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Abstract

The growing number of notifications for child pornography (CP) possession constitutes a capacity problem for police forces entrusted with the investigation of these offenses. Notifications of CP offenses in which the investigation reveals concurrent direct victimization, in the form of contact offenses, grooming, online offending, or the production of CP material, form a potential target group for prioritization. The first of the twofold aims of this study was to validate the occurring distinction between mixed suspects (i.e., CP possession suspects who were also ever associated with direct victimization) and CP-only suspects (i.e., CP possession suspects who were never associated with direct victimization) to predict an outcome of the investigation including direct victimization. The second aim was to explore variables related to direct victimization among CP-only suspects. A total of 150 files of police investigations into notifications for CP offenses were studied. Findings confirmed significantly greater prevalence of direct victimization as an outcome of the investigation among mixed suspects than CP-only suspects (90% vs. 10%). Among CP-only suspects, direct victimization was predicted by (a) prior police contacts, charges, or convictions concerning noncontact sexual offending, (b) the confiscation of more than two computers during the house search, and (c) a more serious nature of the CP material that formed the basis for the notification in terms of younger victims and more extreme content. These variables may point to a small subgroup

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of heavily invested CP offenders who are at a higher risk to cross the line to direct victimization. Cross-validation of these preliminary findings is indicated.

Keywords
child pornography, online sexual offending, mixed sexual offending, risk assessment

In recent decades, a number of circumstances and developments have converged that put increasing pressure on police capacity to investigate child pornography (CP) offenses. The Internet provided a powerful boost to the availability of pornography in general, as it made the production, storage, and distribution of audiovisual material easier and cheaper than ever before and enabled its consumption in relative anonymity (Cooper, 1998; Internet Watch Foundation [IWF], 2012; National Centre for Missing and Exploited Children [NCMEC], 2012). With sexual interest in children in the general population far more common than expected (Ahlers et al., 2011; Green, 2002; Seto, 2008), the spreading of CP material also increased dramatically (Wortley & Smallbone, 2006). In response to the growing online availability of CP material, penal codes for possession of CP became increasingly strict (Basbaum, 2010; Ellis & Landau, 2009) and included a broader set of behaviors. Furthermore, governments have invested heavily in the active detection of CP offenders (Broadhurst, 2006), who, due to technical development, possess increasingly large collections of CP material (Wolak, Finkelhor, & Mitchell, 2011), which need to be thoroughly investigated to build the cases against them. The combination of these developments has resulted in a mounting workload for police officers entrusted with these investigations, as well as a growing backlog of CP cases (Dettmeijer-Vermeulen, 2011; Huey, Nhan, & Broll, 2012). Accordingly, there is a growing need for useful criteria for prioritization of cases.

The most obvious target for prioritization are those cases in which during the police investigation of the CP notification concurrent direct victimization is revealed, referring to the crimes involving completed or attempted direct victimization of children either with or without direct physical contact (Wolak et al., 2011). These offenses include contact offenses, grooming, online offending, or the production of CP material. Wolak et al. (2011) found direct victimization in 16% of the cases that originated from investigations based on the suspicion of CP possession.

Recent research into recidivism of CP offenders indicates that prior association with direct victimization may be a feasible predictor of new direct victimization. Regarding contact sexual offenses, it was found that *mixed* offenders (i.e., CP offenders with prior or concurrent charges or convictions for contact sexual offending) were significantly more likely to reoffend with a contact sexual offense than CP-only offenders (i.e., CP offenders without prior documented association with contact sexual offending; Eke, Seto, & Williams, 2011; Seto & Eke, 2005). Seto, Hanson, and Babchishin (2011) found histories of documented direct victimization in 12% of the

CP offenders in their sample. Wolak et al. (2011) found that 21% of the investigated CP possessors in their 2006 national U.S. sample had either concurrent or prior direct victims. Given the importance of the distinction between mixed and CP-only offenders regarding *re*offending, notifications involving mixed suspects already commonly receive priority by the investigating police force (Dutch National Police Expert Centre Concerning Child Pornography [DNPECCP], 2011). However, no research to date has empirically validated the prioritization of mixed suspects at the level of incoming police notifications.

