# The History of Child Pornography on the Internet

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The Internet is a network of interconnected computers used primarily for commerce, communication, and information exchange. As of July 1998, the Internet consisted of nearly 37 million connected computers, and it is growing at a rate of 40% to 50% annually. Although commercial sites now dominate the information superhighway, some potholes mar the openness of the Internet's information exchange. The authors found a veritable explosion of gigabytes of pornographic material on the Internet when using several search engines or portals (Netscape, Internet Explorer, and so on). Some of these activities, especially those depicting the sexual exploitation of children, are both unsavory and illegal. Globally, governments, policing agencies, and commercial organizations have attempted with growing success to limit access to child pornography. To cope with the growing technological sophistication of childporn purveyors, greater interagency and international cooperation will be needed.

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C ociety has struggled to regulate pornographic ma-Oterials across the Internet. Distaste for pornography that exploits children has driven increased funding and hence, more effective use of technology by law enforcement agencies. However, diverse legal codes and poor coordination within and between nation-states, along with free speech disputes, hamper the attempts of agencies to control pornography. At the same time, recent advances in telecommunications have modified social judgments that depended on geographical location. The Internet gives us access to global information at ever-increasing speed and decreasing expense. A computer user may at one moment send e-mail or gain access to the National Library of Medicine, then follow those transactions a second later by electronically cruising down 42nd Street in New York City. Because the Net transcends traditional boundaries, computer users with modems and Internet access have become citizens of the world. They may now download sexually explicit information and graphics from Sweden into their living room in New Jersey. The catalyst for this electronic revolution has been the information superhighway.

Pornography can be generally defined as erotic depictions intended to provoke a sexual response. However, courts in Western democracies have generally ruled it protected speech, which is not illegal-with certain exceptions. In a landmark case, Miller v. California, the US Supreme Court defined obscene material as a work which, judged by contemporary community standards, appeals to a prurient interest, depicts sexual conduct in a patently offensive way, and taken as a whole, lacks serious literary, artistic, political, or scientific value (Sopinka, 1995). To be illegal in Canada, such material must combine both violence and explicit sex (Shallit, 1994). Table 1 lists the major search engines, along with the number of Websites identified by searches linked to key words. Alta Vista links over 11 million sites to the term 'sex,' Excite enumerates nearly 2 million sites identified with 'online sex games,' and both Alta Vista and Hot Bot link 1.52 million sites to the word 'fuck.' Child pornography is a special case, however; its subject matter abuses and exploits victims protected by international law: nonconsenting children. It is this key trait-the illegal victimization of identifiable minors-that sets child pornography apart from classes of material which could be labeled obscene or adult erotica.

#### The Internet

The origins of the Internet date from a series of studies in the early 1960s that envisioned a globally interconnected set of computers through which people could quickly access data and programs from any site. Many summary histories of the Internet cite a sup-

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Table 1		
Key Term	Search	Results

	Search Engine Used			
Key term	Alta Vista	Excite	Yahoo	Hot Bot
Sex	11,130,480	338,304	2,634	3,315,797
Sexual	1,992,415	143,505	1,560	1,139,830
Interactive sex games	1,150	1,124,838	19	17,160
Online sex games	884	1,983,632	27	43,277
Sex organ	1,945	121	144	910
Penis	1,196,590	27,587	114	258,276
Clitoris	312,600	6,843	1	57,856
Anus	330,320	6,302	379	62,347
Cum	3,898,680	79,254	124	1,367,877
Fuck	2,338,028	69,458	102	1,519,567
Child+sex+pix	813,840	719,204	37	4,272

posed need for a network of military computers that would survive a missile attack. For example, a widelyused textbook, Oz's *Management Information Systems* (1998), mistakenly claims,

In 1969, the U. S. Department of Defense's Advanced Research Projects Agency (ARPA) wanted to establish a communications network that would operate in case of a nuclear strike, as an alternative to telephone, radio, and television, all of which might quickly become nonfunctional in a military crisis (p. 174).

