

VPNs and Pedophilia: An Issue or a Solution?

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Abstract: In this paper, we worry about investigating the use of Virtual Private Networks for the commission of crimes involving pedophilia. Recent political decisions in China seem to point at the world leaders connecting it to organized crime. The overall impression of professionals from Information Technology is that Virtual Private Networks are excellent tools for any sort of establishment or individual that depend on non-physical communications. The Australian government seems to have no concerns whatsoever with pedophilia and the use of VPNs. We here want to determine the effects on non-criminalization of the use of VPNs in what comes to pedophilia. On the way to that, we provide a good introduction to the topic and a good collection of intelligence tokens.

Keywords: VPN, safety, cyber, crime, Internet

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I. INTRODUCTION

From physical social networks¹ to Peer-to-Peer and Virtual Private Networks, nothing is more in fashion than what in the past would be called gang formation and be associated through the law with crime. We focus on virtual networks. They hold strong connection with IP numbers:

Every single time a device; smartphone, computer, tablet and even a smart refrigerator connects to the internet, an IP address is assigned to it².

The ISP (Internet Service Provider)² does that.

Well, an IP address is a unique number that is assigned to a device connected to the Internet or network. This number can be used to identify a particular device to the point of determining its physical location.

You can think of it like a fingerprint: No two devices have the same IP Address.

When you access the internet, your IP address is broadcast for all to see it.

Every website you visit, and every network you use will know your IP address and they can use it for a number of different purposes, some completely fine, and others you should be very worried about².

IP (Internet Protocol³) addresses are the equivalent to the Brazilian ID card number⁴ or the Australian Driver's License number⁵ on the Internet. In real life, if someone knows your licence or ID number, that is not enough for them to impersonate you. Notwithstanding, in the Virtual World, your IP number is enough for those purposes. Furthermore, people can target you (cybercrime⁶), and that can make your online activity materially, not only virtually, impossible: Some people cannot use their keyboards⁷ or computers⁸ after an attack. Because of that, exhibiting a virtual public identity number that points at another continent when we are online may mean self-protection; it does not have to mean crime.

IP Spoofing⁹

IP spoofing involves changing the packet headers of a message to indicate that it came from an IP address other than the true source. In essence, the sending computer impersonates another machine, fooling the recipient into accepting its messages. The spoofed address is normally a trusted port, which allows a hacker to get a message through a firewall or router that would otherwise be filtered out. When configured properly, modern firewalls protect against IP spoofing.

¹ Cruz-Cunha, p. 394

Spoofing is used whenever it is beneficial for one machine to impersonate another. It is often used in combination with one of the other types of attacks. For example, a spoofed address is used to hide the true IP address of the attacker in Ping of Death, Teardrop, and other attacks. Remote Procedure Call (RPC) services, the X Window system, the UNIX r services (rlogin, rsh, and so on) and any service that uses IP address authentication are all susceptible to IP spoofing.

VPNs help us remain anonymous², and access sites that we cannot normally access², maybe sites that are relevant for our work (academics, research and/or others). They also provide a tunnel of protection against investigative authorities², so that some defend that they make crime and non-deterrence more possible¹⁰.

online pedophile will be used here to refer to this heterogeneous group of individuals whose interactions are focused essentially on child pornography in cyberspace and whose behaviour is punishable under certain sections of ..., which prohibits the making, distribution and accessing of child pornography, and section ..., which since 2002 prohibits the luring of children¹¹.

...

The three A's of the virtual world, *accessibility*, *affordability* and *anonymity*, facilitate more than ever before illegal exchanges of child pornography between users, whether for the purpose of distributing and making such pornography or of luring children for sexual purposes¹¹.

Paedophiles will gravitate towards technologies that maximise anonymity. Indeed, it can be expected that some paedophiles have already chosen to conduct their business within virtual private networks (VPNs). Monitoring VPNs will prove difficult because transactions will be encrypted and Internet trails will be elusive¹².

If VPNs maximise anonymity and possessing them compares to possessing no other popular item, perhaps we should forbid their existence or use, given the information we get from the extract above.