Investigations involving the remaining group of CP-only suspects are known to sometimes still reveal direct victimization (DNPECCP, 2011) and an important question for the police force remains: What could be the risk factors predicting an outcome of direct victimization among CP-only suspects? Empirical research offers very limited evidence documenting valid factors for prioritization. One recent recidivism study (Wakeling, Howard, & Barnett, 2011) showed that the assessment of convicted CP-only offenders with an adapted version of the Risk Matrix-2000 sexual (Thornton et al., 2003) was not predictive for reoffense involving direct victims (area under the curve [AUC] = .50). Another study (Webb, Craissati, & Keen, 2007) suggested that the dynamic risk tool Stable-2000 (Hanson & Harris, 2001) could be more informative for convicted CP-only offenders as it was found to predict "specific sexually risky behaviors" (new offense-related allegations, charges, or reconvictions) among convicted CP-only offenders (AUC = .83) over a short follow-up time of 18 months. However, it should be noted that the evidence base remains rather scant, as only three CP-only offenders showed specific sexually risky behaviors and none of these involved direct victimization (J. Craissati, personal communication, August 29, 2013).

In the absence of strong, specific evidence, one might speculate that CP-only suspects who, during the investigation, turn out to have directly victimized a child would exhibit similarities to mixed offenders. A recent meta-analysis (Babchishin, Hanson, & VanZuylen, 2014) provided an indication as to what these characteristics might be. Between mixed and CP-only offenders, Babchishin et al. (2014) found that mixed offenders had greater access to (resident) children, had committed more prior violent and general offenses and were more likely to be unemployed than CP-only offenders, suggesting greater antisociality/impulsivity. Mixed offenders were also found to have greater sexual interest in children, greater paraphilic interests in general and to have committed more prior sexual offenses than CP-only offenders (Babchishin et al., 2014), indicating greater sexual deviance. Additional support for the hypothesis of elevated sexual deviance in mixed offenders comes from research regarding the content of CP collections. McCarthy (2010) found that mixed offenders possessed significantly more CP material than CP-only offenders. Another study (Long, Alison, & McManus, 2012) did not observe more CP material in mixed offenders, but found a higher percentage of CP material of a more serious nature (i.e., higher Sentencing Advisory Panel [SAP] levels; Sentencing Guidelines Council, 2007). Based on this literature, it was expected that greater antisociality/impulsivity and greater sexual deviance would help predict CP-only suspects with an eventual outcome of direct victimization.

Available research refers to convicted offenders, but not all CP cases brought to the attention of the police result in a conviction. Therefore, the current study included suspects instead of convicted CP offenders and may accordingly be regarded as a field study. Because prioritization has to take place at the suspect level (i.e., ahead of full investigation), research toward useful prioritization should also be conducted at the suspect level, if only to verify the outcome of studies involving convicted offenders. The aims of the current study were twofold. The first aim was to distinguish between CP-only and mixed suspects in terms of evidence for the direct victimization as the outcome of the police investigation. It was hypothesized that any association with direct victimization prior to the police investigation (e.g., being qualified as a mixed suspect) would be predictive of the discovery of direct victimization during the investigation. Second, an exploratory search was conducted to assess early identifiable risk variables that predicted the remaining uncovered direct victimization within the group of CP-only suspects. It was hypothesized that these variables would include more prior violent and general offenses, more unemployment and more access to children, as well as more deviant CP material.

