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Arrests for Child Pornography Production: Data at Two Time Points From a National Sample of U.S. Law Enforcement Agencies

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Abstract

This study collected information on arrests for child pornography (CP) production at two points (2000–2001 and 2006) from a national sample of more than 2,500 law enforcement agencies. In addition to providing descriptive data about an understudied crime, the authors examined whether trends in arrests suggested increasing CP production, shifts in victim populations, and challenges to law enforcement. Arrests for CP production more than doubled from an estimated 402 in 2000–2001 to an estimated 859 in 2006. Findings suggest the increase was related to increased law enforcement activity rather than to growth in the population of CP producers. Adolescent victims increased, but there was no increase in the proportion of arrest cases involving very young victims or violent images. Producers distributed images in 23% of arrest cases, a proportion that did not change over time. This suggests that much CP production may be primarily for private use. Proactive law enforcement operations increased, as did other features consistent with a robust law enforcement response.

Keywords

Internet, sexual abuse, pornography, child victims, adult sex offenders, adolescent victims

The Internet and related technologies have made child pornography (CP) easily accessible and increasingly pervasive (Beech, Elliott, Birgden, & Findlater, 2008; Jenkins, 2009; Quayle, 2009; Taylor & Quayle, 2006; Wortley, 2009), and there has been substantial growth in arrests and prosecutions for CP possession (Federal Bureau of Investigation, 2007; United States Department of Justice, 2007, 2008). This has led criminal justice professionals and child advocates to express concern that the growth in CP possession may result in increasing *production* of CP. Commentators have suggested several possible dynamics through which this could occur. One is that more sexual abusers may photograph victims and distribute the images online in response to potential demands for new images by CP consumers (A. Carr, 2009; J. Carr, 2003; Oosterbaan, 2009). Another is that more CP producers may abuse and photograph very young children or perpetrate and photograph more violent abuse due to possible demands by consumers for more varied, novel, and extreme images (Beech et al., 2008; Frieden, 2006; Michel & Schulman, 2009; Oosterbaan, 2009). A third possible dynamic is an increase in adolescent victims due to phenomena such as online offenders enticing sexually explicit photographs from young adolescents (Eichenwald, 2005) and "sexting" by minors, which can involve minors creating sexual images that qualify as CP under applicable criminal statutes (Inbar, 2009; Leary, 2008; Wolak & Finkelhor, 2011). Commentators have also suggested that law enforcement is having difficulty mounting an effective response to online CP (Jenkins, 2009). However, there has been little empirical data available to evaluate such issues, or even to describe the phenomenon of CP production.

This article uses data gathered from law enforcement about arrests for CP production at two points in time (July 2000–June 2001 and 2006). It provides detailed information on CP production (e.g., characteristics of offenders and victims, dynamics of cases, nature of images produced) based on a national sample of arrest cases and analyzes trends in these cases during a period of heightened concern by law enforcement about sexual exploitation of youth and CP production and distribution. While the data do not provide information about the online CP market or whether such a market may motivate CP producers to certain actions, we are able to examine important questions about whether arrest data show growth in particular aspects of CP production. Specifically, the goals of the article were to address the following research questions:

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1. Do trends in arrests for CP production suggest that CP production is increasing?
2. Do trend data about arrest cases suggest that producers are photographing younger victims or creating more violent images?
3. Do such data suggest an increase in adolescent victims of CP production?
4. Do trend data about the distribution of CP by arrested CP producers suggest more dissemination of images?
5. What do trends in arrests for CP production suggest about the effectiveness of the law enforcement response to such crimes?

What Kinds of Images Constitute CP?

The U.S. federal statutes that criminalize CP define "child" as age 17 or younger, and CP as the "visual depiction ... of sexually explicit conduct" (18 USC Section 2256, 2003). The statute states that sexually explicit conduct includes sexual acts such as intercourse, bestiality, and masturbation, as well as "lascivious exhibition of the genitals or pubic area." The U.S. Supreme Court has defined "lascivious exhibition" broadly to include images of minors that focus on the genitals of children even when wearing clothing (US v. Knox, 1994). Because of this ruling, sexually suggestive pictures that focus on the genitals of minors wearing, for example, swim suits or underpants can be CP. Also, because the federal statute defines child to include teenagers who are 16 and 17, youth who can legally consent to sexual intercourse (age 16 in most states) may not consent to being photographed in sexually explicit poses. The majority of states mirror federal law by defining "child" as age 17 or younger, although there is some variation (Wolak, Finkelhor, & Mitchell, 2005a). These legal decisions and statutory proscriptions mean that images do not have to depict child sexual abuse, nudity, or children under the age of consent to qualify as CP.

Dynamics of CP Production

Empirical information about CP production is scarce. Some knowledge has been derived from the content of images collected in databases by law enforcement agencies or found in the possession of offenders arrested for CP possession. Based on these sources, it is clear that much of the CP found online graphically portrays children and adolescents being sexually abused. In 2008, 58% of online CP domains investigated by the European Internet Watch Foundation included images of children being sexually penetrated or subjected to sadism or bestiality (Internet Watch Foundation, 2009). In both 2000 and 2006, about 80% of offenders arrested in the United States for possessing CP downloaded from the Internet had images that showed penetrative child sexual abuse and more than 20% possessed images depicting violence, such as bondage, aggressive rape, or torture (Wolak et al., 2005a; Wolak, Finkelhor, & Mitchell, 2011).

