

Internet Child Pornography: Legal Issues and Investigative Tactics

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The protection of children has historically been an important part of any society; the same holds true today (Finkelhor, Mitchell, and Wolak 2000). With the incredible growth in science and technology over the last two decades, there has been an increased emphasis on the protection of children (Finkelhor, Mitchell, and Wolak 2000; Seigfried-Spellar, Lovely, and Rogers 2010). The Internet and its accompanying technologies (e.g., the World Wide Web, Twitter, FaceBook) have introduced some complexity and possible new avenues for the potential abuse of children and other historically victimized segments of our population. The notion that the Internet has become both a tool for advancing our society and culture as well as a tool for criminal or nefarious purposes is well documented (Ferraro and Casey 2005; Rogers and Seigfried-Spellar 2009; Taylor 1999, September; Wolak, Finkelhor, and Mitchell 2009). Criminals and other deviant segments of society have traditionally been early adopters of technology as a means to extend and improve their criminal tradecraft (Ferraro and Casey 2005). Information and Internet technologies are no exception to this. One only has to look at the various media reports on identity theft, credit card fraud, or some other electronic banking attack for confirmation.

As it relates to the notion of protecting children, the Internet and its technologies have been in the media forefront. Federal, state, and local law enforcement agencies have created specialized units and task forces (e.g., Internet Crimes Against Children (ICAC) Task Force) to investigate crimes against children where the attacker has used technology to target their victims (Breedon

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and Mulholland 2006). The Federal Government has passed new legislation (e.g., the Adam Walsh Act) and provided funding to centers that focus on combating child exploitation (National Center for Missing and Exploited Children) (Finkelhor, Mitchell, and Wolak 2000; Wolak et al. 2008).

Despite these seemingly proactive approaches to child protection, very little if any research has been conducted on the nature of these types of crimes and on the characteristics of these offenders (Lanning and Burgess 1984; Quayle and Taylor 2005). While there has been some empirically based research (such as Durkin and Bryant 1999; Jenkins 2001), most of the evidence cited to justify the focus on the Internet and its technologies is anecdotal or single case in nature. This has resulted in a gap in our understanding of the offenders, uncertainty regarding how to protect the victims, and ignorance as to how best to investigate, prosecute, and deter these types of offences (Ferraro and Casey 2005; Taylor and Quayle 2003).

There has been some limited debate as to whether there is truly an increase in pedophilia and sexual deviancy that can be attributed to the corresponding increase in society's dependency on technology and the Internet. Current research indicates that regardless of the correlation versus causation debate, consumers of online child pornography are using Internet technologies to further their deviant sexual behavior (Taylor and Quayle 2003; Wolak, Finkelhor, and Mitchell 2009).

As an attempt to shed some much-needed light on this societal issue, this chapter examines the role that the Internet and internet-related technologies play in child pornography, pedophilia and sexually deviant Internet-based paraphilia. We examine the emerging typology of online consumers of child pornography and how this is being manifested in the technology and online behaviors exhibited by these individuals. The chapter provides a brief overview of the context and possible scope of online child paraphilia, summarizes the current research related to investigative profiles of online predators and consumers of child pornography, advances in understanding and categorizing offenders and their offences, provides suggestions for modifying current sentencing guidelines and provides guidance on using digital evidence in support of these types of investigation. Two case studies are also included to illustrate the concepts discussed.

Scope and Context

As was stated in the introduction, the threat of online predators and the correlation between the Internet and pedophilic behavior has caused much

alarm in the law enforcement arena that given the fact that so much on this, that we would have statistics on the frequency and prevalence of the empirical research regarding effectiveness of investigative techniques (Spellar, Lovely, and Rogers 2010 et al. 2008). As was previously stated, a lack of research or evidence based prevention type of criminal behavior (Wolak, Finkelhor, and Mitchell 2009) by federal agencies such as the FBI. Limited reports (Lanning 2001; Lanning and Burgess 1984) on predatory offenders and consumers restricted to those cases that have other sex crimes, pedophilic relationships, or are reported (Wolak, Finkelhor, and Mitchell 2009).