Method

Participants

The study sample consisted of all notifications of possible CP possession between 2005 and 2011 in the jurisdiction Amsterdam-Amstelland. This Dutch jurisdiction spans 357 km² and included approximately 900,000 inhabitants in the year 2012, of whom 745,000 live within the city borders of Amsterdam. During the 6 years included in the study, there were 485 *leads* to possible CP offenses in the form of illegal images found on the suspects' computers or CP downloaded via an IP address that could be traced back to a certain individual. Of these leads, 172 were discarded by the researchers based on the fact that the Amsterdam-Amstelland Police Force (AAPF) stopped the investigation. Reasons given for not further investigating were as follows: "not enough pornographic material intercepted to further prosecute" or "unclear whether the intercepted material depicted children below the age of 18." In 46 cases, there was no identifiable suspect: CP material found unattended in a public place, notifications of the presence of CP on limewire, or an IP addresses leading to an open access computer. In 42 cases, traceable suspects had meanwhile moved to another jurisdiction; these cases were passed on to the appropriate jurisdiction. In 27 cases, the suspects were a priori deemed unaccountable based on being underage (23 cases) or suffering from severe psychiatric disorder (4 cases). The statute of limitation barred another 4 cases. The remaining 194 cases lead to 168 suspects (with 26 double leads to a single suspect). Eighteen of these 168 cases (11%) had more than 20% variables missing due to incomplete recording and archiving by the AAPF, and these records were excluded. This resulted in the final inclusion of 150 CP notifications that were thoroughly investigated and sufficiently documented. Of the initial 150 notifications, 114 investigations resulted in the evidence of CP possession, either with or without concurring
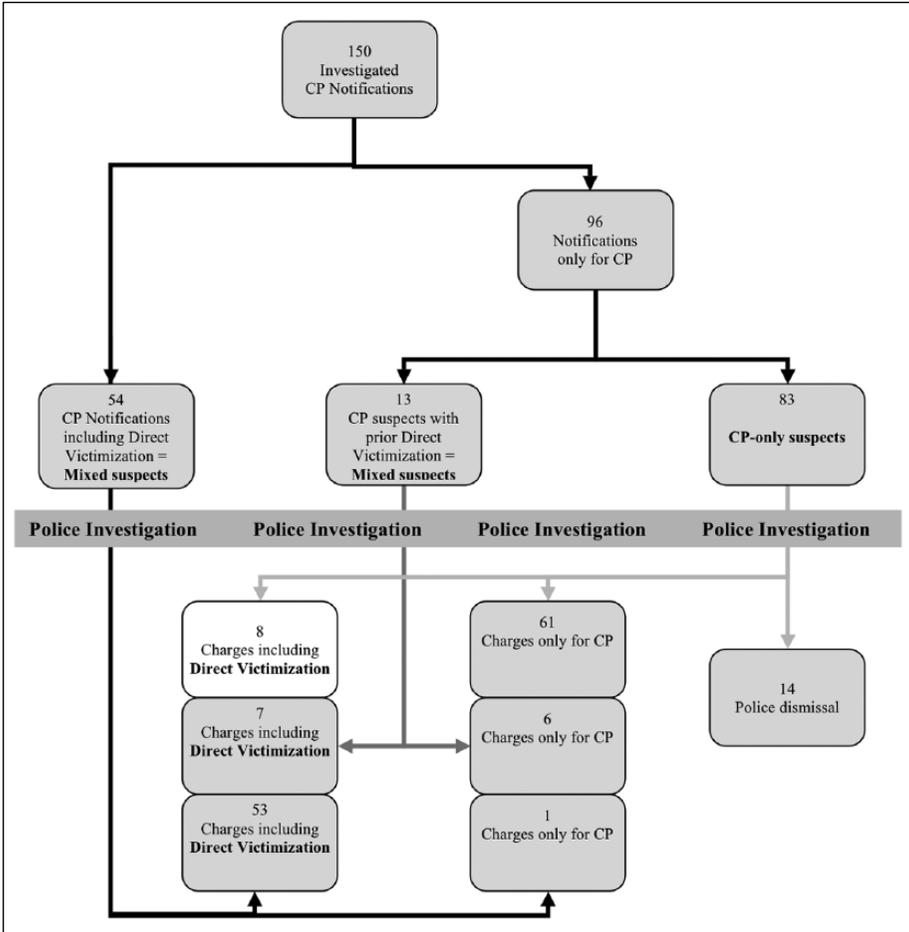
Figure 1. Flow diagram of the partitioning of subgroups of police notifications concerning child pornography (CP) into mixed suspects and CP-only suspects and the outcome of the police investigation in terms of charges for CP and direct victimization.

direct victimization. Sixty-eight investigations resulted in evidence of direct victimization, either with or without concurring CP possession. A detailed flowchart of the notifications and outcomes in the various subgroups is provided in Figure 1.