While these descriptions of the content of online CP illuminate its exploitive nature, the few empirical reports about CP production indicate considerable diversity in ages of victims, circumstances of CP production, and motivations of offenders. Victims range from infants and toddlers to adolescents (Collins, 2007; Wolak, Finkelhor, & Mitchell, 2005b). Commercial production motivated by profit appears to account for a relatively small proportion of CP production in the United States (Collins, 2007). Most CP appears to be produced by child sexual abusers who know and have intimate access to specific victims (e.g., family or household members; acquaintances such as neighbors, family friends, baby sitters; Collins, 2007; Mitchell, Finkelhor, & Wolak, 2005; Wolak et al., 2005b). However, some CP is also created by "online predators" soliciting images from adolescent victims, pimps trafficking in young adolescents and strangers using covert methods such as cameras hidden in changing rooms (Wolak et al., 2005b). Offender–victim relationships appear to vary based on age and developmental stage. While preadolescent victims are more often photographed by familial or other caretaker abusers, a more common context for adolescent victims is statutory rape crimes (Wolak et al., 2005b). Such violations of age of consent laws constitute a substantial proportion of sex crimes against adolescents in general (Troup-Leasure & Snyder, 2005). Victims in these cases often have romantic attachments to offenders. Crimes involving online predators who use the Internet to meet victims and solicit "self-produced" images often follow a similar pattern. They generally involve adolescent victims with attachments to offenders and violations of age of consent laws (Wolak, Finkelhor, & Mitchell, 2009; Wolak, Finkelhor, Mitchell, & Ybarra, 2008).

Knowing whether CP producers distribute images online is another important factor in understanding this crime, for several reasons. First, for some victims online distribution could magnify harm if victims know or find out that their images are available for viewing via the Internet. Second, distribution exposes offenders to additional charges and penalties. Third, when CP producers distribute images online, it suggests they may be motivated to photograph victims so they can participate in online CP trading. Much of the discourse on this topic assumes offenders who sexually abuse and photograph victims are so motivated (Collins, 2007; Cooper, 2009). However, data from law enforcement agencies suggest that a considerable number of CP producers do not circulate images to others (Wolak et al., 2005b). Many offenders produce CP solely for their own use—for example, as souvenirs of sexual experiences or to use in masturbatory fantasies (Klain, Davies, & Hicks, 2001; Lanning & Burgess, 1989; Wolak et al., 2005b).

Method

The National Juvenile Online Victimization (NJOV) Study, a longitudinal study of a national sample of U.S. law enforcement agencies, is the first research to systematically collect data about the number and characteristics of offenders arrested for Internet-related sex crimes against minors, the dynamics of the crimes they commit, and changes over time. So far, we have collected two waves of data via mail surveys of agencies to

determine if they have relevant cases, followed by telephone interviews with investigators about specific cases reported in the mail surveys. The data in this article come from telephone interviews with investigators about a subsample of 319 arrest cases involving CP production with identified victims during two discrete 12-month periods, July 2000–June 2001 (Wave 1, unweighted $n = 122$) and calendar year 2006 (Wave 2, unweighted $n = 197$). Although arrests are not indicators of the overall incidence of CP production and cannot capture all circumstances in which CP production occurs, such cases provide some of the best available data that can be systematically accessed for details about numbers and dynamics of CP production, characteristics of victims and offenders, and trends over time. The research was approved by the University of New Hampshire Institutional Review Board and all participants gave informed consent.

Sample

The NJOV Study sample of law enforcement agencies was designed to yield a nationally representative sample of Internet-related child sexual exploitation cases that ended in arrest. A three-frame stratified sample of agencies was used because such cases do not occur with equal probability among the more than 15,000 U.S. law enforcement agencies. The first sampling frame consisted of agencies mandated to investigate Internet-related child sexual exploitation crimes, including federal agencies and federally funded Internet Crimes Against Children (ICAC) Task Forces (Wave 1, first frame, $n = 75$; Wave 2, first frame, $n = 101$). This frame was not sampled; all agencies were surveyed. The second sampling frame consisted of law enforcement agencies with staff that had received training in investigating Internet-related child sexual exploitation cases prior to Wave 1. These were identified through lists provided by training agencies. About half of second frame agencies were randomly selected to participate in the study (Wave 1, second frame, $n = 833$; Wave 2, second frame, $n = 832$). The third frame consisted of all other local, county, and state law enforcement agencies in the United States, approximately 13,586. About 12% of third frame agencies were randomly selected for the sample (Wave 1, third frame, $n = 1{,}666$; Wave 2, third frame, $n = 1{,}665$). (Differences in the numbers of agencies in specific frames between Waves 1 and 2 reflect changes in status among agencies, for example, as new ICAC Task Forces were funded.) The sample was drawn using an annually updated database of all U.S. law enforcement agencies available through the National Directory of Criminal Justice Data. The agencies in the first and second frames were cross-referenced in the database to avoid duplication among the three frames.

Procedures

Wave 1 was conducted between October 2001 and July 2002. We surveyed a national sample of 2,574 state, county, and local law enforcement agencies by mail asking if they had made arrests in Internet-related CP or sexual exploitation cases between July 1, 2000, and June 30, 2001. Then detailed telephone interviews were conducted with investigators about specific cases. Two federal agencies participated in the telephone interviews also. Using the same procedures, we collected data for Wave 2 between June 2007 and August 2008, from a national sample of 2,598 state and local agencies about cases ending in arrest in 2006, with two federal agencies participating in telephone interviews. Figure 1 provides details about the dispositions of the mail survey and telephone interview samples.