However, survivability during a nuclear attack was never part of the rationale for the Advanced Research Project Agency Net (ARPANET), according to an authoritative study of the Internet by Leiner and others (1998). The study says, "later work [emphasis added] on Internetting did emphasize robustness and survivability, including the capability to withstand losses of large portions of the underlying networks" (Leiner et al., 1998). In 1969, the ARPANET's first node was established at the University of California at Los Angeles (UCLA), and others soon followed at the Stanford Research Institute, the University of California at Santa Barbara (UCSB), and the University of Utah. Unfortunately, the large diversity of computer equipment and their idiosyncratic languages made communications between them a logistical nightmare. The next step toward establishing a successful network had to involve an agreement on a common set of protocols.

Like people in everyday life who start a conversation with a handshake or a hello and finish it with a goodbye, computer users must agree to speak a particular language at the same speed. From 1970 through the early 1980s, ARPA introduced a series of protocols that controlled the transfer of information packets throughout its own network or "Internet." With the creation of protocols that eventually came to be called the transmission control protocol/Internet protocol (TCP/IP); the term Internet came into common usage. The Internet now refers to a group of worldwide networked computers using TCP/IP for communications. Throughout the Internet's formative years, its designers insisted on maintaining principles with fateful implications for later free speech and pornography issues. A key concept of the Internet is that it was not designed for just one application, but as a general infrastructure wherein new applications could be conceived. In addition, there would be no global control at the operations level; no person or group would 'own' the Internet (Leiner et al., 1998).

The implementation of a standardized, non-restricted communication package that can accommodate myriad different computer systems has precipitated remarkable growth for the Internet. The backbone of the Internet includes high-capacity telephone links, fiberoptics, microwave channels, and satellites. Most interactions are based on the client-server model, where users' workstations (clients) gather information from larger, more powerful computers (servers). Although each constituent network is paid for and administered by the participating group, the backbone of the superhighway (i.e., accessibility to supercomputers and the long-haul communications line) was facilitated until recently by the National Science Foundation and other government agencies.

The emergence and growth of private, competitive, long-haul networks and resulting commercialization of the Net led directly to privatization of the Internet in April 1995. Given the recent emphasis by commercial ventures on the promotion of information services, the lifting of roadblocks has prompted a stampede of private investors, promoters, groups, and individuals onto the information superhighway. As of July 1998, according to a Network Wizards' Internet domain survey, the Internet included 36,739,000 connected computers in 242 countries and territories. A ratio of approximately 60% US-based hosts versus 40% non-US-based hosts continues to hold. The projected host figure for January 2000 is 60-70 million (Network Wizards, 1998).

Although the original cruisers of the information superhighway were academicians, today's Internet society has left that tradition behind. Internet participation now reflects the dominance of business. As of July 1998, the largest domain was \*.com, with 10.3 million hosts (constituting 28% of all hosts). The \*.net domain (19%) and \*.edu (12%) followed, with all-others occupying tiny slivers of the domain landscape (Network Wizards, 1998). The best type of connection to the Internet is a dedicated (permanent) one, requiring the use of large computers, routers of information, and leased telephone lines. Once quite expensive, these connections have become accessible not only to businesses, but to ordinary computer owners through Internet service providers (ISPs) such as America Online (AOL), which provide unlimited access for \$14.95 a month or less. Web pages and e-mail addresses are readily available at no charge. Very high-speed, highcapacity, name-brand computers, loaded with the latest operating system (90%+ are Windows), 3-D graphics, and ready for the Internet, can be purchased new for under \$500 US. Moreover, public institutions such as universities and libraries allow users to access the Net for free, though issues—whether or not to screen out sites purveying pornography—affect both the public and private sectors.

Internet growth is being fueled by the wealth of easily available information, along with ease of purchasing airline tickets, automobiles, computers, vacations, and other goods and services using a home computer. Among the most commonly used browsers or portals are Netscape, Microsoft's Internet Explorer, Yahoo, and Alta Vista. Some programs, such as Archie, act as zombies that perform monthly searches of all available sites for updated files. Since 1993, the World Wide Web (WWW) has replaced other modalities as the preferred Internet database. The Web allows global searches for information such as the lethal dosages of certain medications, how to murder somebody without leaving a trace, instructions on suicide methods, how to build an atomic bomb, how to get your boss in trouble, and the transfer of sexually explicit text and graphics.