This lack of statistics has resulted in claims by organizations that have tried to educate parents and adolescents. As an example of some of the following statistics (Enough 2009):

- Average age of first Internet use is 11 years old
- Largest consumers of Internet pornography are 15-17-year-olds having internet access at home
- 15-17-year-olds having internet access at home
- 8-16-year-olds having internet access at home
- 7-17-year-olds who would use the Internet to find pornography
- 7-17-year-olds who would use the Internet to find pornography
- Children's character names used in pornography including Pokemon and Act

It is unknown where these statistics were collected (assuming some type of survey was conducted), as no information is provided on the procedures. At first glance these statistics show adolescents having hardcore exposure to pornography. Even if these statistics are accurate, they do not tell about the risk of these children being exploited by predators or about the consumer's role in even more disturbing sup-

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alarm in the law enforcement and general public domains. One would assume that given the fact that so much media and political attention has been focused on this, that we would have statistics and meaningful metrics regarding the frequency and prevalence of these activities or that we would have a body of empirical research regarding offender characteristics, victimology, and the effectiveness of investigative techniques. Sadly, this is not the case (Seigfried-Spellar, Lovely, and Rogers 2010; Wolak, Finkelhor, and Mitchell 2009; Wolak et al. 2008). As was previously stated, there does not seem to be a large body of research or evidence based public or law enforcement policy regarding this type of criminal behavior (Wolak, Finkelhor, and Mitchell 2009). To be fair, federal agencies such as the FBI have published various law enforcement related reports (Lanning 2001; Lanning and Burgess 1984) dealing with predatory offenders and consumers of child pornography, but these reports are restricted to those cases that have been officially reported to authorities; like other sex crimes, pedophilic related or predatory offender crimes tend to be under reported (Wolak, Finkelhor, and Mitchell 2009; Wolak et al. 2008).

This lack of statistics has resulted in some dubious and obviously inflated claims by organizations that have taken on the task of trying to protect children and/or educate parents as to the risks of the Internet to children and adolescents. As an example of some these claims, several websites provide the following statistics (Enough 2009; Media 2009):

- Average age of first Internet exposure to pornography—11 years old;
- Largest consumers of Internet pornography—35–49 age group;
- 15–17-year-olds having multiple hard-core exposures—80%;
- 8–16-year-olds having viewed porn online—90% (most while doing homework);
- 7–17-year-olds who would freely give out home address—29%;
- 7–17-year-olds who would freely give out email address—14%; and
- Children’s character names linked to thousands of porn links—26 (Including Pokemon and Action Man).

It is unknown where these statistics came from or how the sample was selected (assuming some type of actual empirical/ survey based research was conducted), as no information was available on the methodology or sampling procedures. At first glance these statistics seem very frightening, with 80% of adolescents having hardcore experiences, and 11-year-olds viewing pornography. Even if these statistics are valid and reliable, they do not tell us anything about the risk of these children and adolescents becoming victims of online predators or about the consumption of child pornography. Other websites offer even more disturbing supposed statistics (Healthymind 2009):

- 100,000 websites offer illegal child pornography;
- Child pornography generates \$3 billion annually; and
- Largest consumer of Internet pornography is the 12–17 age group.

These statistics are equally frightening, but again, where did they come from? How can we possibly know or estimate the annual revenue from child porn; do these individuals and businesses file tax returns with their respective countries? How did they confirm the age range for the consumers of child porn? Unfortunately, as is the case with emotionally and politically charged topics, personal, corporate, and political agendas can get in the way of meaningful metrics and statistics that are essential for garnering a true understanding of the risks to children and adolescents and the actual role that the Internet and its technologies play (e.g., Quayle and Taylor 2005; Skenazy 2009). As Lanning so eloquently stated:

Some professionals [dealing with child sexual abuse], however, in their zeal to make American society more aware of this victimization, tend to exaggerate the problem. Presentations and literature with poorly documented or misleading claims about one in three children being sexually molested, the \$5 billion child pornography industry, child slavery rings, and 50,000 stranger-abducted children are not uncommon. The problem is bad enough; it is not necessary to exaggerate it. Professionals should cite reputable and scientific studies and note the sources of information. If they do not, when the exaggerations and distortions are discovered, their credibility and the credibility of the issue are lost (Lanning 1992, 15).

From a global perspective, the problem of child pornography only escalates due to the differences in national and international legislatures. The possession, distribution, and production of Internet child pornography is criminally sanctioned in several countries, such as the United States and United Kingdom; however, it is not illegal but is, in fact, readily available in others. For example, Japanese law only criminalizes the production or distribution of child pornography, thereby allowing personal possession without intent to distribute. In addition, similar laws accepting the personal use of child pornography are prevalent in Russia, Thailand, and Korea (Akdeniz 2008). On the other hand, several international entities have criminalized the possession, distribution, and production of Internet child pornography all together, such as the European Union, Council of Europe, and United Nations (Akdeniz 2008). The Canadian Criminal Code has included “viewing” or “accessing” as a criminal offense, even if the individual did not permanently possess (e.g., download) the child pornography image. Overall, child pornography has become a global

problem due to advancements in technology and policies and sanctions.