Telephone interviews were conducted by trained interviewers using a computer-assisted telephone interviewing system. To increase the reliability of responses, we asked investigators to have and refer to case files during interviews. We designed a sampling procedure for telephone interviews based on the number of cases reported by an agency, so that we would not unduly burden respondents in agencies with many cases. If an agency reported between one and three cases, we conducted follow-up interviews for every case. For agencies that reported more than three cases, we conducted interviews for all cases that involved identified victims and sampled other cases. (By ''identified victims'' we mean those who were identified and contacted by law enforcement in the course of investigations.) For agencies with between 4 and 15 cases, approximately half of the cases that did not have identified victims were randomly selected for telephone interviews. In agencies that reported more than 15 cases, approximately one quarter of the cases with no identified victims were randomly selected. In some agencies, we could not find out which cases had identified victims, so we sampled from all cases, using the procedures described above. Information in the interview (e.g., last four numbers of social security number, month and year of birth, names of any other arresting agencies) allowed us to identify and account for duplicate cases.

To be eligible, cases had to have victims younger than 18; involve arrests in July 2000–June 2001 (Wave 1) and in 2006 (Wave 2); and be Internet-related. Cases were Internet-related if an offender used the Internet to facilitate a crime, there was a proactive online investigation, CP was received, stored, or distributed online, or CP was found on a computer or on electronic media or in a digital format. In Wave 2, the definition of ''Internet-related'' was expanded to include cell phones and other electronic media (e.g., digital cameras).

Measures

To determine if agencies had made arrests for Internet-related child sexual exploitation, the mail survey asked two questions. First, ''Between [July 1, 2000 and June 30, 2001 (Wave 1) or January 1, 2006 and December 31, 2006 (Wave 2)], did your agency make ANY ARRESTS in cases involving the attempted or completed *sexual exploitation of a minor*, AND at least one the of the following occurred: (a) The offender and the victim first met on the Internet; or (b) The offender committed a sexual offense against the victim on the Internet, regardless of

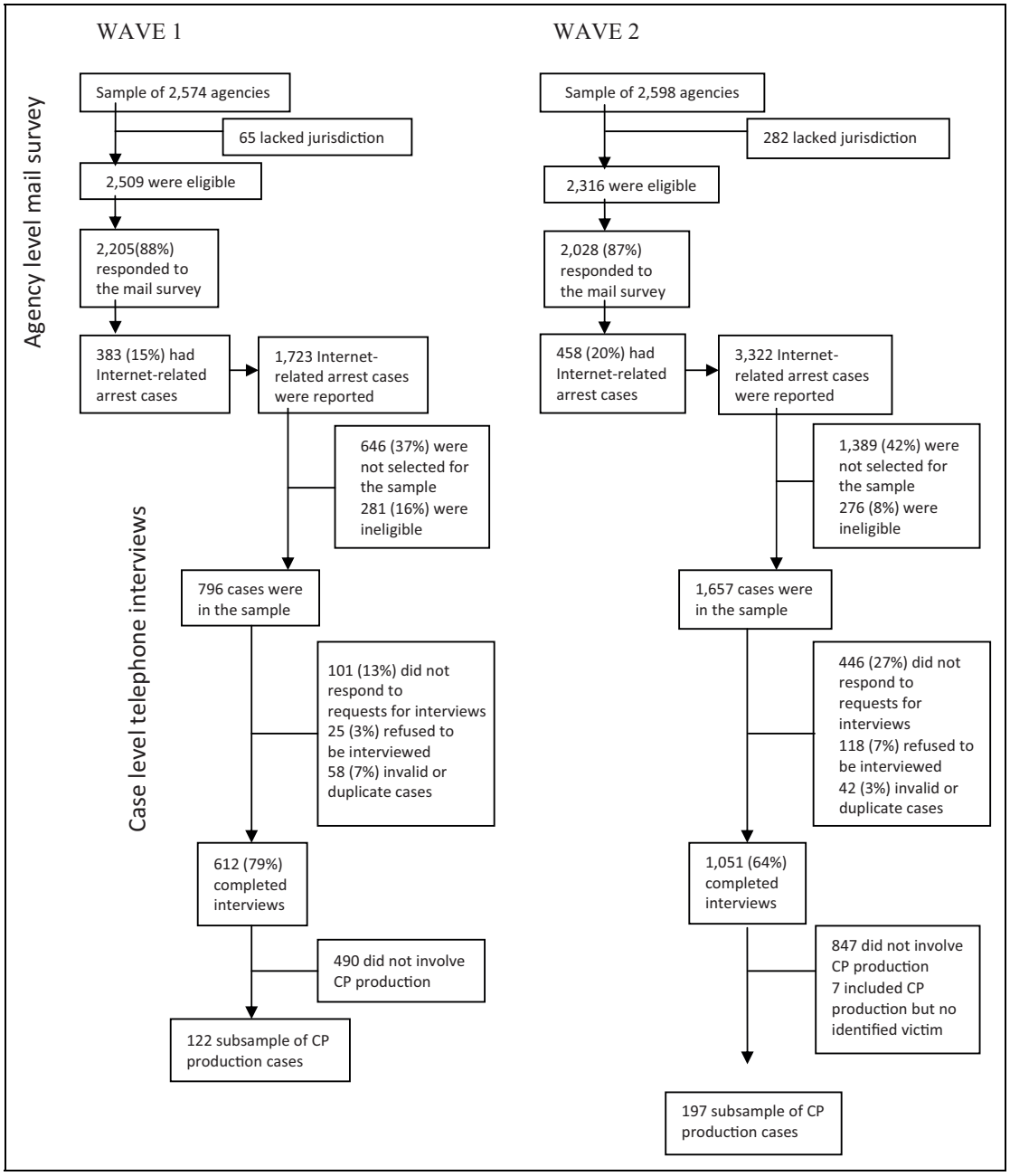

Figure 1. Disposition of NJOV Study agency and case samples.

whether or not they first met online." Second, "Between [July 1, 2000 and June 30, 2001 (Wave 1) or January 1, 2006 and December 31, 2006 (Wave 2)], did your agency make ANY ARRESTS in cases involving the possession, distribution, or production of child pornography, and at least one of the following occurred: (a) Illegal images were found on the hard drive of a computer or on removable media (e.g., CDs or disks) possessed by the offender; (b) The offender used the Internet to order or sell child pornography; (c) There was other evidence that illegal images were downloaded from the Internet or distributed by the offender over the Internet."