Generally, each police file contained (a) a detailed description of the CP material that formed the basis for the notification (the lead material), (b) sociodemographic characteristics of the suspect, (c) judicial record of previous crimes, (d) police records of prior notifications and police contacts during the prior 5 years, (e) a report of the house search including a list of the confiscated media (such as computers, laptops, memory sticks), and (f) minutes of interrogations. Files also contained outcomes of the digital forensic investigation in terms of the total amount of CP material found and the

detailed description of a sample of 25 to 50 CP images, selected by the investigating detective, which were deemed representative of the suspect's CP collection. All variables were based on police file information. To limit the number of variables and the risk of finding random effects, variables were selected for inclusion in the analysis when they (a) could be assessed after identification of the suspect and the house search, but before interrogation and investigation of the confiscated material; (b) showed excellent interrater reliability (intraclass correlations [ICC] > .80); (c) had 15% or less missing values; and (d) showed a prevalence of 10% or higher. The included variables are presented in Table 3 (a complete list of assessed variables is available from the authors).

Procedure

Two graduate psychology students (raters) were trained by a senior researcher in the use of the "Combating Paedophile Information Networks in Europe" (COPINE) scale (Taylor, Holland, & Quayle, 2001) and were also trained by the AAPF in the use of their filing systems. Blind to the outcome of the police investigation, each rater examined 75 police files and assessed information pertaining to characteristics of the suspect, characteristics of the media confiscated during the house search and arrests, prior notifications, police contacts, charges and convictions, and characteristics of the lead material. CP material was assessed based on the written descriptions in the files; no images were viewed by the raters as this is explicitly prohibited by Dutch Law and Legislation. The CP material was rated for severity of the depicted abuse, expressed in COPINE scores (see "Instruments" section), victim age, and the presence of material depicting violence. A specific category of "extreme content" was created, combining material involving intrusive sexual acts with very young victims (penetrative sex between an adult and a child below 3 years) and/or sadistic material (COPINE 10) and/ or material depicting explicit violence. For all victims, the presence or absence of extreme material was assessed.

Mixed suspects were separated from CP-only suspects based on current or prior association with direct victimization. This association was defined as any notification (prior or current), police contact, charge, or conviction for any sexual offense involving direct victimization. CP-only suspects were the suspects with current suspicion of only CP possession without any prior association with direct victimization.

Subsequently, the raters assessed the outcome of the completed investigation as it was documented in the police files for the records they had not coded the predictors for. First, presence or absence of evidence for CP possession and/or direct victimization was assessed. All production of visual CP material was counted as direct victimization, as the production of CP material inherently increased the number of children depicted in pornographic material and thus increased the number of victims, even if there was no direct physical contact with the child (e.g., filming from a distance, morphing of regular pictures). Second, the content of the CP material found in the suspect's possession was coded based on the written descriptions of a sample of this material provided in the police file.

Finally, both raters double coded a number of randomly picked variables from the files that the other rater had previously coded. A total of 300 demographic, criminological, and offense-specific variables were double coded (e.g., age of the offender, number of prior offenses committed by offender, and total number of CP images in possession) as well as the characteristics of 230 individual CP pictures were double coded (e.g., number of minor victims depicted, youngest estimated age of victim, gender of victim, COPINE gradation, and level of violence depicted). The interrater reliability for all variables used in this study was good to excellent. The ICC for the ordinal and continuous variables ranged from .81 (p = .004) to 1.0 (p < .001); the kappa for the categorical variables ranged from .79 (p < .001) to 1.0 (p < .001). Of note, the inter rater reliability regarding CP content referred to the coding of the descriptions present in the file and not to the coding of the CP material itself.

