The scourge that is Child Sex Abuse

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**Problem Statement**

The problem our group will be researching is child sex abuse over the Internet. While there are many laws (which we will go over in this project) which make child sex and matters relating to child sex illegal, it is still rampant on the Internet. Keller and Dance (2019) have an article on two sisters who were sexually abuse as children back in 2009, when they were 11 and 7. Even though that abuse was, at the time of the article, ten years ago, there were still over a hundred sources that contain photos and videos of them, and their abuse, found in just 2019. Even though their sex abuse occurred a decade again, and the men involved are in prison, the content from those events is still circulating the Internet. The sisters are not alone in their child sex abuse, or of the photos and videos made of that abuse. Keller and Dance (2019) state that there are many opportunities on the Internet for criminals to exploit, such as search engines, social networks, and cloud storage. They go further in attesting how big of a problem child sex abuse is by stating that in 2018, 45 million photos and videos were flagged online as containing child sex abuse content. In our project, our group will be going over the specifics of this problem, from the laws that target Internet exploitation to a tool on Windows that shows how child sex abuse content can be hidden on a computer.

The supporting logistics and tools our team will be using to address this problem are: the Internet, the specific sites are listed in our References section; the knowledge we’ve gained thus far working on our BAS in Cyber Security; and the Windows tool of alternate data streams (ADS).

The requirements for this project are researching and answering the following questions:

R1. What are the primary federal laws that target Internet exploitation?

R2. What are the major Supreme Court cases on Internet exploitation?

R3. How prevalent is child pornography on the Internet?

R4. How do pedophiles and other child exploiters use the Internet to commit their crimes?

R5. What role does child pornography play in child molestation?

R6. How has the Internet changed the landscape of prostitution and the sex trade?

R7. What are the roles of the various law enforcement agencies in the area of Internet exploitation?

The mission of the Violent Crimes Against Children (VCAC) program within the FBI is to provide a rapid, proactive, and comprehensive capacity to counter all threats of abuse and exploitation of children. There is also an international task force working together to formulate and deliver a dynamic global response to crimes against children Visit their Web site at: https://www.fbi.gov/investigate/violent-crime/cac.

R8. What are the primary challenges that law enforcement agencies face in investigating Internet exploitation?

R9. What is sex tourism?

R10. What are the most common destinations for child sex tourism?

R11. What problems do you see confront the task of investigating and prosecuting child sex tourism in foreign countries?

Alternate data streams (ADS) are still being used to hide child sex abuse on Windows computers.

R12. What are alternate data streams and why don’t most security controls (e.g. anti-malware) detect them?

**Solution**

Our team will be conducting our research primarily on the Internet. We will locate legitimate sources to help answer our questions regarding child sex abuse. Our group has split the questions into four groups: Kia will answer R1-R4; Luis will answer R5-R8; Chris will answer R9-R12; and we will work as a group to answer R13-R15. Here, in the Solution section, we will state how we conducted our research to answer our questions. In the following Results section, we will lay out the answers.

**Results**

**R1. What are the primary federal laws that target Internet exploitation?**

Below is a list of some of the primary federal laws that target Internet exploitation:

* + - * 18 U.S. Code § 2251. Sexual exploitation of children – Legal Information Institute (LII; 18 U.S. Code § 2251) states that this law applies any person who, by whatever means, gets a minor to engage or assist in any sort of sexually explicit act that is to be produced into a visual depiction of the act or for the purpose of transmitting a live visual depiction of the act. This law also applies to those who know someone who is engaging in the transportation or transmission of any visual depictions; as well as any person who has custody or control of a minor, including parent or legal guardian, who knowing permits a minor to engage or assist in any sort of sexually explicit act that is to be produced into a visual depiction of the act or for the purpose of transmitting a live visual depiction of the act. The law further applies to any person who prints, publishes, receives, buys, displays, reproduces, posts an ad seeking or offering any visual depiction of a minor engaging in a sexually explicit act. It can be construed from any paragraphs of this law that any person conducting any of these actions via use of the Internet shall be punished.
      * 18 U.S. Code § 2251A. Selling or buying of children – LII (18 U.S. Code § 2251A) states that this law applies to any person who has custody or control of a minor, including parent or legal guardian, who sells or transfers that custody or control with the knowledge that in doing so will lead to the minor engaging or assisting in a visual depiction of a sexually explicit act shall be punished. It also applies to any person who purchases or gains control or custody of a minor for the purpose of the act listed above. It can be construed that this law applies to a purchase or a transfer of control or custody that occurs on the Internet.
      * 18 U.S. Code § 2252. Certain activities relating to material involving the sexual exploitation of minors – LII (18 U.S. Code § 2252) states that this law specifically applies to any person who knowingly transports, receives or distributes, sells or possesses visual depictions of a minor engaging in a sexually explicit act shall be punished. It can be construed that this law applies to the visual depictions that are transported, received, distributed, sold or stored on the Internet.
      * 18 U.S. Code § 2252A. Certain activities relating to material constituting or containing child pornography – LII (18 U.S. Code § 2252A) states that this law applies to any person who knowingly mails, transports, ships, receives, distributes or reproduces any form of child pornography, including by computer shall be punished. This also includes any person who advertises, promotes, or solicits by any means about any form of child pornography. It can be construed that this law applies to any forms of child pornography sent, received, and promoted over the Internet.
      * 18 U.S. Code § 2252B. Misleading domain names on the Internet – LII () states this law applies to any person who uses a misleading Internet domain to deceive another person, predominantly a minor, into viewing harmful material such as sexually explicit content shall be punished. This law specifically applies to an act done on the Internet—using a misleading domain name. It predominantly applies to any person who is trying to encourage a minor to view sexual content.
      * 18 U.S. Code § 2252C. Misleading words or digital images on the Internet – LII (18 U.S. Code § 2252C) states that any person who knowingly embeds words or images into the source code of a website to deceive another person, including a minor, into viewing sexually explicit content shall be punished. This law specifically applies to an act done on the Internet—embedding content into the source code of a website.
      * 18 U.S. Code § 2258C. Use to combat child pornography of technical elements relating to reports made to the CyberTiplin – LII (18 U.S. Code § 2258C) states that this law allows National Center for Missing & Exploited Children (NCMEC) to provide content electronically relating to any CyberTipline report for the purpose of stopping online sexual exploitation of children. It also states how law enforcement may only use that content for official duties of investigating child sexual exploitation crimes, and to prevent further of such crimes to occur. While this law doesn’t affect those who commit child sex crimes, it holds those who may get ahold of sexually explicit content of minors from the job accountable of only using that content for their job—making it illegal for them to contribute to online sexual exploitation of children.
      * 18 U.S. Code § 2260. Production of sexually explicit depictions of a minor for importation into the United States – LII (18 U.S. Code § 2260) states that this law applies to any person outside of the United States who, by whatever means, gets a minor to engage or assist in, or transports a minor with the intent of the minor engaging in sexually explicit content, intending that the content will be imported or transmitted to the United States or into waters 12 miles off the coast of the United States shall be punish. It also applies to anyone outside of the United States who knowingly receives, transports, ships, distributes, sells or possesses sexually explicit content of a minor with the intent that the content will be imported into the United States or 12 miles off of the coast of the United States. It can be construed that any person outside of the United States that uses the Internet to transmit sexually explicit content of a minor into the United States shall be punished.

**R2. What are the major Supreme Court cases on Internet exploitation?**

Below is a list of some of the major Supreme Court cases on Internet exploitation.