In telephone interviews, the CP production cases were identified by asking, "Did this case involve production of CP (meaning [an offender] created it)?" Respondents defined "CP" based on the laws of their jurisdictions. We did not impose a particular definition of CP because we wanted to capture the full range of arrests identified by law enforcement as involving CP production and to measure the content of images and characteristics of victims and offenders across local, state, and federal jurisdictions. Measures were based on questions developed for the NJOV Study through interviews, pretesting, and piloting with law enforcement before Wave 1 data collection. Questions covered victim and offender characteristics

Table 1. Child Pornography Production: Personal Characteristics of Victims and Offenders

	Wave 1 ($n = 122$), % (n)	Wave 2 ($n = 197$), % (n)[a]	χ^2	df
Victim characteristics				
Gender			2.45	1
Female	80 (94)	87 (162)		
Male	20 (28)	13 (33)		
Non-Hispanic White	91 (108)	87 (170)	.99	1
Age			12.59**	3
3 or younger	3 (7)	4 (7)		
4 or 5	7 (8)	8 (13)		
6 to 12	43 (52)	24 (54)		
13 to 17	47 (55)	65 (121)		
Family status			7.42	3
Both biological parents	38 (44)	37 (72)		
Parent and stepparent/partner of parent	14 (17)	23 (41)		
Single parent	42 (49)	29 (59)		
Other	5 (8)	8 (18)		
Household income			35.41***	4
Less than $20,000	15 (18)	12 (22)		
$20,000 to $49,999	47 (49)	33 (64)		
$50,000 to $79,999	8 (14)	11 (25)		
$80,000 or more	4 (4)	21 (27)		
Don't know	25 (36)	23 (59)		
Offender characteristics				
Gender			1.53	1
Male	98 (119)	96 (190)		
Female	2 (3)	4 (7)		
Any female offender	5 (7)	9 (17)	1.54	1
Non-Hispanic White	93 (110)	87 (167)	2.43	1
Age			4.16	3
Younger than 18	3 (2)	3 (7)		
18 to 25	8 (9)	16 (30)		
26 to 39	45 (59)	39 (76)		
40 or older	44 (52)	42 (84)		
Education			15.61**	5
Did not finish high school	6 (7)	11 (22)		
High school graduate	32 (35)	30 (59)		
Some college or technical training	32 (36)	16 (32)		
College graduate	11 (10)	11 (25)		
Postcollege degree	3 (5)	2 (5)		
Don't know	16 (21)	29 (54)		
Marital status			7.87	3
Single, never married	36 (45)	47 (93)		
Married	31 (38)	23 (50)		
Living with partner	5 (7)	11 (15)		
Separated, divorced, or widowed	27 (32)	19 (39)		
Household income			8.41	4
Less than $20,000	17 (28)	13 (30)		
$20,000 to $49,999	53 (57)	41 (75)		
$50,000 to $79,999	13 (18)	15 (32)		
$80,000 or more	6 (4)	12 (24)		
Don't know	11 (15)	19 (36)		
Employed full-time	81 (95)	59 (130)	14.47***	1
Lived with a minor	46 (53)	38 (71)	2.01	1
History of violence	18 (20)	20 (39)	.33	1
Problems with drugs or alcohol	20 (24)	34 (57)	6.41	1
Prior arrest for nonsexual offense	26 (27)	43 (71)	8.65**	1
Prior arrest for sex offense against minor	11 (18)	10 (26)	.04	1
Registered sex offender at time of arrest	1 (2)	6 (15)	4.70***	1
Possessed CP in addition to what was produced	73 (86)	58 (107)	6.71	1

Note. CP = child pornography; df = degrees of freedom.

Table refers to characteristics of primary victims and offenders. Wave 1 arrests July 2000–June 2001, Wave 2 arrests during 2006. *Ns* and percentages may not be proportionate because percentages are weighted to reflect selection probabilities and some cases have more influence than others. Missing values that exceed 5% are shown.

[a] Wave 2, $n = 195$ for victim characteristics. Two cases involved adolescents who produced CP images of themselves and were considered offenders by police, thus those cases did not have victims.

*** $p \leq .001$.

** $p \leq .01$.

(e.g., gender, ethnicity, race, age, household characteristics); offender's history of arrests and related problems (e.g., substance abuse, violence); context of the crime (e.g., victim–offender relationships, sexual offenses committed); content, format, and distribution of produced CP; and information about law enforcement response (e.g., how cases became known to law enforcement, number and types of agencies involved, and case outcomes). Some questions about technological developments after 2000 were added to Wave 2, for example, use of cell phones in photography. Also, in this article, the term "child sexual abuse" is used broadly to include contact and noncontact (e.g., online enticement) and forcible and nonforcible (e.g., statutory rape) sex crimes with victims younger than 18.

In crimes with multiple victims (62% of Wave 1 cases and 37% of Wave 2), questions about victim and crime characteristics referred to a primary victim chosen based on the following algorithm: first, the victim who most directly used the Internet; if more than one, the victim who was most seriously victimized; if more than one the youngest. A similar algorithm was used in cases with multiple offenders (9% of Wave 1 cases and 15% of Wave 2; i.e., most directly used the Internet, committed most serious crime, youngest).