Instruments

Dutch law-enforcement graded the severity of CP images in terms of (a) age of the victim, (b) intrusiveness of the sexual act, and (c) the use of violence additional to the sexual act. In the current study, sexual intrusiveness was categorized according to the image typology that was developed by the project "Combating Paedophile Information Networks in Europe" (COPINE; see Table 1). COPINE describes a continuum of increased deliberate sexual victimization of minors from a 1 to 10 level, from pictures indicative of "clothed children, through nakedness and explicit erotic posing to pictures of a sexual assault on the child photographed . . . or other gross acts of obscenity" (Taylor et al., 2001, p. 100).

Sadism and/or bestiality (Level 10) constitutes the most intrusive level on the COPINE scale. However, COPINE Level 10 also includes all levels and forms of violence. By ranking all violence as Level 10, it would become impossible to differentiate between the sexual intrusiveness and the use of violence. To measure violence independently, the COPINE scale was adjusted regarding Level 10a (child being tied, bound, beaten, whipped, or otherwise subjected to something that implies pain), which was extracted from the COPINE scale and was considered as a separated variable for each image to cover all assessment criteria of the AAPF. The depiction of violence was rated on a 3-point scale, ranging from no physical violence to the use of physical violence in the form of pushing and pulling, holding down, occasional slapping, commanding and scolding, and painless fetish-related rituals (bondage, blindfolding) to the display of severe physical violence in the form of beating, kicking, smothering, and painful or extreme fetish-related rituals (clams, whipping, urinating, and defecating on the child).

Statistical Analyses

Regarding the relationship between suspect type and the outcome of direct victimization regarding all notifications, a 2 × 2 Pearson chi-square analysis was conducted, comparing CP-only suspects (n = 83) and mixed suspects (n = 67) to the outcome of

Table 1. Adjusted COPINE Typology of Pedophile Picture Collections, Based on Taylor, Holland, and Quayle (2001).

1	Indicative	Nonerotic and nonsexualized pictures showing children in their underwear, swimming costumes, and so on from either commercial sources or family albums; pictures of children playing in normal settings, in which the context or organization of pictures by the collector indicates inappropriateness
2	Nudist	Pictures of naked or seminaked children in appropriate nudist settings, and from legitimate sources
3	Erotica	Surreptitiously taken photographs of children in play areas or other safe environments showing either underwear or varying degrees of nakedness
4	Posing	Deliberately posed pictures of children fully, partially clothed, or naked (where the amount, context, and organization suggests sexual interest)
5	Erotic posing	Deliberately posed pictures of fully, partially clothed or naked children in sexualized or provocative poses
6	Explicit posing	Emphasizing genital areas where the child is posing either naked, partially or fully clothed
7	Explicit sexual activity	Involves touching, mutual and self-sexual activity masturbation, oral sex, and intercourse by child, not involving an adult
8	Assault	Pictures of children being subjected to a sexual assault, involving digital touching, involving an adult
9	Gross assault	Grossly obscene pictures of sexual assault, involving penetrative sex, masturbation, or oral sex involving an adult
10	Sadistic/bestiality	a. Pictures showing a child being sexually sadistically tortured[a] b. Pictures where an animal is involved in some form of sexual behavior with a child

Note. COPINE = Combating Paedophile Information Networks in Europe.
[a]Other levels of violence (tied, bound, beaten, whipped, or otherwise subjected to something that implies pain) including fetish-related rituals were rated separately from sexual intrusiveness.

direct victimization, yes ($n = 68$) or no ($n = 82$). To rule out a possibly confounding effect of a current notification of direct victimization on the outcome of direct victimization, an additional analysis was conducted regarding the relationship between suspect type and the outcome of direct victimization including only the notifications exclusively for CP possession ($n = 96$). A 2×2 Pearson chi-square analysis was conducted, comparing the suspects with direct victimization in their history ($n = 13$) and suspects without direct victimization in their history ($n = 83$) to the outcome of direct victimization, yes ($n = 15$) or no ($n = 81$).