## The Information Superhighway—With Potholes

Internet sites presently combine visual illustrations, often video, with sound. Hypermedia with nonlinear links allow the transposition of pictorial information, erotic text, and recorded messages. Virtual sex is already giving new meaning to application software. Access to pornography is no longer secretive, awkward, delicate, or expensive. For many users, the addition of computer intelligence to the search for pornographic material makes it sophisticated, glamorous, and socially acceptable.

Virtually every subject is addressed amid the countless bulletin boards or news groups available online. Some people may look for information on chess or gardening; others may indulge in foot fetishes or a subset of pornography with undeniable victims, child pornography. Some may seek personal interactions involving descriptions of what participants would do to each other if face to face. This exchange—dubbed *cybersex*—constitutes the ultimate sexual fantasy for many individuals. They may enjoy cybersex without the fear of STDs or pregnancy, not necessarily a bad thing for adults. They may also conceal physical limitations or avoid arrest. In the privacy of their homes, or even on company time, users may break taboos and let eroticism run rampant.

With chat room anonymity, cybersex habitués can choose what they want to be. A popular Net cartoon showing two dogs seated at a computer mocks a common fantasy: one says to the other, "The nice thing about this is that while I am typing, nobody really knows I am a dog." You can choose your fantasy lover, the woman or man of your dreams. With only the screen image and a (possibly fictitious) description to react to, the interactions between individuals become projections, reducing the data to a series of binary Rorschach blots placing no limits on fantasy. According to a new report by Datamonitor (1999), "Revenues from Consumer Online Content Publishing," in a realm where users have traditionally been unwilling to pay for content, they have year after year bought subscriptions to adult content; at times they have paid for content products such as adult movies. Datamonitor estimates that adult content accounts for 69% of the \$1.4 billion online content market. Information is now not only a means but an asset, a commodity by itself.

## Censorship and Child Pornography

The unique character of the Internet as an information conveyance, its global reach, and limiting factors such as access, equipment, and expertise-relative to radio, telephone, and television, for example-complicate issues related to control of child pornography. At the same time the US, as the birthplace of the Bill of Rights and the Internet, serves as "a model for other national Internet policies" (Human Rights Watch, 1996). These issues raise a number of questions: From a regulatory perspective, how does the Internet differ from other communications media? What concerns has the spread of Internet use provoked among governments and regulatory agencies? How should child pornography be distinguished from pornography and obscenity? For example, should proscriptions be predicated on distinctions between the kinds of subject portrayed, whether they are underage participants, immature-looking adults, morphed images, or constructs of their creators' imaginations? Does violence, coercion, or degradation distinguish allowable from sanctioned child pornography? What roles, if any, should the profit motive play in the regulation of Websites or Internet services? How has the growing primacy of commerce on the Web impacted issues of child pornography? Finally, do the issues raised by child pornography form a subset of pornography issues in general, demanding unique controls or solutions?

As such discussion indicates, the Internet is neither a broadcast nor a commercial medium like any other. It does not occupy scarce frequency bandwidth, like radio or television (which the Federal Communications Commission regulates), nor is it limited to a finite (if very large) number of channels, like cable television. It does not rely on portable, physical media like rental movies and videos (which local law enforcement agencies can monitor). Legal authorities do not clearly distinguish carriers from telephone companies, who bear no legal responsibility for content of voice transmission, or link them to print media, whose content is subject to libel and obscenity laws. But unlike radio and television, use of the Internet requires a computer, links to telephone lines or fiberoptic cable, and a high degree of literacy. These factors restrict its access, and hence its use, to those who are "primarily American or northern European, affluent, white, and male" (Human Rights Watch, 1996), a generalization that held true until recently. For the near future, then, American and European legal standards will not only shape definitions of pornography; their societies will also carry the major burden in its regulation or-in the instance of child pornography—its constraint.

The global spread of the Internet has led at least 20 countries to impose controls on the Internet—to limit the spread of either sexually explicit material or ideas considered dangerous, or both—by various means: limiting access to phone links, ISPs, or satellites; requiring ISP registration with the state; confining access to select groups such as business or universities; or demanding that browsers, providers, and public institutions screen sites with proscribed words or topics.

However, governments and regulators have been locked in a continuing struggle with the courts, Website operators, businesses, and ordinary citizens. Regulatory efforts have been countered by legislation protective of Internet openness, court decisions striking down censorship laws, and public outcries. In a few signal actions, the European Union (EU), an alliance of 15 nations, recognized that the Internet carries a large range of controversial materials. However, to encourage economic growth and speed European unification, the EU is betting on self-regulation by site operators, parental control, and international cooperation.