Statistical Analyses

We conducted weighted descriptive analyses using SPSS Complex Samples Statistical Software, version 16.0. Weights were constructed to reduce bias resulting from variations in selection probabilities, response propensity, and nonresponse (Kish, 1992). First, each case was given a weight to account for its probability of selection to both the mail survey and telephone interview samples. The sampling weights were adjusted for agency nonresponse, telephone interview nonresponse, duplication of cases among agencies, and arrests by one federal agency that did not participate in telephone interviews. Second, primary sampling weight units were created to account for clustering of cases within each of the three sampling frames. Third, stratification weights were computed to reflect the differing sampling strategies for each frame. Finally, finite population correction factors accounted for the sample being conducted without replacing ineligible cases.

Weighted data were used to estimate numbers of arrests for crimes involving CP production. Chi-square cross-tabulations were conducted to compare differences between Wave 1 and Wave 2 arrest cases based on offender, victim, and case characteristics and to examine differences in Wave 2 arrests based on victim's age (13 to 17 vs. younger). Chi-square cross-tabulations were performed on weighted data using SPSS Complex Samples statistical software. No adjustment was made for multiple comparisons because while such adjustments can reduce the possibility of Type I error, they can increase the possibility of Type II error (Perneger, 1998). We report significance levels of $p \leq .01$ or less only. More detailed information is available in the NJOV Study Methodology report (Mitchell Wolak, & Finkelhor, 2009).

Results

Trends in Numbers of Arrests, Ages of Victims, and Other Victim and Offender Characteristics

In 2006 (Wave 2), U.S. law enforcement agencies made an estimated 859 arrests for Internet-related sex crimes that involved CP production (95% confidence interval [CI] = [722, 996]), more than twice as many as the estimated 402 arrests for such crimes during July 2000–June 2001 (Wave 1; 95% CI = [320, 483]). Table 1 shows the personal characteristics of victims and offenders in Wave 1 and Wave 2 arrest cases and chi-square tests for significant differences. A larger proportion of Wave 2 arrests involved adolescent victims and a smaller proportion involved victims ages 6 to 12. There was no statistically significant change in the percentage of victims younger than 6 between Wave 1 and Wave 2. A larger proportion of victims came from higher income households. The percentage of CP producers who were employed full-time decreased in Wave 2, as did the percentage that had some college or technical training, although the proportion of cases in which education was unknown increased. Larger percentages had prior arrests for nonsexual offenses and were registered sex offenders at the time of their arrests. There were no changes in terms of ages and genders of CP producers.

Trends in Characteristics of Arrest Cases, Including Content and Distribution of Produced Images

Table 2 shows the case characteristics and content of produced images in CP production crimes; these were largely similar in both waves of the study, as shown by chi-square tests included in the table. About one third of arrests involved familial offenders and about one third involved other acquaintances. Offenders who used the Internet to meet victims accounted for about one quarter of cases in both waves of the study. Comparing Wave 2 to Wave 1, there was little change in the tactics used by CP producers or in the nature of sexual offenses they committed in addition to CP production. In both waves, tactics and additional sexual offenses were diverse. The only significant differences were that a smaller proportion of Wave 2 cases involved multiple victims and a larger proportion involved youth who produced images of themselves that qualified as CP. There was no significant change in the content of images produced. In both waves, most producers took pictures that focused on a victim's genitals or showed explicit sexual activity, and about 40% produced images that showed an adult perpetrating child sexual abuse. Similar relevant percentages of CP producers took pictures of children enduring sexual violence. In both waves of the study, law enforcement investigators stated that CP producers had distributed produced images in about one quarter of arrest cases. In a similar proportion of cases, investigators did not know whether images were distributed and, in about one half of cases, investigators answered "no" when asked if producers distributed images. Almost all of the known distribution was online.

Table 2. Child Pornography Production: Case Characteristics and Content of Produced Images

	Wave 1 (n = 122), % (n)	Wave 2 (n = 197), % (n)	χ^2	df
Offender/victim relationship				
Family member	37 (46)	36 (65)	.01	1
Face-to-face acquaintance	36 (47)	35 (75)	.01	1
Met online	22 (26)	25 (46)	.26	1
Stranger or pimp	5 (3)	4 (11)	.45	1
Multiple victims	62 (65)	37 (82)	17.07***	1
Multiple offenders	9 (14)	15 (32)	2.00	1
Case involved youth-produced images	5 (8)	27 (59)	20.30***	1
Most severe sexual offenses in addition to CP production[a]			1.98	3
No contact sexual offense	37 (45)	31 (62)		
Inappropriate touching or fondling	9 (12)	13 (21)		
Penetrative offense (intercourse, oral sex)	53 (63)	55 (111)		
Sadistic sexual assault	1 (2)	<1 (1)		
Producers tactics[a,b]				
Used or threatened violence	3 (7)	6 (15)	1.44	1
Used coercion or pressure	31 (37)	29 (61)	.18	1
Used romance or friendship	31 (36)	41 (86)	2.91	1
Gave victim alcohol or drugs	21 (24)	25 (46)	.45	1
Used covert methods to produce CP	21 (22)	22 (39)	.05	1
Gave victim money or other items	Not asked	3 (12)	n/a	
Explicitly used image to blackmail victim	Not asked	1 (2)	n/a	
Offender produced CP depicting . . . [a,b]				
Genitals or sexual activity	74 (98)	81 (160)	1.83	1
Sexual contact between adults and minors	43 (59)	40 (75)	.20	1
Penetration of a child by an adult	30 (44)	31 (56)	.03	1
Penetration of a child not by an adult	15 (27)	22 (51)	2.55	1
Violence	6 (9)	4 (9)	.92	1
Not graphic: Nude or seminude	73 (86)	74 (153)	.08	1
Not graphic: Suggestive poses, clothed	39 (58)	56 (110)	7.47	1
Used Internet to transmit live images	Not asked	9 (18)	n/a	
Produced videos	41 (57)	32 (58)	2.10	1
Number of still images produced[c]				
10 or fewer	25 (31)	33 (61)	2.02	1
11 to 50	28 (33)	24 (50)	.55	1
More than 50	16 (17)	15 (37)	.05	1
Don't know	12 (18)	7 (12)	2.83	1
Numbers of videos produced[c]				
10 or fewer	28 (44)	21 (36)	2.06	1
More than 10	5 (8)	3 (10)	.38	1
Don't know	12 (12)	4 (8)	6.38	1
Distributed produced CP			2.70	2
No	43 (55)	52 (108)		
Yes	28 (39)	25 (57)		
Don't know	29 (28)	23 (32)		
Distributed produced CP online	23 (34)	23 (51)	.00	1