The lack of reproducible empirical difficulties in determining the real severity of the offender, and what sentences are appropriate (Akdeniz 2008). Therefore, it is difficult to find possible solutions to this gap in knowledge.

The COPIN

In 1997, funding from the European Child Abuse Information Networks in Europe explored the relationship between technology and the victimization of children (Taylor, Hill, and Hester 2001). As part of the COPIN project, researchers began to analyze child pornography images collected by child protection agencies. Taylor et al. developed a continuum of child pornography images from seemingly innocent, non-sexualized images to sexually explicit and aggressive images. This continuum includes 10 levels based on the degree of sexual victimization: indicative, nudist, erotic posing, explicit sexual activity, and child sexual abuse (Taylor et al. 2001).

Level 1, or the indicative category, refers to an image, such as the advertisements for Disney (Level 2) includes images of naked or semi-naked children from a legitimate source (Taylor et al. 2001). Level 3, or the Erotic Posing, refers to images of children taken in safe environments with no sexual intent, as pictures covertly taken of children playing. However, the images contained in Levels 1, 2, and 3 are “chargeable” offenses due to the lack of context or intent of the image (e.g., child pornography; Taylor et al. 2001).

Levels 4, 5, and 6 specifically refer to child pornography. Level 4 (posing), the intentionally posed in either complete, partial, or nude (Taylor et al. (2001), the amount, context, and on

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The lack of reproducible empirical research in this area often leads to difficulties in determining the real severity of the offence, the danger posed by the offender, and what sentences are appropriate or in the United States, constitutional (Akdeniz 2008). Therefore, it is important to turn our discussion to possible solutions to this gap in knowledge.

The COPINE Project

In 1997, funding from the European Commission ignited the Combating Paedophile Information Networks in Europe (COPINE) project to research and explore the relationship between technology, more specifically the Internet, and the victimization of children (Taylor, Holland, and Quayle 2001). As part of the COPINE project, researchers began to quantitatively analyze and review child pornography images collected by offenders in order to explore the level of child victimization and severity of possession for the offenders. In 2001, Taylor et al. developed a continuum or categorization system, which placed seemingly innocent, non-sexualized images at one end of the spectrum while the sexually explicit and aggressive images appeared at the polar end. COPINE's continuum includes 10 levels based on the increase in severity of the child's sexual victimization: indicative, nudist, erotica, posing, erotic posing, explicit erotic posing, explicit sexual activity, assault, gross assault, and sadistic/bestiality (Taylor et al. 2001).

Level 1, or the indicative category, refers to any non-pornographic or innocent image, such as the advertisements for Disneyland. The nudist category (Level 2) includes images of naked or semi-naked children in appropriate nudist settings from a legitimate source (Taylor et al. 2001), such as an Art gallery or family photo album. Level 3, or the Erotica category, refers to images secretly taken of children in safe environments with varying degrees of nakedness, such as pictures covertly taken of children playing at the park or on the beach. However, the images contained in Levels 1, 2, and 3 are usually not considered “chargeable” offenses due to the lack of obscenity or difficulty in identifying the context or intent of the image (e.g., child pornography vs. real family photographs; Taylor et al. 2001).

Levels 4, 5, and 6 specifically refer to images where the children are deliberately posed. In Level 4 (posing), the images involve children that are intentionally posed in either complete, partial, or no clothing. According to Taylor et al. (2001), the amount, context, and organization of the Level 4 images may

suggest whether or not the collector has a sexual interest in children. In addition, Level 5 (erotic posing) refers specifically to the deliberate sexual nature of the child's pose, which may include varying degrees of nakedness (e.g., child's legs are spread open). The explicit sexual posing category (Level 6) includes images, which stress the child's genital areas, once again, regardless of the degree of nakedness. As the categories increase in the level of child victimization, the legality of the images becomes more cohesive with current legal definitions of child pornography. Again, Levels 4 and 5 may or may not be considered illegal; however, there still exists a psychological abuse due to the broken boundaries between the adult and child. With Level 6, images are more likely to be considered chargeable depending on the age of the minor. Currently, the majority of international and national legislature defines a minor as under the age of 18 years (Akdeniz 2008).