Russia and China seem to be heading that way¹³.

In Development, we present pros and cons of using VPNs, but also varied and technical aspects of the product. We discuss pedophilia when the phenomenon appears associated with virtual networks: We focus on the impact of legalising VPNs. We hope to present an analysis that allows for all types of readers to make the freest choices as possible. In Conclusion, we present an unbiased sum of arguments in order to give an overall idea of the impact of legalizing VPNs on the deterrence of groups that practice pedophilia.

II. DEVELOPMENT

Russia banned VPNs (2017) because people could access forbidden sites through them. See¹³:

VPNs use encryption to disguise the source of Internet traffic, allowing users to view websites that are banned in their home countries. Many popular VPN services cost around \$10 a month. Russian Internet regulator Roskomnadzor maintains a blacklist of thousands of websites.

VPNs let users lie about their physical location: We can pretend to be in America, and access sites that are forbidden in Russia from Russia.

An Internet discussion¹⁴:

Netflix are just sulking because people are using VPN's to connect to Netflix when not in the US. VPN's, like all tech, are not inherently good or bad. It's all in how people use them.

...

VPNs are not bad, they're simply a tool. You don't yell at hammer manufacturers because they can be used for nefarious purposes, so why do the same with VPNs?

If HBO and Netflix have issues with people using VPNs to access their content, then maybe they shouldn't limit content based on geographical region. Just like any DRM, people will find a way around it pretty easily.

...

I use VPNs extensively both for professional as well as personal purposes. Not to pirate content, mainly because I really don't have time or interest, but to connect to secure services and in some

cases because I still do security research on the side. I'm reasonably sure my ISP's privacy practices are a bad joke. Last thing I need is to wind up on a secret watch list while hunting down who's trying to rip one of my clients off.

...

Hack the planet. Information does not want to be free, people do. People use tools. Tools like VPN. People use tools like VPN to become free, and the wild fire of information continues.

In the extracts above, we see some hacktivism¹⁵ (last paragraph), some arguments to the side of the providers whose contents are being inappropriately used (without paying), and some arguments to the side of those who are deprived from those contents, including one that sounds like hacktivism¹⁶.

The list of Australian government departments that theoretically can access metadata collected by the ISPs and telecommunication companies is extensive and wide ranging. This means that a larger part of Australians' lives become accessible to these agencies, and the information collected could potentially be used against them.

The most effective way of protecting privacy of communications on the Internet is to use a virtual private network (VPN), which will quite simply prevent all details of communications (and yes, also browsing history) from being visible to an ISP¹⁷.

VPNs are then about protection of rights. The necessity would come from the fact that the government is requesting ISPs to provide personal users' data^{18,19,20}.

More, same source¹⁷:

VPNs are becoming an essential part of being on the Internet. Apart from the privacy aspect, there is the added security they provide, especially when using unknown wireless networks such as in cafes, airports, or even at work. They also provide the ability to avoid geolocked content on services like Netflix, which up until the advent of metadata retention was the main reason for most people using a VPN, especially in Australia.

Given the commitments to privacy and security made by companies like Apple and Google, it would not be at all surprising if they started to provide their own VPN services to customers that were seamlessly built into their devices.

Culture makes an enormous difference: Inspiration, ideas, and solutions²¹. If Australians do not watch The Matrix²² in time, a major catastrophe may occur: Imagine a comet is about to strike earth. Australian people's cultural experience is very different from the American people's: They could see Keanu moving and realise, just like Newton and his apple²³, that we could be using laser in triangulation to avoid obstacles, saysatellites. Americans could never see that, and therefore the catastrophe would be avoided only if Australians watched The Matrix in time.

To the side of crime, there is more likelihood that the person commit a crime, such as accessing pedophilia websites, if they trust they will remain anonymous. The Australian government, however, does not seem to have any problems with VPNs and the activity²⁴. Besides, we now have tools to investigate things: Honey pots²⁵ and others.