Note. CP = child pornography; df = degrees of freedom; n/a = not applicable.
Wave 1 arrests between July 1, 2000 and June 30, 2001 and Wave 2 arrests during 2006.
*N*s and percentages may not be proportionate because percentages are weighted to reflect selection probabilities and some cases have more influence than others.
[a] n = 195 for these variables for Wave 2 data.
[b] Categories are not mutually exclusive.
[c] Some offenders produced only videos or only still images.
*** $p \leq .001$.

Differences in Arrest Cases With Adolescent Victims Compared to Those With Younger Victims

Because our data suggest an increase in adolescent victims, with teenagers constituting almost two thirds of Wave 2 arrest cases, we compared Wave 2 cases with adolescents (ages 13 to 17) to those with younger victims, to shed light on possible differences in case dynamics. We examined the data in terms of multiple victims, self-production of CP, offender tactics, and

Table 3. Child Pornography Production: Law Enforcement Response[a]

	Wave 1 ($n = 122$), % (n)	Wave 2 ($n = 197$), % (n)	χ^2	df
Case became known through			16.28***	1
Law enforcement action	9 (19)	29 (59)		
Report	91 (103)	71 (138)		
Victimization was disclosed when images were found	Not asked	38 (74)	n/a	
How case originated (type of sex crime when case began)				
Crime against identified victim	87 (99)	65 (130)	17.11***	
Solicitation to UC posing as minor	3 (6)	12 (22)	7.37***	
CP possession or distribution	10 (17)	23 (45)	7.66***	
Type of agency where case came to light			40.15***	2
ICAC Task Force or affiliate	9 (18)	35 (63)		
Federal agency	19 (36)	28 (76)		
State, county, or local agency	72 (68)	36 (58)		
Multiple agencies were involved	84 (104)	60 (133)	19.25***	1
Case involved				
Federal charges	21 (37)	41 (91)	12.17***	1
State charges	90 (109)	73 (136)	12.09***	1
Both federal and state charges	12 (25)	16 (33)	1.02	1
Case outcome was known	83 (98)	77 (160)	1.36	1
Cases where outcome was known[a]	($n = 98$)	($n = 160$)		
Any guilty plea	82 (80)	91 (146)	4.22	1
Any conviction at trial	17 (16)	3 (6)	16.65***	1
Charges were dismissed or dropped	7 (11)	6 (11)	.04	1
Sentence included incarceration	81 (81)	84 (136)	.39	1
Incarceration for more than 5 years	43 (48)	63 (101)	8.84**	1
Incarceration for 1 year or less	5 (4)	8 (10)	.70	1
Offender will be on sex offender registry	91 (89)	86 (141)	1.20	1

Note. CP = child pornography; ICAC = Internet Crimes Against Children; n/a = not applicable.
Wave 1 arrests July 2000–June 2001, Wave 2 arrests during 2006.
*N*s and percentages may not be proportionate because percentages are weighted to reflect selection probabilities and some cases have more influence than others.
[a] Some offenders were charged in more than one jurisdiction. They may have pled guilty or been convicted at trial in more than one court or charges may have been dropped in one jurisdiction and pursued in another.
*** $p \leq .001$.
** $p \leq .01$.

additional sexual offenses (ages 12 and younger, $n = 74$; ages 13 to 17, $n = 121$, not shown in table). Larger proportions of offenders with adolescent victims met victims online (37% vs. 3% with younger victims, $\chi^2(1, n = 195) = 27.27$, $p < .001$), used romance or friendship as a tactic in the commission of the crime (54% vs. 17%, $\chi^2(1, n = 195) = 24.75$, $p < .001$), gave victims alcohol or drugs (31% vs. 13%, $\chi^2(1, n = 195) = 8.38$, $p < .01$), and obtained self-produced images from victims (39% vs. 4% of younger victims, $\chi^2(1, n = 195) = 28.35$, $p < .001$). Among adolescent victims, there were smaller percentages of familial offenders (20% vs. 66% with younger victims, $\chi^2(1, n = 195) = 41.26$, $p < .001$) and offenders who committed contact sexual offenses (59% vs. 88%, $\chi^2(1, n = 195) = 18.10$, $p < .001$).