In the US and Canada, recent battles over Internet child pornography have veered sharply between punitive legislative action, spirited legal resistance, legislative reaction, and more resistance. In June 1997, the landmark Supreme Court ruling in *Reno v. ACLU* (American Civil Liberties Union) struck down the 1996 Communications Decency Act that sought to restrict access to online speech. This sweeping decision confirmed that the Internet is analogous to books, not broadcast, and is deserving of the highest First Amendment protection. In 1998, Congress reacted by passing the more narrowly written Child Online Protection Act,

aimed at commercial Websites rather than at all material online, including e-mail. A lawsuit filed by the ACLU and 15 other groups persuaded a federal judge to delay the law from taking effect (Mendels, 1999a). However, after a Federal appeals court upheld the law in February 1999, thus making it illegal to possess computer images that look like children engaged in sex (National Desk, 1999), another federal judge again blocked the law (Mendels, 1999b). Almost simultaneously, the Canadian Reform Party pushed the government to quash a court ruling that made the possession of child pornography legal (Anderssen, 1999). Officials of the National Conference of State Legislatures and the US Internet Council agree that topping the list of bills before state legislatures in years to come will be bills intended to protect children from adult material and online predators. However, "Civil libertarians have won virtually every court challenge of efforts to limit minors' access to the dark side of the Internet" (Clausing, 1999, p. 15). If recent history is any guide, North American conflicts within and between legislatures and the courts are likely to continue, even intensify.

Interestingly, diverse regulators have blocked or closed down sites because key information was, or was not, included. In 1995, AOL blocked access to sites that contained the word 'breast,' inadvertently preventing breast cancer victims from exchanging information or creating profiles online. AOL relented under pressure from subscribers and the media. In 1996, the Finnish government shut down the site of an anonymous remailer for allegedly conveying child pornography. However, the remailer served the Samaritans, a British group that counsels people contemplating suicide. The group says it receives about 100 computer contacts per week, about 40% of whom want to remain anonymous (Huuhtanen, 1996). Whether narrowly or broadly targeted, then, regulatory proscriptions have often had unintended consequences and unanticipated victims. The Samaritans' complaints point up the necessity for careful consideration in advance of government actions.

In attempts to facilitate prosecution of child pornographers, recent legislative and legal actions have tried to redefine the scope and meaning of child pornography. Before the US Congress passed the 1996 Child Pornography Prevention Act (struck down a year later by the Supreme Court), the term *child pornography* applied to depictions of actual children under 18 years old. Thus, in one sense, child pornography has been more narrowly defined than obscenity; its focus on depictions of underage subjects excluded paintings, computer images, verbal descriptions, computer-generated morphings, and simulations by immature-looking adults. Moreover, Canadian case law further stipulates that depictions qualify as child pornography only if they involve both graphic depictions and violence, thereby avoiding free speech complications by emphasizing psychological and physical harm to children. In another sense, however, the US definition of child pornography broadens the obscenity test: artistic value is no defense, and the images do not have to be offensive.

Efforts to either link child pornography to, or distinguish it from, obscenity have been further clouded by issues of intent. Prosecutors have attacked possessors or purveyors of child pornography not only for greed, but also for lack of it. Whether the purveyors are motivated primarily by profit motives or care nothing for profit-trafficking in child pornography entirely for 'perverse pleasure," as one prosecutor put it-both motives have been termed reprehensible. When Texas authorities shut down a Fort Worth-based Website for distributing child pornography, they estimated that the site took in at least \$500,000 a month (Jones, 1997). Yet in a New York case, then-State Attorney General Dennis Vacco attacked alleged child pornographers for providing their depictions free: "In each instance, we never had to pay a nickel for the pictures, so these people were not in it for profit but because they derived some perverse pleasure from it" (Toy, 1998).

