^{1,2}

Abstract In recent years, the Darknet has become one of the most discussed topics in cyber security circles. Current academic studies and media reports tend to highlight how the anonymous nature of the Darknet is used to facilitate criminal activities. This paper reports on a recent research in four Darknet forums that reveals a different aspect of the Darknet. Drawing on our qualitative findings, we suggest that many users of the Darknet might not perceive it as intrinsically criminogenic, despite their acknowledgement of various kinds of criminal activity in this network. Further, our research participants emphasised on the achievement of constructive socio-political values through the use of the Darknet. This achievement is enabled by various characteristics that are rooted in the Darknet's technological structure, such as anonymity, privacy, and the use of cryptocurrencies. These characteristics provide a wide range of opportunities for good as well as for evil.

Keywords Darknet · Criminogenic · Anonymity · Privacy · Cryptocurrencies

The research project

- Previous criminological research appears to have heightened the perception that the Darknet drives criminality.
- Our aim was to examine the sociological dimensions of the Darknet. It aims to identify whether the Darknet is inherently criminogenic, and thus constitutes a fundamental threat to individuals, organisations, and societies. Two overarching research questions:
- 1) Is the Darknet a natural environment within which criminal activities can flourish?
- 2) If so, could the Darknet be described, in fact, as criminogenic?

Research method – a qualitative approach

- Small scale 10 interview style questions were transposed into an online survey using the Bristol Online Survey (BOS).
- The link to the survey was imbedded in an invitation letter that was posted in 4 forums that reside on the Darknet for general everyday discussions:
 - 1) The Hub (thehub7gqe43miyc.onion)
 - 2) Intel Exchange (rrcc5uuudhh4oz3c.onion)
 - 3) Darknet Central (2u7kil26qazmrmb6.onion)
 - 4) DarknetM Avengers (avengerfxkkmt2a6.onion).
- 17 completed surveys were analyzed.

Five main findings

- 1. The Darknet is not underground
- 2. The Darknet's anonymity provided freedom of expression
- 3. The Darknet is not a society on its own
- 4. The Silk Road might have been a tool used for propaganda
- 5. The Darknet does not intrinsically breed criminal activities

1. The Darknet is not underground

Most of the participants do not consider the Darknet as an underground phenomenon. They found out about the Darknet from conventional open sources, including schools, news media, and other Surface Web discussion forums.

- P10: "When I was a teenager, our information teacher told us about a strange thing called "Darknet" and at the same time, he talked about some actual whistle blowers who used the Darknet for their activities, I found it interesting, so I decided to look it up on google."
- P11: "I learned about the darknet through reading an article about it. It was a pretty neutral article explaining indexing, the tor browser etc. I use it a few times a week."

2. The Darknet's anonymity provided freedom of expression

Most of our participants were aware of the deviant label attached to Darknet users. Over two-thirds of the participants have explicitly stated that 'anonymity' and 'freedom' are the two main reasons behind their initial and continued use of the Darknet.

- P4: "The most appealing feature is the ability to speak freely, without repercussions; one can express unpopular opinions, without attracting undue attention to oneself. In some quarters, e.g., Saudi Arabia, even a hint as to a lack of faith can lead to charges of apostasy, with deadly consequences."
- P12: "I do think that anonymity attracts criminals and that the Darknet enforces that. However, there are many more honest people on the Darknet without criminal intentions. Anonymity is a universal human right."

Some of the participants mentioned that they initially used the Darknet for drugrelated activities, but subsequently their activities have shifted to those of a more conventional, even positive nature.

- P6: "Originally as a mechanism to buy high quality, low cost weed and other drugs but over time the priority has changed, now more engaged in harm reduction and OPSEC awareness."
- P3: "Originally to buy drugs but now to participate in forums/the community."

3. The Darknet is not a society on its own

The consensus from our participants is that the Darknet is not a society on its own. Even if it becomes one, it would not threaten fundamental values of our off-line societies, partly because it lacks a solid infrastructure. However, governments might not feel the same way.

Most of our participants indicated that communities on the Darknet are detached from various real-world societies. This detachment is because the Darknet communities are mainly sustained by technological structures not human bonds.