Several other resources make anonymous surfing something material. For instance²⁶: Tor (browser and network), and Incognito mode (Google Chrome, Internet Explorer, Mozilla Firefox, and Safari). Opera has a free VPN built-in²⁷ and that is why anonymous surfing is guaranteed. One can also use proxies²⁷.

Consequently, if we forbid VPNs because they allow for anonymous surfing, we must also forbid incognito mode, proxies, Tor, and others.

Since perpetrators may also rely on anonymous communication tools and keep browsing activities as non-super secretive, we also have to stop Mailvelope, SecureGmail, and alike²⁷.

We can block all that, but the easiest way to target someone online is the IP address^{28,29,30}. People prefer preventing to suffering crime, having to identify perpetrators, and try their luck with the authorities³¹. The number of perpetrators must be smaller than the number of victims in democratic countries^{32,33,34}, since the voice

of the people is the voice of God (figurative³⁵) in those, and therefore the laws are an agreement, not an imposition.

It is much more likely that a non-marginal need to disguise their IP to pass a note to someone overseas than a marginal need to disguise their IP to attack: There is way more retaliation for attempting to exercise human rights than for attempting to commit crime through a computer. Just consider the number of people who are officially told to be in slavery: 45.8 million³⁶. This figure must outnumber by much the total of the people complaining about IT crimes. One of these slaves might find out that those who enslaved them will soon attack America. A computer might be available to them. If someone finds out that they told the Americans, they get killed. If they never find out, America might be prepared for the strike, and even save them out of gratitude. Nobody will ever know they were the informant.

Kids could try to ask other countries to help them if we talk about pedophilia. The IP disguiser could protect them: Perhaps the Afghanistan police officers³⁷ will intercept the message and kill them otherwise.

There is still encryption:

For example, if an offender uses encryption software with a 20-bit encryption, the size of the keyspace is around one million. Using a current computer processing one million operations per second, the encryption could be broken in less than one second. However, if offenders use a 40-bit encryption, it could take up to two weeks to break the encryption. In 2002, the Wall Street Journal was for example able to successfully decrypt files found on an Al Qaeda computer that were encrypted with 40-bit encryption. Using a 56-bit encryption, a single computer would take up to 285 years to break the encryption. If offenders use a 128-bit encryption, a billion computer systems operating solely on the encryption could take thousands of billions of years to break it. The latest version of the popular encryption software PGP permits 1024-bit encryption³⁸.

In a VPN environment, the end that sends communication encrypts and the end that receives decrypts, so that they create a tunnel to communicate and that is when enforcement could have to do much more than the usual.

Tools are also available to encrypt communications – for example, e-mails and phone calls – that can be sent using VoIP. Using encrypted VoIP technology, offenders can protect voice conversations from interception³⁸.

In this case, if enforcement wanted to finish with VPNs because of the work decryption gives, they would have to also finish with encrypted VoIP technology.

Techniques can also be combined. Using software tools, offenders can encrypt messages and exchange them in pictures or images – this technology is called steganography. For investigative authorities, it is difficult to distinguish the harmless exchange of holiday pictures and the exchange of pictures with encrypted hidden messages³⁸.

As a conclusion, upon deciding to finish with VPNs because of the encryption systems, enforcement would also have to finish with the software that is currently used for encryption.

The availability and use of encryption technologies by criminals is a challenge for law enforcement agencies. Various legal approaches to address the problem are currently under discussion, including: potential obligations for software developers to install a back-door for law enforcement agencies; limitations on key strength; and obligations to disclose keys, in the case of criminal investigations. But encryption technology is not only used by offenders – there are various ways such technology is used for legal purposes. Without adequate access to encryption technology, it may be difficult to protect sensitive information. Given the growing number of attacks, self-protection is an important element of cyber security³⁸.