At the same time, defenders of Internet users present diametrically opposed cases regarding the effects of pornography. They have argued contradictorily that pornography must be protected because its negative effects are nil, or because its positive effects are great. One critic claims that pornography, if not benign, is harmless: "There is no consensus about whether pornography can be demonstrated to be harmful to women" or, presumably, to other viewers (Shallit, 1994). Without citing evidence, discussion on Pedowatch's Website reflects Plato's anticipation of Aristotle's theory of catharsis: rather than acting as a "harmless outlet" for repressed pedophilic urges, the trading of preteen erotica has for many become a hobby that encourages the creation of more such media-more child porn. Rather than "releasing" these pent-up desires, such depictions are said to generally inflame them (Pedowatch, 1998). On the other hand, some groups such as Stop Prisoner Rape and Human Rights Watch demand protection for messages and images that fit the Canadian definition of child pornography exactly. They claim a right to transmit graphic accounts of human rights abuses, including sexual assaults on children. They believe that by educating the public, these accounts prevent future abuses.

Commercial requirements for secure Internet communications—to protect company secrets or customer credit card numbers, for example—have also thwarted or rolled back regulatory incursions on the Internet, in both advanced and less sophisticated economies. The US government's demand for encryption codes has come under persistent attack, and the limits on encryption code export have been progressively relaxed, with control shifted under Congressional pressure from the more rigorous State Department review to the more lenient Commerce Department. The EU has asked national governments to refrain from taking radical legal steps, citing the Internet's "crucial role in economic growth" (Giussani, 1996). Elsewhere, Singapore disclosed in 1994 that it had searched individual accounts to try to identify those who had downloaded sexually explicit material. After businesses expressed alarm about the security of their information, authorities said they would refrain from conducting such searches in the future. And in Saudi Arabia, existing pornography laws apply to the Internet, but loopholes are available; large foreign companies are increasingly offering their unmonitored Internet access to Saudi business acquaintances, and commercial members of the GulfNet are also free from scrutiny (Human Rights Watch, 1996).

Finally, child pornography can be distinguished from protected pornography and proscribed obscenity by laws identifying real children as the subjects of graphic depictions, and as the victims of purveyors. In a speech offering to amend the now-vacated Child Pornography Prevention Act of 1996, Vermont Sen. Patrick Leahy pointed to an ample body of existing US law enabling the prosecution of

child pornographers, purveyors of obscene materials or child sex molesters. These people can already be prosecuted and should be prosecuted under longstanding Federal criminal laws that prevent the distribution over computer networks of obscene and other pornographic materials harmful to minors, under 18 U.S.C. sections 1465, 2252 and 2423(a); that prohibit the illegal solicitation of a minor by way of a computer network, under 18 U.S.C. section 2252; and that bar the illegal luring of a minor into sexual activity through computer conversations, under 18 U.S.C. section 2423(b). (Leahy, 1996).

To enforce laws across state and national boundaries, the US Customs Bureau maintains an International Child Pornography Investigation and Coordination Center with a Website at www.customs.ustreas.gov/ enforce/childprn.htm. The site asserts that

The presence of child pornography on the INTERNET and on BBS services is a disturbing and growing phenomenon. With your help, however, we can reverse this trend and eliminate this type of material from the information superhighway and bring the people responsible for its production and distribution to justice.

The Center invites informants to contact the Bureau with information on child pornographers through a toll-free number, 1-800-BE-ALERT, through their In-

ternet site at <http://www.customs.ustreas.gov>, or by contacting the International Child Pornography Investigation and Coordination Center at <icpicc@customs.treas.gov>. The Bureau focuses on victims of child pornography by emphasizing its opposition to the soliciting and molestation of children. Although individual states are barred from attacking child pornography beyond their borders, the US Customs Bureau operates nationally and also cooperates with authorities in Western Europe and Southeast Asia (where most child pornography originates). In keeping with the Bureau's emphasis on fighting exploitation and sexual victimization of children, their Website includes a toll-free number for the National Center for Missing and Exploited Children, 1-800-843-5678.

According to *The Christian Science Monitor*, the Department of Justice, which prosecuted about 100 cases of child pornography yearly in the early 1990s, now averages more than 300 cases per year largely because of the growth of law enforcement agencies. The US Customs Bureau will soon double the number of agents staffing its Cybersmuggling Group, and the Federal Bureau of Investigation (FBI) now has about 157 agents, plus support staff, surfing the Internet (Scherer, 1998).