Finally, for most international and national legislatures, it is illegal to possess, distribute, or produce images of minors in Levels 7, 8, 9, and 10 of the COPINE continuum. These categories include images in which the level of victimization is considered to be more severe because of the direct interaction between the victim and the producer, which involves both physical and psychological abuse. Level 7, or explicit sexual activity, involve images of "touching, mutual and self-masturbation, oral sex, and intercourse by a child" (Taylor et al., 2001, 101), which do not involve the participation of any adult. In the assault category (Level 8), the child is sexually assaulted by an adult through digital touching. Level 9 (gross assault) includes grossly indecent images in which an adult is sexually assaulting the child by penetrative sex, masturbation, or oral sex. Finally, Level 10 (sadistic/ bestiality) refers to images in which (1) the child is being "tied, bound, beaten, whipped, or otherwise subject something that involves pain" or (2) images of a child involved in some form of sexual activity with an animal (Taylor et al. 2001).

Overall, the continuum suggested by Taylor et al. (2001) is the best descriptive analysis to date regarding the types of child pornography images available via the Internet. As the spectrum suggests, not all child pornography images are the same, especially in regards to their level of victimization. In addition, the classification system includes images that may or may not be criminally sanctioned. By not solely focusing on the pictures that are illegal, science can begin to emphasize the psychological perspectives of the offender (Taylor et al. 2001). In the end, the preferred type of image and the collection itself may provide researchers with a better understanding of the offenders' personality traits and psychological characteristics.

In addition, Taylor et al. (2001) suggest each level should be assessed regarding size, novelty, and the age of the victim. The size and quality of the offender's collection may indicate their level of involvement in child pornography

For instance, the collection may refer to the level of addiction or obsession of novel images may indicate the offender's involvement in Internet. In essence, the more offenders may be in the Internet child pornography, the more likely to be the victim, as it is easier to control and manipulate, and the level of involvement in pornography is decreasing within each category of the COPINE scale. These three additional factors.

The Court

The COPINE classification system as well as legislative decisions regarding the use of child pornography. For instance, Frei, Erenay, Dittmann, and others (2002) studied child pornography offenders in Switzerland by law enforcement for using the Internet to produce child pornography. "Slide Production Inc," which required the offender to produce child pornography. The authors conducted a qualitative analysis of the images collected by the offenders using the COPINE scale. The results showed that 50% of the offenders (45%) collected Level 9 images, 5% collected Level 10 images, and 45% collected Level 3 images. The offenders collected erotica (Level 3) images, and 3% collected explicit sex images. The results of the study showed that 72% of the offenders either did not collect child pornography images was unknown, 28% of the offenders collected child pornography images as indicated by the COPINE scale.

In 2002, the COPINE scale was used in the sentencing guidelines for child pornography in Wales. *Oliver and others*, the Court of Appeal decided that the sentence for a child pornography offense should be based on the level of the offender's involvement and the extent of the offender's involvement in the offense (Oliver et al. 2003). Based on the COPINE classification system, the offense was defined in the *Oliver* image description as follows: (1) posing with no sexual activity, (2) sexual activity with children, (3) adult and child non-penetrative sexual activity, and (5) sa-

in children. In addition, the sexual nature of nakedness (e.g., category (Level 6) in the COPINE scale, regardless of the level of child victimization with current legal age 5 may or may not be considered child abuse due to the COPINE Level 6, images are more severe than those of the minor. Current law defines a minor as

and it is illegal to possess, and 10 of the COPINE scale. The level of victimization is determined by the interaction between the victim and the offender, including psychological abuse, mutual and self-harm (Frei et al., 2001, 101), sexual assault category (Level 9), gross sexual touching. Level 9 (gross sexual touching) is sexually assaulting a child. Finally, Level 10 (sadistic/bestiality) "tied, bound, beaten, or (2) images of a child in pain" or (2) images of a child in pain (Taylor et al. 2001). The COPINE scale (2001) is the best descriptor of child pornography images available. The level of victimization of child pornography images should be assessed relative to the age and quality of the offender and the victim in child pornography.

For instance, the collection may reveal the offender's sexual interest with children or level of addiction or obsession with the Internet. In addition, the presence of novel images may indicate the offender's ability to network on the Internet. In essence, the more novel the images, the more involved the offender may be in the Internet child pornography rings. Finally, younger children are more likely to be the victims of child pornography because they are easier to control and manipulate, and research indicates the age of children involved in pornography is decreasing (Taylor 1999). Overall, the level of severity within each category of the COPINE continuum may differ depending on these three additional factors.