Trends in Law Enforcement Responses to CP Production

Table 3 gives information about the law enforcement response to CP production crimes, including chi-square tests for significant differences. In Wave 2, 29% of arrest cases involving CP production began with action by law enforcement, primarily proactive investigations of online activity. This was a threefold increase from 9% in Wave 1 ($p = .000$). The balance of cases began with reports or complaints by individuals. CP produced by sexual abusers led to the disclosure of sexual victimizations in a considerable number of 2006 arrest cases. In 38%, the case started because someone found sexual pictures that offenders had taken of victims. (This was not assessed in Wave 1.)

The types of criminal investigations that led to arrests of CP producers also shifted in Wave 2. Although in both waves most cases in which CP producers were arrested began with allegations that offenders had sexually abused specific, identified victims, this majority was significantly smaller in Wave 2. Larger proportions of cases that began with investigations of CP downloaded from the Internet and with undercover investigators posing online as minors led to arrests for CP production.

A larger proportion of CP producers were charged in federal court in Wave 2 compared to Wave 1, with a concomitant decrease in the proportion of cases with state charges. Of cases with known outcomes, a smaller percentage of offenders were convicted at trial as opposed to pleading guilty, but this did not appear to reflect less success at prosecutions. There were no

acquittals among the sample of Wave 2 arrest cases, and no increase in cases that were dismissed or dropped. A larger proportion of offenders were sentenced to incarcerations of more than 5 years.

Discussion

The findings of this research provide considerable detail about the characteristics of CP production arrest cases. By drawing from a national sample of arrest cases, the research provides important, representative data on the range of victims, perpetrators, and crimes involved in CP production. In addition, by comparing data from two time points (2006 vs. July 2000–June 2001), we are able to evaluate some of the concerns about possible growth in CP production and possible changes in the dynamics of arrests.

Do Trends in Arrests for CP Production Suggest That CP Production Is Increasing?

A major concern is whether increasing numbers of child sexual abusers are producing CP. We found that arrests for Internet-related crimes involving CP production doubled in Wave 2 (2006) compared to Wave 1 (July 2000–June 2001). This increase in arrests could reflect growth in CP production or expanding law enforcement activity. Growth in CP production could be related to the widespread increase in Internet access that occurred in the U.S. population between Wave 1 and Wave 2. During that time, Internet use increased substantially (Pew Internet and American Life Project, 2010) as did the ownership of related technologies that could be used in CP production, such as digital cameras (Harris Interactive, 2008). In addition, access to such technologies may have increased among populations in which sexual offending is more prevalent. Our findings that CP producers arrested in Wave 2 were somewhat more criminal as a group than those arrested in Wave 1—higher proportions had prior arrests for nonsexual offenses and were registered sex offenders—are consistent with this possibility.

On the other hand, much of the growth in arrests could be explained by increasing law enforcement activity to identify and arrest CP producers. Between Wave 1 and Wave 2, federally funded initiatives such as the ICAC Task Forces grew; the number of arrests made by ICAC Task Forces and their affiliates more than tripled, and there was a trend toward increased arrests by federal agencies. Also, in Wave 2, more CP production cases came to the attention of police because of law enforcement action and more originated with proactive investigations of CP possession and online enticement, indicating that law enforcement may be more sensitive to and able to recognize the potential for CP production when it investigates other online child sexual exploitation crimes. So the substantial increase in arrests for CP production may not reflect a substantial increase in offenders producing CP; it may be primarily due to increased law enforcement efforts.

Further, if CP production rates were increasing over the time period of our study, one would also expect to see evidence of rising rates of child sexual abuse or sexual assaults against adolescents. In fact, evidence from a range of sources, including data from child protective service agency statistics, criminal justice sources, and victim self-report surveys has found that rates of sexual abuse have declined substantially since the mid-1990s and continued to decline throughout the 2000s (Finkelhor & Jones, 2006, 2008; Finkelhor, Turner, Ormrod, & Hamby, 2010; Jones & Finkelhor, 2009; Sedlak et al., 2010). This lends support to the argument that the increase in CP production arrests between 2000 and 2006 is the result of increased criminal justice investigation activity and greater rates of identifying and arresting offenders, rather than an increase in the population of CP producers.

Do Trend Data About the Content of the CP Produced in Arrest Cases Suggest That Producers Are Photographing Younger Victims or Creating More Violent Images?

Another concern has been that more CP producers may be photographing younger victims or violent abuse. However, we did not find evidence of this in arrest cases. In both waves of our study, similar percentages of arrest cases included images of sexual violence (e.g., bondage, aggressive rape). These were particularly egregious cases, but there was no increase. Similarly, arrest case data did not provide evidence that CP producers were targeting younger victims. Rather, the percentage of CP producers who victimized children aged 3 or younger remained small and there was no statistically significant change between Wave 1 and Wave 2.

Do Trend Data About Arrest Case Suggest an Increase in Adolescent Victims of CP Production?

NJOV Study findings do suggest a shift in the population being victimized by CP production. In Wave 2, adolescents were primary victims in almost two thirds of CP production cases compared to less than half in Wave 1. Offenders against adolescents tended to be face-to-face acquaintances or online enticers. Many of these cases involved "self-production" by adolescents. However, almost all of the Wave 2 self-production cases involved adult sex offenders who solicited images from underage victims, rather than "sexting" of explicit sexual images created by and circulated among youth.

Do Trend Data About the Distribution of CP by Arrested Producers Suggest More Dissemination of Images?

It is notable that the proportion of CP producers who used the Internet to distribute images they created did not increase, but remained at about one quarter of cases in 2006, the same rate of distribution as in 2001. There was also a similar proportion of cases in which investigators did not know whether distribution had occurred, so that the proportion could be substantially

higher. Nonetheless, our data suggest that online distribution often was not a motivation for CP production. A substantial number of CP producers appear to be creating images for their own use and not for distribution or trading. One question is whether this proportion will increase as photography and the Internet become increasingly integrated.