 P1: "I think the Darknet community has actually disbanded to a greater extent. Back in the days of the Silk Road forums there was a huge and lively community who congregated to discuss a large range of issues. I also think this is one of the reasons the US went after it so hard. Communities like the Hub are but a mere shadow of the former community. But as you have seen there are those of us who come here for shared values but there are too few of us to pose any real threat to the standard societal model."

For the participant below, the Darknet could decentralise authoritarian powers and provide venues for democratic participation.

• P16: "Somebody has to make sure the government does not abuse its power but in reality we have some institutions that are controlling everybody but they are not being controlled by any other instance itself. Someone has to control the people who have control over other people."

4. The Silk Road might have been a tool used for propaganda

More than half of our participants argued that the mainstream media was prejudiced against the virtual markets on the Darknet, deliberately altering the information to suit the real-world agenda of 'war on drugs'.

• P1: "The mainstream news media is nothing but a propaganda machine. It always misrepresents the facts in either sensationalist or deliberately misrepresentative ways to suit an agenda. I am therefore totally unsurprised that the media misrepresented what Silk Road was about or stood for..."

Three of our participants asserted that Silk Road in fact offered safer drugs and less street-related violence, by promoting quality through the feedback system and by moving the exchange of drugs online.

 P1: "Silk Road for the first time introduced accountability into the drug trade for the end user. No longer could drug dealers get away with simply selling dangerous and adulterated products, if they tried they were outed quickly and driven from the market. Purchasing online also reduces the risk of harm by eliminating the need to associate with people who have traditionally been associated with using violence. The combination of these factors of course promotes 'safer' purchasing of drugs and only someone invested in making their money or deriving power and influence from enforcing the war on drugs could disagree with those facts."

5. The Darknet does not intrinsically breed criminal activities

The Darknet has indeed offered new opportunities for criminal activities to flourish. However, it is not fundamentally different from any other means of technologies and tools. There has not been, however, a concrete study evidencing that the Darknet increases levels of criminality and, without the Darknet, governments and companies are less likely to be attacked.

The Darknet is considered by most of our research participants as just another tool that can be used by criminals.

• P6: "By demonizing the Darknet they are forgetting that there are many other attack vectors, some more viable than TOR itself, by which a determined attacker can compromise their security, information and operations. Companies should assume threats to their information and computing infrastructure can come from ANY attack vector and plan their strategy accordingly."

 P1: "It may have given new opportunities to some, but you could use that argument for any innovation. Criminals often are the earliest adopters of new technology, you don't hear people blaming Google for child porn, do you? In any society there will be those who exploit certain technology, should we therefore ban all future technological advancement in case it gets misused? Of course not, that would be ridiculous just like blaming the small number of people of use the Darknet for nefarious reasons as a reason to taint everyone who uses it." Less than a third of participants recognised that the Darknet can be a dangerous place, but they rejected the claim that it is inherently criminogenic – the Darknet is a neutral place and it is the users that determine the criminality of the network. They indicated that the Darknet was labelled as criminal in order to justify law enforce activities and government control.

- P8: "The Darknet is not inherently criminal, just as the clear net is not inherently criminal either. I'm sure that both have illegal content such as child porn or what have you. Albeit, there are also legal uses for both. The government creating an image that the Darknet is criminal is simply them trying to take away the human rights to privacy without legally doing so."
- P12: "This actually made me laugh. What a nonsense! You really have to put in a lot of effort to hurt yourself or others through the Darknet. No such thing can happen accidently. The Darknet is not a threat to society, not more than the clear net anyway! I indeed think law enforcement exaggerated it all, just because they don't like admitting that they will never have everything under control."

Conclusion

- Darknet presents a serious security risk due to its unique characteristics, such as anonymity, virtual markets, and the use of cryptocurrencies, a range of criminal activities could be performed in this network with ease.
- The Darknet ought to be investigated more seriously. However, its inherent purpose is not to harm individuals, organisations, and societies. Governments might not feel the same way.
- Instead of labelling an environment as criminogenic and its users as 'deviant others', a more holistic sociological understanding of the Darknet's social characteristics and technological infrastructures is now needed.
- The Darknet is not, ultimately, a society where crime is the norm. In fact, it is a technological platform that is used by different individuals for a variety of purposes.