The Courts and COPINE

The COPINE classification system has influenced research on this topic as well as legislative decisions regarding the sentencing of child pornography offenders. For instance, Frei, Erenay, Dittmann, and Graf (2005) gathered data on 33 male child pornography offenders in Switzerland who were identified and arrested by law enforcement for using the Internet child pornography company, "Landslide Production Inc," which required the clients to provide identifiable information. The authors conducted a qualitative analysis of the pornographic material collected by the offenders using the COPINE classification system. Almost half of the offenders (45%) collected Level 9 images, or gross assault, and 27% of the offenders collected Level 10 images or "sadistic/bestiality" pictures. 9% of the offenders collected erotica (Level 3) images, 3% collected erotic posing (Level 5) images, and 3% collected explicit sexual assault (Level 7) images. Finally, 12% of the offenders either did not collect any child pornography, or the level of the child pornography images was unknown due to lack of data. Thus, the majority (72%) of the offenders collected images, which depicted greater levels of child victimization as indicated by the COPINE classification scale (Frei et al. 2005).

In 2002, the COPINE scale was adopted and modified into England and Wales' sentencing guidelines for child pornography related offenses. In *R v. Oliver and others*, the Court of Appeal determined the seriousness of a child pornography offense should be based on the "nature of the material involved and the extent of the offender's involvement with it" (*R v. Oliver and others* 2003). Based on the COPINE classification system, the "nature of the material" was defined in the Oliver image description scale as five categories: (1) erotic posing with no sexual activity, (2) sexual activities involving a child or children, (3) adult and child non-penetrative sexual activity, (4) adult and child penetrative sexual activity, and (5) sadism or bestiality (Akdeniz 2008). Lev-

which involve less sexual victimization, description scale. Sentencing guidelines, which assess quantity) of the images seized in child Oliver image description scale (Akdeniz 2008). Guidelines take into account the various on, distribution, or production) as well or computer-generated victim. In contrast to computer-generated images, various offense (Akdeniz 2008). Taking these guidelines may suggest a punishment sentence. However, as indicated by merely "rules of thumb" for the courts to power to contemplate other aggravating the images in a public domain of the Oliver guidelines further clarified the Oliver guidelines either an exact or representative count of the Oliver image description scale (*R v. ...*) derived from questions regarding the definition of Oliver guidelines (Akdeniz 2008). British Columbia, Canada, adopted a similar description scale for categorizing the images (see Table 1). According to the adopting images were meant to act as a deterrent experienced by the child in the images and nomenclature in which the levels of victimization, the court documents do not use the E scale or U.K.'s Oliver images description

System for Classifying Images Seized in Child Pornography-Related Cases

Material including nudity characteristic demonstrates a sexual purpose. Results between adult and child, child and child, and results involving adults

Currently, the United States does not utilize the COPINE scale, or any similar system, in the federal courts. However, the United States Sentencing Commission (U.S.S.C.) developed sentencing guidelines for offenses related to the sexual exploitation of a minor. Specifically, harsher sentences are implemented if the offense involves "material that portrays sadistic or masochistic conduct or other depictions of violence" (U.S.S.C. 2009). In addition, the guidelines recommend harsher sentences for offenses involving collections with a large quantity of images with 10–149 images at the lower end of the spectrum and more than 600 images at the polar end (2009). Overall, the current federal sentencing guidelines in the United States focus on violent images of child sexual victimization and the total number of images in the offender's collection.

A Hypothetical Case Study

In order to better understand the classification system developed by Taylor et al. (2001), we created a hypothetical collection of images to clarify the various levels of the continuum. The doll images used for this case study were obtained from an actual law enforcement case in which the defendant was accused of child molestation, and during the investigation, hundreds of hard-copy images were discovered of dolls in various degrees of nakedness. The original case file was provided to the author by the investigating detective with direct orders to use the materials for educational and teaching purposes. The possession of child pornography by academics for the purpose of research is illegal in the United States by federal law. Thus, the hypothetical collection includes both non-child pornography images obtained via the Internet as well as the doll images obtained from a law enforcement case.

To set up the scenario, the reader is to assume the collection of images was obtained during a search of a suspect's computer, who was accused of possessing and distributing child pornography. As shown in the Box 1 (from left to right), the collection contains the following images:

- the Coppertone girl, a famous ad for an American sunscreen;
- a doll with her arms raised above her head, which reveals her underpants;
- Olympia Nelson, then at the age of six, photographed nude by her mother, which appeared on the cover of an Australian art magazine (Marks, 2008);
- a young girl with her dress pulled down, which reveals her undergarments;
- a doll's genitals; and
- two young girls on the beach in bikinis.

The images in Figure 1 will be discussed in the hypothetical order they might appear based on the COPINE's continuum of increased sexual victimization.