What Do Trends in Arrests for CP Production Suggest About the Effectiveness of the Law Enforcement Response to Such Crimes?

The adequacy of law enforcement response to CP production is a complicated issue to assess, requiring a comprehensive evaluation beyond the scope of this study. But data from the study do suggest a growing, robust, and strategic response to the problem. The quantity of proactive investigations of online activity increased substantially. Law enforcement was making increasing use of the Internet to discover and investigate CP production crimes. The federal government was increasingly involved in the prosecution of these cases. More convictions were obtained through plea bargains, rather than trial, which could reflect increased quality of evidence or increased skill at developing strong cases. The length of sentences also increased. The meaning of these changes is subject to interpretation, but they are certainly consistent with a view that law enforcement is evolving and adapting in its response to the crime. None of the data suggest deterioration in response, such as a decline in the rate of convictions.

On the other hand, to keep matters in perspective, the estimated 859 arrests in Wave 2 for CP production is a small part of the 49,345 U.S. arrests for all sexual offenses against minors in 2006, estimated from the FBI National Incidence Based Reporting System (Wolak et al., 2009). Certainly, arrest cases provide a very incomplete count of CP production. We do not know the total number of CP producers in the United States or the total number of victims. Moreover, the most visible results of CP production are the images circulated online by CP traffickers from across the globe. These images multiply and accumulate as they are traded on the Internet. Currently, there is no way to determine how many individual victims are depicted in online CP and how many children and adolescents enter the online stream of victims each year. Nonetheless, it is somewhat reassuring that data from arrest cases suggest many CP producers did not distribute images online, victimize younger children or produce violent images, and that the effectiveness of the law enforcement response appears to be increasing.

Limitations and Strengths of the Study

The NJOV Study is the first research to systematically gather information about a national sample of CP production cases from a wide range of law enforcement agencies. However, limitations should be kept in mind when interpreting the results. First, the results apply only to offenders who were arrested for Internet-related sex crimes that involved CP production. These offenders may not be representative of CP producers who were not arrested. Second, some errors and biases may have been introduced because we interviewed law enforcement investigators. While their professional responsibilities require them to gather extensive information about cases, some of their answers could have been biased by training, professional attitudes, or the adversarial nature of their roles. Further, some or even much CP production may escape the attention of police if they do not look for or ask about images, or if offenders or victims do not disclose there were photographs. Third, although the study was designed to yield a nationally representative sample of cases, sometimes samples are randomly skewed. However, even if the sample of cases is not completely representative, it is far more diverse than typical criminal justice samples because it was derived from a broad sample of law enforcement agencies. Fourth, the study could not gather information about the psychological impact of CP production on victims or the psychological characteristics of child sexual abusers who produced CP. These are important issues that need to be addressed through research. Finally, keeping up with rapidly changing technologies and rapidly evolving police responses is a challenge. Aspects of crimes involving CP production may have changed since Wave 2. Also, slight differences in our measures of "Internet-related," which we made to account for technological advances after Wave 1 of the study, could impact the comparability of the waves.

Conclusions

The data from the first two waves of the NJOV Study reinforce that sex crimes involving CP production are highly diverse. Arrested CP producers ran the gamut of child sexual abusers. They included familial, acquaintance, online and stranger offenders and pimps; offenders against very young, prepubescent, and adolescent victims; voyeurs, online enticers, fondlers, statutory rapists and, although rarely, violent rapists. There were occasions when CP production was the sole sex crime committed by an offender who, for example, hid cameras to secretly film victims but did not otherwise molest them. Overall, about one third of CP production arrests did not involve contact sexual offenses in addition to CP production. Some crimes involved additional noncontact offenses such as online enticement or grooming, which can entail very graphic online sexual conversations and webcam sexual interactions. In most cases, however, CP production was an aspect of child sexual abuse or assault, rather than a stand-alone crime.

In fact, CP production is unique in that offenders actually record, preserve, and sometimes distribute to others the evidence of their criminal acts. While this may exacerbate harm to victims who know or fear that their images will be seen by others, CP producers may also be making themselves more visible to law enforcement and easier to prosecute than other child sexual abusers. The research found that CP produced by arrested offenders is a source of disclosure when pictures depicting sexual abuse are found by third parties. Thus, the images created by producers can result in the identification and rescue of children whose victimizations might not otherwise

become known. Such images also may serve as unequivocal evidence against producers, and thus may strengthen the hands of prosecutors, allow additional charges to be filed, and reduce pressure on victims who might be disbelieved.

Although we did not find strong evidence that CP production has grown in response to demands by consumers of online CP, it is too early to tell whether CP production will become a more integral part of child sexual abuse in the future. Arrest data indicate that it is still relatively rare. Our findings suggest that increases in arrests are related to increased law enforcement activity rather to growth in the population of CP producers, a conclusion that is consistent with the substantial and continued decline in overall rates of child sexual abuse. However, the full consequences of the technological changes that have made CP easy to create are still hard to assess fully. The increased activity of law enforcement in understanding and responding to this technology is certainly a welcome development. At the same time, most CP production came to light in the context of child sexual abuse investigations. While this research focused on Internet-related cases, conventional child sexual abuse investigations should not be overlooked as a means of detecting CP producers. Standard protocols for such investigations should prompt investigators always to look for and ask about pictures. Offenders who are found with CP downloaded from the Internet or who used the Internet to meet their victims online deserve heightened alert to the possibility of CP production.

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