Regarding the prediction of the remaining undetected direct victimization within the group of CP-only suspects, the predictive validity of 18 early identifiable sociodemographic and offense-related characteristics with a prevalence of 10% or higher and 15% or less missing values was calculated by means of receiver operating characteristic (ROC) curve analysis for the continuous variables and odds ratio's for the dichotomous variables. To assess the explained variance, the subset of variables significantly

associated with direct victimization was entered into a binary logistic regression analysis, with direct victimization as the binary criterion and the associated variables as predictors. Differences between the mixed suspects and CP-only suspects were analyzed by means of Pearson chi-square analyses. A Bonferroni correction of $p = .01$ was applied to control Type I error rates due to multiple comparisons across the Pearson chi-square analyses within the categories of demographic variables, judicial history, and characteristics of the CP material. The data collected for this study were entered into the Statistical Package for the Social Sciences Software, Version 21 (IBM SPSS-21, 2012), which was also used for data analysis.

Results

The final judicial outcome of 81% ($n = 122$) of the included cases was retrieved at the completion of the study, with 19% ($n = 28$) of the cases still pending. Of the completed cases, 8% ($n = 10$) were dismissed by the police and did not lead to an official charge. In the majority of these cases, downloaded CP lead material could be linked to the suspect, but the police investigation did not reveal further possession of CP. Of the cases that did go to trial, 68% ($n = 83$) resulted in a conviction and 24% ($n = 29$) resulted in a court dismissal. Court dismissals do not always pertain to a lack of evidence as the Dutch court allows for a range of discretionary dismissal, such as a minor offense, a recent conviction, an official warning, an untraceable suspect, and so on. The nature of the dismissals could not be retrieved.

Most commonly, CP offenders were born in the Netherlands (78%), above 40 years old (56%), employed (71%), and living alone (51%). A third had prior charges or convictions for a general criminal offense. The content of the CP collections was quite diverse. The large majority of offenders possessed CP material with victims between 6 and 12 years old (82%), and one in two offenders possessed pictures of children between 3 and 5 years old (50%). Most offenders possessed material depicting explicit sexual acts (88%, COPINE 7 or higher), and material depicting sexual acts between a child and an adult (77%). Of note, most offenders also possessed material depicting nonexplicit sexual images/seminudity (74%).

Differences Between Mixed Suspects and CP-Only Suspects

Confirming group assignment, a much larger percentage of direct victimization was revealed in the mixed suspects (90%) than in the CP-only suspects (10%), $\chi^2(1, N = 150) = 95.54$, $p < .001$, $\Phi = 0.80$. Direct victimization in this group included 57 cases of contact sexual abuse, 27 cases of online offending, and 30 cases of CP production. Regarding the subgroup of notifications that started out with the sole suspicion of CP possession ($n = 96$), a similar effect was found. A significantly larger percentage of direct victimization was revealed for the suspects with prior association with direct victimization (54%) than for suspects without prior association with direct victimization (10%), $\chi^2(1, N = 96) = 16.66$, $p < .001$, $\Phi = 0.42$. Direct victimization in this group included 7 cases of contact sexual abuse, 7 cases of online offending, and 9 cases of

Table 2. Characteristics of CP-Only and Mixed Suspects.

	CP-only (n = 83) % (n)	Mixed (n = 67) % (n)	OR	95% CI
Age	M = 42.4 (10.5)	M = 43.0 (12.6)		
Single, living alone	54 (44)	51 (34)	.95	[.71, 1.27]
Foreign born	27 (22)	22 (15)	.91	[.66, 1.25]
Unemployed	23 (18)	34 (21)	1.32	[.91, 1.91]
Resident underage (step)children	14 (11)	16 (11)	1.11	[.71, 1.75]
Child related work or activities*	8 (6)	26 (15)	2.20	[1.10, 4.39]
Prior police contact/charges/convictions				
Noncontact sexual offenses	13 (11)	27 (18)	1.57	[.96, 2.57]
Violent offenses	12 (10)	21 (14)	1.39	[.85, 2.28]
Nonsexual nonviolent offenses[†]	25 (21)	42 (28)	1.43	[1.00, 2.05]
Outcome of investigation				
CP possession*	83 (69)	67 (45)	.64	[.42, .99]
Direct victimization**	10 (8)	90 (60)	7.77	[4.04, 14.96]
Characteristics of CP collections	n = 66	n = 45		
More than 1,000 CP files*	53 (35)	24 (11)	.63	[.47, .85]
Intrusiveness COP9 or higher*	76 (50)	51 (23)	.62	[.41, .92]
Victims < 5 years old	42 (28)	29 (13)	.80	[.59, 1.07]
Violence	17 (11)	9 (4)	.78	[.55, 1.11]
Extreme[a] CP material[†]	33 (22)	13 (6)	.68	[.51, .89]