* + - * Miller v. California, 413 U.S. 15 (1973) – Hudson Jr. states upon the Supreme Court upholding the prosecution of Miller, who distributed obscene material, came what would be known as the Miller test—"a test used to determine whether expressive materials cross the line into unprotected obscenity” (Hudson, Miller v. California). This ruling would help be a basis for what material could be considered as obscene. While this case does not directly involve the Internet, it can be referred to by other cases that do involve the Internet and sexually explicit-like material.
      * New York v. Ferber, 458 U.S. 747 (1982) – Ward (New York v. Ferber) states this case as being “the foundational decision in which the Supreme Court held that the First Amendment does not protect child pornography”. In this case, a bookstore owner, Paul Ferber, was charged with distributing child pornography to two undercover police officers (Ward, New York v. Ferber). Because the movies involved actual minors engaging in sexually explicit activity, it was ruled that was indeed child pornography and not an artistic depiction of children. While this case does not directly involve the Internet, it can be referred to by other cases that involve the internet and child pornography.
      * Ashcroft v. Free Speech Coalition (2002) – Ward (Ashcroft v. Free Speech Coalition) states “the Supreme Court struck down portions of the federal Child Pornography Prevention Act (CPPA) of 1996 that banned ‘virtual child pornography,’ which the justices said was neither obscene nor actual child pornography as defined by previous decisions”. He goes on further to show how this case ruled that virtual child pornography cannot be outlawed as child pornography if no actual children were involved. This case refers to Miller v. California (1973) and New York v. Ferber (1982) in that virtual child pornography is neither obscene based on Miller nor child pornography based on Ferber (Ward, Ashcroft v. Free Speech Coalition). Ward (Ashcroft v. Free Speech Coalition) also states that “These sections of CPPA represented an attempt to outlaw virtual child pornography, which Congress was particularly concerned about due to the growth of computer technology and the Internet”. It can be construed that the growth of computer technology and the Internet would lead to an increase in virtual child pornography, and perhaps an increase in cases involving virtual child pornography if it was not defined as not unlawful if not involving actual children.
      * U.S. v. Troy Upham, 98-1121, 168 F.3d 532 – Lewis et al. (2009, pg. 27) states that on February 2, 1999, Troy Upham was convicted on:  
         Four counts of transporting in interstate commerce computer graphic images of   
         minors engaged in sexually explicit conduct, the production of which involved   
         the use of minors engaged in such conduct, in violation of 18 U.S.C. § 2252(a)(1).   
         Each count related to transmissions on a different date. One count (count 5) of   
         possession of 1,400 images of minors engaged in sexually explicit conduct, the   
         production of which involved the use of minors engaged in such conduct, in   
         violation of 18 U.S.C. § 2252(a)(4)(B).  
        Casetext Inc. (U.S. v. Upham) further explains this case. The act that ultimately led to the arrest of Troy was when undercover agents, who were monitoring a chat room on the Internet, received images of child pornography. It was later found that a computer from his household contained a computer and multiple diskettes that contained nearly 1,400 images of sexually explicit conduct involving minors. “Later evidence, including admissions from Upham, showed that Upham was the principal user of the computer and that child pornography had been sent and received by him over the Internet on a regular” (Casetext Inc, 1999). Based on the data gathered from Lewis et al., this is one of the first charged federal cases of child pornography on the Internet.
      * U.S. v. John Fabiano, 98-1048, 169 F.3d 1299 – Lewis et al. (2009, pg. 27-28) states that on March 5, 1999, John Fabiano was “ Charged in a 15-count indictment with transporting, receiving, and possessing child pornography in violation of 18 U.S.C. § 2252(a)(1), (a)(2) and (a)(4)(B)”. Casetext Inc. (U.S. v. Fabiano) further explains that this case involved computer-generated images of child pornography being discussed and received by those engaging in an Internet chat room.
      * State v. Chris Randolph Morse, COA08-663, 671 S.E. 2d 538 – Lewis et al. (2009, pg. 193) states that Morse was convicted of “Knowingly soliciting a person believed to be a child by computer with intent to commit an unlawful sex act in violation of N.C.G.S. 14-202.3”. CourtListener (n.d.) describes this case as Morse using a Yahoo! chat room to not only chat with a minor, but to meet up with intentions of engaging in sexual activities. The article further states that not only was there the intention of meeting up, but the meet up planned in the chat took place, albeit with a reporter and law enforcement instead of the minor Morse thought he was communicating with (Courtlistener, n.d.).