Consequently, there might be important applications of encryption technology. Enforcement seems to have alternatives to finishing with the VPNs. For those who like independence of the authorities, the back-door entry point is certainly the most attractive option. Limitations on key strength does not seem to be a reasonable suggestion because they probably go as far as needed most of the time (in Australia, authorities discipline:

Only proportional force to the force applied against us³⁹). Obligation to disclose keys upon request (investigations) is a good option for those who like dependent authorities: Perhaps in this way we have more control over them. Human lives may depend on that information being disclosed: Having to request things and counting on the collaboration of others may mean death or lifetime injury⁴⁰. The most democratic would probably think that as long as the public can get information from the authority in an expedite manner, information that may save the lives and/or bodies of those that they care about, then it is OK⁴¹. Marcia R Pinheiro⁴² requested that authorities disclosed the ownership of the vehicle NOI916, a vehicle whose driver and passenger stalked and harassed her throughout the length of Charnwood Road in the end of 2001. She was denied the information by every Australian authority for law and order each, and every, time (Equity VUT, 2001; VICPOL through subpoena, 2004; NSW police, 2005; and so on). Yet, the authorities clearly had the information requested plus extra. By the principles of democracy (privacy, freedom, equal opportunity, etc.), they should be obliged to disclose that in an immediate manner (pictures were presented alongside with reports that included Equity VUT branch employees holding all needed information). For not having the information, many years and personal resources were lost: Crime committed by the same agents. We must always see both sides: That the authorities access what they need in a timely manner, and that we access what we need in a timely manner. Citizens can only trust a relationship, and, in this case, we talk about the relationship between The State and the citizen in democracy, if things work both ways⁴². If they don't, it seems that the tendency is self-protection, and therefore supporting obstruction of investigation and protection against invasion of privacy to maximum. Let's call this resistance to authority. Citizens are probably prepared to be as clean as the authority, but never cleaner than them.

III. CONCLUSION

Virtual Private Networks (VPNs) increase the likelihood of pedophilic crimes because they provide anonymity, but they also increase the chances of getting saved for those who are in slavery, and the number of people who would want to practice pedophilic crimes is very low when compared to those who are in slavery (about 46 million).

At least two very well-known countries have forbidden the use of VPNs: Russia and China. The reasons for them to do so are censored websites, terrorism, and circulation of unwanted information.

If we finish with VPNs, so say we pass a law in Australia forbidding them, but our government seems to be well informed and not think that VPNs are a problem, we will have to finish with several other things if the reason is anonymous surfing: Incognito option in browsers, Tor (network and browser), Mailvelope, SecureGmail, and the alike.

If a person targets us, and getting our IP is easy for them, they can attack us in several ways, even physically, so that VPNs help protect the figure of the good citizen, not only the marginal, and there are way more possible victims of cybercrime than people willing to commit that sort of crime, so that the number of possible benefits of having it is again larger than the number of possible losses.

People might use VPNs to pretend to be overseas, so that they may pay lower fees for a certain piece of software or even have access when their Country forbids it. Some organizations, such as Netflix, seem to be upset with that sort of thing; perhaps very upset. Companies complaining about this are usually private, and the governments have not yet showed any major concern with that, so that this issue is minor.

The information contained in a movie can change the destiny of human kind: An Australian watching The Matrix might have an idea that Americans doing the same thing will never have because of cultural differences. That idea might actually save human kind from a major disgrace. Australians may never watch The Matrix in time if they don't have VPNs.

Enforcement seems to go through a lot of struggle to break the walls between the message and them when there is encryption: All seems to depend on the size of the key and it can take them from two weeks to about two thousand and three hundred years to get to the contents. That is certainly not reasonable. This token of information makes us seriously think of forbidding VPNs. Notwithstanding, the International Technological University, which seems to be the origin of our data on this matter, has alternatives: One of them is obliging software developers to install a back-door for enforcement. Another is limitations on key strength. Yet another is obliging them to disclose keys in the case of criminal investigations. If enforcement has to put in requests with third-parties, people may die or suffer lifetime injury during the waiting time and because of it. Limitations on key strength does not seem to be a wise move because society probably acts under the principle of proportional reaction. Leaving a back-door open for enforcement looks like the most interesting approach, but one must bear in mind that this is a good idea only when the authority responds to the needs of the individuals who are honest in an expedite manner: The population should not be happy with this choice otherwise.

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