Note. COPINE levels refer to the adjusted version of the COPINE scale, with level 10a extracted and rated separately (see Table 1). COPINE = Combating Paedophile Information Networks in Europe; CP = child pornography; OR = odds ratio; CI = confidence interval.
[a]Extreme CP material refers to material depicting violence and/or COP10 and/or COP9 with children below the age of 3 years.
[†]$p < .05$. *$p < .01$. **$p < .001$.

CP production. Table 2 provides an overview of demographic variables, judicial history, and characteristics of the possessed CP collections for mixed suspects and CP-only suspects.

Prediction of Outcome Among CP-Only Suspects

Within the group of CP-only suspects ($n = 83$), the validity of the 18 early identifiable variables listed in Table 3 was assessed regarding their prediction of direct victimization. This explorative search for variables yielded four significant associations. Specifically, CP-only suspects for whom the investigation revealed direct victimization were more likely to have had prior police contacts, charges, or convictions concerning noncontact sexual offenses (37.5%) than the other CP-only suspects (10.7%), $\chi^2(1, N = 83) = 4.53$, $p = .03$, odds ratio = 5.03, 95% confidence intervals (CI) = [1.01, 25.09]. They were also more likely to have more than two computers confiscated during the house search (87.5%) than the other CP-only suspects (26.7%), $\chi^2(1, N = 83) = 12.19$, $p < .001$, odds ratio = 19.25, 95% CI = [2.23, 166.40]. Furthermore, two variables

Table 3. Early Identifiable Variables of 83 CP-Only Suspects and Their Predictive Validity for the Outcome of Direct Victimization Expressed as ORs or AUCs With 95% CIs.

Variables	OR [95% CI]	p
Lead material characteristics		
More than one lead to the same suspect (yes/no)	3.49 [.73, 16.74]	.10
Lead IP was not a home address (work, hotel etc.) (yes/no)	.68 [.08, 6.02]	.73
Contained video material (yes/no)	.88 [.20, 3.76]	.86
Depicted boys only (yes/no)	2.44 [.43, 14.00]	.30
Contained children below 5 years old (yes/no)	5.25* [1.15, 23.94]	.02
Contained extreme[a] CP material (yes/no)	5.83* [1.14, 29.72]	.02
Suspect characteristics		
Age (scale)	AUC = .52 [.31, .72]	.87
Single, living alone (yes/no)	1.50 [.33, 6.72]	.60
Foreign born (yes/no)	1.77 [.39, 8.11]	.46
Unemployed, receiving unemployment benefits (yes/no)	.87 [.79, .96]	.11
Access to (step)children registered at home address (yes/no)	.89 [.81, .96]	.24
Suspect criminal history		
Prior noncontact offending (police contact, charges, convictions) (yes/no)	5.03* [1.01, 25.09]	.03
Prior nonsexual violent offending (police contact, charges, convictions) (yes/no)	1.05 [.12, 9.53]	.97
Prior nonsexual nonviolent offending (police contact, charges, convictions) (yes/no)	.98 [.18, 5.29]	.98
Total number of prior police and/or judicial contacts (ordinal: 0 = 0; 1 or 2 = 1; > 2 = 2)	AUC = .66 [.45, .87]	.14
Confiscated at house search		
More than 2 computers (yes/no)	19.25*** [2.23, 166.40]	<.001
More than 2 external hard drives (yes/no)	3.17 [.72, 13.96]	.11
More than 100 nondigital data-carriers (yes/no)	2.57 [.59, 11.24]	.20