**R3. How prevalent is child pornography on the Internet?**

According to FBI.gov, on one of the child pornography networks on the dark web, Tor, it was found that just one of the websites on that network contained 1.3 million images of child sex abuse. It was also found that “a single website hosted on Tor had approximately 200,000 registered users and 100,000 individuals had accessed the site during a 12-day period” (FBI.gov, 2017). FBI.gov also states that National Center for Missing & Exploited Children (NCMEC) estimated that in 2015 there was more than 26 million child sex abuse content being reviewed by their analysts. That is a huge number, especially, considering that is just the content they know about and are analyzing. Thorn states that it wasn’t just in 2015 that millions of child pornography was being reviewed by NCMEC; every year 25 million images are reviewed by NCMEC, that’s over 480,000 images a week. Enough Is Enough gives us more statistics on child pornography, shown in the list below:

* + - * Children 10 years of age and younger account for 22% of all online obscene-content consumption
      * 72% of all Commercial Sexual Exploitation of Children (CSEC) suspects possessed child pornography
      * 92% of all child sex abuse websites were identified globally in 2016, United States was ranked 2nd out of five countries
      * The Canadian Centre for Child Protection found that children 12 years of age or younger were in 78% of images and videos found by their team
      * Of all the searches conducted in eDonkey P2P network, more than 30% were related to child sex abuse
      * NCMEC has reported a 774% increase of child pornography reviewed by their identification program

**R4. How do pedophiles and other child exploiters use the Internet to commit their crimes?**

One way in which pedophiles and other child exploiters use the Internet to commit their crimes is through chat rooms. We saw this above in R2 in State v. Chris Randolph Morse, where a chat room was used to solicit sexually activities from a minor (Courtlistener, n.d.). NBC News reports that, in an effort to fight child pornography, agents used chat rooms, along with other private messaging options, to seek out potential pedophiles and child exploiters (2006). Another way in which these exploiters use the Internet is through social media. Picheta of CNN UK states that over 5,000 cases of online grooming since 2017. Picheta goes further to state that Instagram accounted for a third of those cases, Facebook accounted for 23%, and Snapchat for 14%. Another way is via the dark net. The dark net is part of the Internet away from normal users, that can only be accessed by certain browsers, such as Tor (Farivar & Blankstein, 2019). One site on the darknet, “Welcome to Video,” contained nearly 8 terabytes of sexual content involving children, including toddlers and infants (Farivar & Blankstein, 2019).

**R5. What role does child pornography play in child molestation?**

Child pornography is a gateway to child molestation. A PHD professor at Virginia Commonwealth University stated that in her research of the effects of pornography she found that men who watched more pornography deliberately conjured up pornographic images to maintain arousal during sex, and she also stated that for people, pornography is not mere fantasy, it actually shapes how they engage in intimate behaviors (Mcneill. 2015). Potential molesters are feeding their fantasies with the ease of access to child pornography. While the viewing of child pornography is a heinous crime in itself it can easily evolve into molestation.

**R6. How has the Internet changed the landscape of prostitution and the sex trade?**

According to the FBI sex trafficking is the second fastest growing criminal industry next to only the drug industry. With the internet now, the landscape of prostitution and sex trading is massively different and much more difficult than before. Traffickers are using the internet as a platform and a way to target victims. Now we see so many young girls and boys on social media posting constant photos of themselves which just makes it easier for traffickers to pick a target. The ability to create false accounts to lure people and then kidnap them is astounding. As far as prostitution, we need to remember that the web is a very vast place. With access to the dark web prostitution has become as accessible as online shopping, people can just access a website and “purchase” sex.