Figure 1. A Hypothetical Collection of Images



Using COPINE's scale, the Coppertone ad is an excellent example of the Level 1 or indicative category. Despite the girl's partial nudity, the image of the Coppertone girl ad is clearly innocent and non-pornographic in nature. Therefore, this image would not be considered illegal by most jurisdictions in view of the fact that it was obtained from a legitimate commercial source. For instance, this type of image would not fall into a category according to the U.K.'s Oliver Image Description Scale. In addition, it would most likely be labeled as a Level 1 image in the Canadian courts, which encompasses images not subject to criminal sanctions (Akdeniz 2008). However, as suggested by Taylor et al. (2001), these types of images should not be ignored by investigators, for the "context or organization of pictures by the collector [may] indicate inappropriateness" (p. 101).

The image of Olympia Nelson, whose nude photograph appeared on the cover of an art magazine, is more controversial than the Coppertone girl. Recently, this photograph sparked controversy as to the distinction between "art" and child pornography (Marks 2008). Although society continues to debate this fine line between legal and illegal, this image is an excellent illustration of the Level 2 or nudist category according to COPINE. In this hypothetical collection, such an image would be labeled a Level 2 because it is from a legitimate, verified source, an art magazine. In most instances, this image would not apply to the U.K.'s Oliver scale, and it would be labeled a Level 1 by Canadian courts.

Next, the image of the two girls on the beach becomes more difficult to classify according to the COPINE continuum. Assuming the image is from a legitimate source, such as the collector's family album, the image would be considered a Level 1 since the girls are semi-naked (wearing bikinis) at an appropriate setting (the beach). However, if this picture was not from the collector's family album, but was instead secretly taken of the two girls while they were

playing at the beach. Thus, the investigator's family album or cover of COPINE's scale. In amount or context of the image, the collector would understand the collection.

Investigators would pull the image above her head as a provocative manner. This category is not a child sexual image. Although, the image is not a child sexual image, the image is not a child sexual image. In this context, and organization of the image, the image is not a child sexual image.

As shown in Figure 1, the image of the girl pulled down would be a Level 1 image. The girl is depicted in a provocative manner. The image is not a child sexual image. In the U.K. with no sexual activity, the image may be labeled as a Level 1 image. In the Canadian context, the image is not a child sexual image.

Lastly, the image of the two girls on the beach becomes more difficult to classify according to the COPINE continuum. Assuming the image is from a legitimate source, such as the collector's family album, the image would be considered a Level 1 since the girls are semi-naked (wearing bikinis) at an appropriate setting (the beach). However, if this picture was not from the collector's family album, but was instead secretly taken of the two girls while they were

Criticism

Overall, the sentences for child sexual images in the U.K. and Canada, based on the content of the images, are harsher sentences for child sexual images within a collection.

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playing at the beach, the image would be categorized as a Level 3 (erotica). Thus, the investigators would have to determine the source of the image (i.e., family album or covertly taken) in order to accurately classify the image using COPINE's scale. In addition, investigators should once again consider the amount or context of other images, which are of a similar nature, in order to understand the collector's intent of possessing the innocent images.

Investigators would probably label the image of the doll raising her hands above her head as a Level 4 (posing). She appears to be posed in a non-provocative manner although her underwear is slightly revealed. In addition, this category is not concerned with the degree of nakedness of the child in the image. Although, this image would not be considered illegal in most jurisdictions, Taylor et al. (2001) suggest investigators should be aware of the "amount, context, and organization" of the images, which may suggest the collector has a sexual interest in children (p. 101).

As shown in Figure 1, the image of the partially nude girl with her dress pulled down would best be labeled as a Level 5 (erotic posing) using COPINE's scale. The girl is deliberately posed in a sexualized manner since her dress has been pulled down around her ankles, which reveals her undergarments. Again, this image may or may not be considered a chargeable offense in most jurisdictions. In the U.K., this image may be identified as a Level 1 (erotic posing with no sexual activity) according to the Oliver guidelines. However, this image may be labeled as a Level 2 (material demonstrates sexual purpose) according to the Canadian sentencing guidelines.

Lastly, the image focusing on the doll's genitals would be an example of a Level 6 (explicit erotic posing), since the genital area is clearly emphasized in this image, and no sexual activity is apparent (e.g., touching, masturbation). Images identified at this level are more likely to be considered illegal depending on the age of the minor. Based on the Oliver scale, this image would most likely be labeled as a Level 1, whereas it would fall under the Level 2 category according to the Canadian guidelines.