Even with a clear definition of child pornography in countries such as the US and Canada, and with more personnel, authorities are hampered by difficulties in determining the age and identity of subjects of alleged child pornography, and enforcing laws across jurisdictional boundaries. Pedowatch, a site established to monitor pedophilia on the Internet, has criticized the Customs Bureau as "very unresponsive." The Bureau not only takes no action on reports of child pornography activity, says Pedowatch; they fail to even acknowledge receipt of such information (pedowatch.org/index.). While the authorities are armed with sophisticated equipment used to trace the origin of sites and recover deleted files from seized computers, the same equipment is available to pornographers. In one case, a global organization used KGB (the acronym for the Soviet Union's foreign intelligence service) encryption technology to try to avoid detection (Scherer, 1998).

# Conclusions

The supply of child pornography has apparently matched its undeniably powerful demand. A mid-1999 search entered in AltaVista for the term 'childsex' yielded 149,950 sites, while the term 'kiddieporn' turned up 23,280 Web pages. Yet David Kerr, Chief Executive of the Internet Watch Foundation (IWF), says most Websites are legal. The new frontier is chat rooms, where information exchanges occur in real time, thus avoiding the process of getting material reported, looked at, and investigated (Nuttall, 1999). One organization, Pedowatch—funded and run by volunteers—estimates that around 1,500 people use Relay Chat 'Undernet' services daily to trade child pornography (BBC Online News, 1998).

Moreover, the reach of authorities within national borders has been frustrated by the global scope of pedophile networks. Pedophiles use anonymous e-mail addresses, send messages through remailing services that strip them of any identifying features, or encrypt material before sending it. Material read in one country can originate overseas, and messages between ring members can be sent via foreign ISPs. International legislation has also left a gaping hole; according to Interpol, 80% of all child pornography on the Internet produced by commercial operations (as opposed to small pedophile rings) comes from Japan, where legislative oversight has been lax (Richardson, 1999).

However, authorities have achieved promising results from legal crackdowns on purveyors and possessors of child pornography, increasing interagency cooperation within and between countries, and a sharper focus on protecting child victims from abuse and exploitation-while avoiding incursions on freedom of expression. In 1997, German authorities founded the world's first team of cyber cops to focus directly on Internet pornography. The UK recently established the British National Crime Squad for the same purpose. In the US, Congress gave the FBI \$10 million to double the staff of Innocent Images, its undercover operation. And the Department of Justice, using a new grant from Congress, recently gave \$2.4 million to 10 police departments to crack down on the crime. The number of task forces will almost double in the near future (Scherer, 1998).

The most pressing need is for an international legal framework to tackle child pornography. In late April 1999, the Japanese government introduced legislation to ban the country's "Lolita trade" (Richardson, 1999). Experts recently gathered in Paris for a United Nations Educational, Scientific, and Cultural Organization (UNESCO) conference to coordinate an international offensive against child pornography on the Internet. They complained that not all countries have legislation banning the trade in indecent pictures of children. However, in one often-cited instance of interagency effectiveness, the Operation Cathedral raids against child porn on the Net, police in 12 countries (including US Customs) cooperated across borders. In a September 1998 operation coordinated from the UK, authorities arrested about 100 people suspected of running an Internet pedophile ring known as the Wonderland Club (BBC Online News, 1998). Hotlines

are being set up around the world, leading to the networking of information and reports reaching the police in the appropriate countries faster.

However, there is often inadequate cooperation between various countries, law enforcement agencies, and fragmented jurisdictions. North American and European countries, along with Japan (perhaps under UNESCO auspices), must act to restrain fastmoving global trafficking in child pornography. They must focus their efforts on ending the exploitation of children in the production of pornography, as opposed to banning the production and consumption of material deemed offensive or titillating to adults. Emphasizing the protection of children below the age of consent accords with legal codes internationally, lessens concerns about privacy, and averts free speech issues. In addition, cooperating nations need a framework for sharing technology, expertise, and information; gaining the cooperation of telecommunications companies and ISPs in detecting and halting the downloading of illegal child pornography in real time; and assisting prosecutors in jurisdictions where purveyors' storage devices are located. Significant new funding, a clear mission, and sharing of personnel and expertise would help cooperating agencies sharply limit (if not eliminate) the spread of child pornography and with it, the abuse of children caught up in its production.

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