**R7. What are the roles of the various law enforcement agencies in the area of Internet exploitation?**

Several law enforcement agencies have a part to play in the investigation of Internet exploitation. For example the FBI is in charge of multiple parts including “commercial child abuse image websites where predators are featured abusing children and which profit from their terrible crime, as well as persons or groups who engage in the production of child abuse images, as the production of this material signifies the violent rape or sexual abuse of a child” (Swecker, 2006). The FBI however only has jurisdiction within the US which is why they work with their international facilitators like INTERPOL, which is the international police organization which facilitates the cooperation of international police. They also work with the department of state. Various agencies work together all with the same intention, to stop internet exploitation, especially when it regards to children.

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**R8. What are the primary challenges that law enforcement agencies face in investigating Internet exploitation?**

There are several challenges that law enforcement agencies face when it comes to the investigation of internet exploitations. One of them is dealing with the tracking of the searches. The internet is composed of three parts, the shallow web, the deep web, and the dark web. The shallow web is all the indexed things, like your normal google searches and that only makes up about 3-5% of the total internet. The dark web is comprised of anonymity people who use it need special tools to access it like TOR browser. This just means investigation is that much harder because tracking a culprit is incredibly difficult. According to an article written by UNODC (United Nations Drug and Crime) office, “The sheer size of the Internet, and the number of online platforms and apps, and digital technologies on the market, makes it easy for perpetrators to hide in plain sight. Given the volume of data and number of online sites, traditional investigative techniques of child sexual exploitation and abuse do not suffice. (Katarina). Jurisdictional issues can also play a role, it is hard for one jurisdiction to investigate if the crimes they track are being committed across the country.

**R9. What is sex tourism?**

1. Sex tourism is the intent to travel to a different location usually a different country for the purpose of sexual activities, particularly with prostitutes. It is also defined by Wikipedia as “trips organized from within the tourism sector, or from outside this sector but using its structures and networks, with the primary purpose of effecting a commercial sexual relationship by the tourist with residents at the destination"

2. There seems to be a growing number of adult-only, sex-positive resorts that provide a safe, consensual space in which to embrace all expressions of gender, orientation and relationship style. They range from “clothing optional” enclaves to properties that boast “playrooms” in which guests can, presumably, make more than friends. (Hutton, 2019)

**R10. What are the most common destinations for child sex tourism?**

1. The most common destinations for child sex tourism seems to be Brazil, Thailand, Cambodia, India, and Mexico.

2. Child sex tourism has been closely linked to poverty, armed conflicts, rapid industrialization, and exploding population growth. In Latin America and Southeast Asia, for instance, street children often turn to prostitution as a last resort.

**R11. What problems do you see confronting the task of investigating and prosecuting child sex tourism in foreign countries?**

1. Foreign Countries have different laws in place or none even which can cause child sex tourism to rise.

a. Extraterritorial Jurisdiction can cause a major role in travel to other countries.

i. While some countries like Australia, New Zealand, Switzerland and others have laws in place that prosecutes their citizens in their homeland should they engage in illicit sexual conduct in a foreign country with children.

ii. There are other countries like Mexico and India that are not on that list which causes this rapid grown in child sex tourism.

b. Policing of child sex tourism

i. When it comes to actual policing of child sex tourism it looks like a lot of countries in Asia, Southern North America, and South America have very lax in policing child sex tourism which will cause the issues to continue.

*Alternate data streams (ADS) are still being used to hide child sex abuse on Windows computers.*

**R12. What are alternate data streams and why don't most security controls (e.g. anti-malware) detect them?**

1. Alternate data Stream (ADS) is the ability of an NTFS file system (the main file system format in Windows) to store different streams of data, in addition to the default stream which is normally used for a file. When this feature was created, its main purpose was to provide support to the macOS Hierarchical File System (HFS). (Leibovich, 2019)

2. The reason most security controls do not detect alternate data streams is because of what they are, alternate data streams are hidden files attached “underneath” another file. According to Ray Zadjmool in Hidden Threat: Alternate Data Streams “it is virtually impossible to natively protect your system against ADS hidden files if you use NTFS”. (Zadjmool, 2017) The reason why most “Anti-Malware” do not detect ADS in files is because they only scan the top layer of the file.

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