Criticisms of Court Image Classifications

Overall, the sentencing guidelines in the United States, England and Wales, and Canada, base sentencing decisions on the *quantity* of images as well as the *content* of the images in the collection. More specifically, the guidelines recommend harsher sentences for collections that include more violent images (e.g., sadism). The COPINE continuum was originally developed as a way of discriminating images within a collection by identifying the level of sexual victimization. In

addition, it offered a “means of judging severity within the broad offense of possession” while providing a “basis on which systemic picture qualities may be related to offender behavior” (Taylor et al. 2001). For example, utilizing a classification system allows researchers to better understand the trends in child pornography collections; Taylor (1999) suggests the children in child pornography images are becoming younger. In other words, newer images of child pornography feature younger children, which may be related to the imbalance of power between adults and young children (Taylor and Quayle 2003).

The authors’ original intention of “judging severity” has clearly been adopted by the courts to mean that collectors with more violent images, or images at the higher levels of COPINE, should receive harsher sentences within their child pornography related offenses. The courts’ rationalization for the increased punishment is the belief that the *types* of images and *size* of the collection must be reflective of the offender’s behavior or personality. First, collections including more violent images may be related to more violent offenders or at least offenders who are at the greatest risk of recidivism. In addition, the sentencing guidelines appear to place some of the blame on the possessors of child pornography because they are fueling a commercial industry; if there were no demand for the sadistic images, there would be no need to produce them. Overall, the sentencing guidelines suggest possessors of child pornography should receive harsher sentences for being a part of this child pornography supply-demand chain.

However, research suggests there is no evidence to support the enhancement of sentences because more violent collections reflect more violent offenders (Beech, Elliott, Birgden, and Findlater 2008; Friendman and Supler 2008; Quayle 2008). According to Friedman and Supler (2008), there is a lack of research or empirical validation for the sentencing guidelines implemented in the United States. That is to say, there is no evidence that collections including more violent images should act as an aggravating factor when determining offender risk for recidivism (Beech et al. 2008).

Secondly, harsher sentences are also recommended for offenses involving larger collections of images. Specifically, the current U.S. sentencing guidelines suggest increasing the base level for offenses involving large collections of images with 10–149 images at the lower end of the spectrum and more than 600 images at the polar end (c.f., U.S.S.C. 2009). However, Basbaum (2010) argues these sentence enhancements should be amended in order to “incorporate a realistic understanding of how file-sharing works and [how] evolving technology permits defendants to download massive numbers of images with little effort or even intent” (3–4). The number of images and use of electronic means for distribution may not reflect the offender’s risk for recidivism or level

of dangerousness toward children. Technological advances have impacted the prevalence of child pornography, which is readily available compared to the pre-Internet era. A child pornography consumer may be a child pornography user who had a more difficult time accessing materials (c.f., Hessick 2010). Overall, “a decrease in the availability of child pornography images is not so much because of the difficulty of child pornography images not so much simply because it is easy to do so” (Basbaum 2010).

Currently, the sentencing guidelines have been amended in response to the increased availability of child pornography (Basbaum 2010; Friendman and Supler 2008). Sentencing should be conducted in order to better understand the behavior of offenders and their collections. However, if the sentencing guidelines are to punish offenders because they have more violent images, then it may be appropriate to consider the severity of the image. After all, as the images become more violent, the offender is more exposed to emotional or psychological harm. In addition, the harsher sentences require the offender to take some responsibility for the harm caused by the higher degrees of sexual victimization. Commented by the United States, United Kingdom, and Canada, it is appropriate if they are solely focusing on the level of harm caused (Beech et al. 2008; Taylor and Quayle 2003).

Classification System for Child Pornography

The United States judicial system is currently based on the COPINE scale. By comparing child pornography related offenses, researchers are studying trends in the content as well as across different countries. In addition, a detailed classification system is being developed through the legislative process from the initial COPINE scale. Based on the previous scales and research, a similar classification system, which takes into account the individuals involved at each level, as well as the individuals involved at each level, a modified scale will ignite academic research and policy decisions regarding the content of images collected by law enforcement. Analyzing the content of images collected by law enforcement will help inform policy decisions regarding the

of dangerousness toward children. Technological advances have clearly impacted the prevalence of child pornography by making it easier and more readily available compared to the pre-Internet era. Consequently, the post-Internet child pornography consumer may be different from the pre-Internet child pornography user who had a more difficult and risky time obtaining the materials (c.f., Hessick 2010). Overall, "a defendant [may] download large numbers of child pornography images not so much out of a specific desire ... but simply because it is easy to do so" (Basbaum 2010, 21).

Currently, the sentencing guidelines reflect political agendas and societal panic in response to the increased availability of Internet child pornography (Akdenez 2008; Basbaum 2010; Friedman and Supler 2008). More research needs to be conducted in order to better understand the relationship between the offenders and their collections. However, if the purpose of the sentencing guidelines is to punish offenders because they are fueling a commercial industry, then it may be appropriate to consider the level of child victimization in the image. After all, as the images become more violent, the child is not only being exposed to emotional or psychological abuse but physiological abuse as well. In addition, the harsher sentences require that the possessor and distributor of the images take some responsibility for the increased demand in images with higher degrees of sexual victimization. Overall, the various guidelines implemented by the United States, United Kingdom, and Canada may be appropriate if they are solely focusing on the level of harm experienced by the child (Beech et al. 2008; Taylor and Quayle 2003).

Classification System for the United States

The United States judicial system is in dire need of an image classification scale based on the COPINE scale. By classifying the images seized in child pornography related offenses, research and empirical data may be generated regarding trends in the content as well as comparisons between cases and countries. In addition, a detailed classification system may assist the various stages of the legislative process from the initial investigation to the sentencing procedures. Based on the previous scales adopted by the U.K. and Canada, we developed a similar classification system, which includes a description and example as well as the individuals involved at each level (see Table 2). We hope this modified scale will ignite academic research and interest for qualitatively analyzing the content of images collected by offenders in the United States. First, new trends in the child pornography market may be identified. In addition, informed policy decisions regarding the level of severity in the offender's ac-

tions and behaviors along with the psychological perspectives of the offender's sexual interest in the child may be better understood.

Technical Investigations

Prior to an offender coming before the court system, investigators must identify evidence and determine that, in fact, an offence has been committed. Investigating online criminal behavior in general is somewhat problematic (Furnell 2002; Rogers 2005; Rogers, Seigfried, and Tidke 2006; Stambaugh et al. 2001). Crimes involving technology and technical advances such as the Internet and the World Wide Web require that investigators, be they law enforcement, military or private sector, have a strong understanding of the underlying structure of networks and networking protocols, operating systems, file systems, storage devices (e.g., hard drives, thumb drives, DVDs) and software/ application development (Rogers and Seigfried, 2004). Each of these areas is a specialization in and of itself, and to assume that investigators can be experts in all of these is unrealistic.

Apart from the challenge of having properly trained investigators, the fact that technology evolves and changes at an incredible rate causes investigators and forensic tool developers to make constant changes to their methods, techniques and applications. Each time an update is made to an operating system (e.g., Microsoft Windows 7, Apple Snow Leopard), the location of potential evidence, encryption capabilities and new privacy enhancements (e.g., over writing of web browser history files, shredding of deleted files) can result in the tool or investigator missing crucial evidence or misinterpreting the context of any evidence found (Rogers and Leshney 2009; Rogers and Seigfried 2004; Slade 2004).

Size limitations of this chapter preclude us from conducting an in depth discussion about all possible investigative strategies such as online sting operations, across all platforms.² Instead we focus on investigations involving Microsoft Windows and its NTFS file system. The NTFS files system is the most widely used file system in the world and is the default file system found on Windows XP, VISTA and Windows 7. In order to assist investigators, several offender investigative profiles have been developed. These include the Lanning FBI model, the Krone model and the Rogers and Seigfried-Spellar Hybrid model (Rogers and Seigfried-Spellar 2009).

2. Please see the following for more information (Ferraro and Casey 2005; Hagy 2007; Hart 2004).

The model developed by Lanning (2001) for pedophilic offenders is based on a biosocial and preferential sexual orientation model. The model of the offender is placed on a continuum of Physiological Sexual needs and Deviant Sexual needs (Lanning 2001). This model should be thought of in terms of profiles for investigators and not for use in offender profiles.

Lanning's model states that offenders have preferences or paraphilia for graphic pictures of children (Lanning 2001). He further subdivided offenders into three categories: Morally Indiscriminate, characterized by low self-esteem and a need for partners to offset their inability to form intimate relationships (Lanning 2001).

Morally indiscriminate offenders are characterized by "low self-esteem and a need for partners to offset their inability to form intimate relationships" (Lanning 2001, 26). The abuse directed at spouses, children, and often opportunistic but the primary victims of this type of offender include children. Offenders can be suffering from mental retardation, senility, or other personality disorders. Relationships with children can be characterized by impulsiveness.

Lanning evolved his model of offender profiles (see Table 2). For those offenders who use computer technology, two additional profiles were added: "Normal" — adolescent/adult offenders who used computers to search for pornography and makes easy money from computer technology online (Lanning 2001).

Under the category of Preferential Sexual Interests, two additional types: "Diversified" and "Deviant sexual interests, but not pedophilic" as the sexually indiscriminate offenders who deal with potentially illegal but