Note. COPINE levels refer to the adjusted version of the COPINE scale, with Level 10a extracted and rated separately (see Table 1). CP = child pornography; OR = odds ratio; AUC = areas under the curve; CI = confidence interval; COPINE = Combating Paedophile Information Networks in Europe.
[a]Extreme CP material was defined in the "Method" section and refers to material depicting violence and/or COP10 and/or COP9 with children below the age of 3.
*p < .05. ***p < .001.

regarding the content of the lead material were significantly associated with direct victimization: CP-only suspects for whom the investigation revealed direct victimization were more likely to have lead material containing victims below the age of five (50.0%) than the other CP-only suspects (16.0%), $\chi^2(1, N = 83) = 5.37$, $p = .02$, odds ratio = 5.25, 95% CI = [1.15, 23.94], and were more likely to have lead material containing extreme content as described in the "Method" section (37.5%) than the other CP-only suspects (9.3%), $\chi^2(1, N = 83) = 5.41$, $p = .02$, odds ratio = 5.83, 95% CI = [1.14, 29.72].

A binary logistic regression model including these four variables was statistically reliable, $\chi^2(4, N = 83) = 20.44$, $p < .001$, and the predictors, as a set, reliably distinguished CP-only suspects with an outcome of direct victimization from CP-only suspect without this outcome. The model accounted for almost half of the variance (Nagelkerke's $R^2 = .47$), producing an overall correct classification rate of 92%. Of the 75 CP-only suspects with no direct victims, 72 were correctly classified (96%), of the 8 CP-only suspects with an outcome of direct victimization, and 4 were correctly classified (50%). Of the 7 CP-only suspects identified by these variables, the outcome of the investigation showed direct victimization in 4 cases (57%).

Discussion

The general aim of the present study was to explore the potential of prioritizing CP notifications at the suspect level (i.e., ahead of full investigation). More specifically, we tested the predictive power of any prior association with direct victimization to identify those cases that upon investigation turned out to involve direct victimization. The findings strongly suggests that the presence of any prior association with direct victimization is a good indicator of an outcome of direct victimization and hence may serve as a viable criterion for prioritization. Among all notifications, it was found that 90% of the investigations pertaining to mixed suspects resulted in charges for direct victimization, versus 10% of the cases concerning CP-only suspects. Regarding the notifications exclusively for CP offenses, it was found that 54% of the investigations considering mixed suspects (with prior police contacts/charges/convictions for direct victimization) resulted in charges for concurrent direct victimization versus 10% of the cases concerning CP-only suspects. These observations can be regarded as empirical support for a criterion for prioritization that is already commonly used in police practice.

Exploratory analyses among the CP-only suspects (without prior association with direct victimization) revealed four early identifiable variables that were predictive of the outcome of direct victimization among this group: (a) prior police contacts, charges, or convictions regarding noncontact sexual offending (i.e., CP possession, exhibitionism); (b) more than two confiscated computers during the house search, and lead material containing (c) young victims (below 5 years old); or (d) extreme content (intrusive or violent). These results suggest a small subgroup of deeply invested downloaders among the CP-only suspects, who are at a higher risk to cross the line to the direct victimization (Quayle & Taylor, 2003). In line with Babchishin et al. (2014), the results in this subgroup of CP-only suspects suggested greater sexual deviance. However, there was no indication of greater antisociality/impulsivity as suggested by Babchishin et al. and Long et al. (2012; for example, more prior convictions and greater access to children). Of note, the incidence of direct victimization among CP-only suspects in the current study was low and the positive predictive power of the four identified variables was correspondingly modest. Clearly, cross-validation in larger samples is needed to draw firm conclusions about the practical predictability of direct victimization among CP-only suspects.

To optimize risk assessment and intervention, future research should also aim to assess developmental routes toward combined CP offending and direct victimization. Although it is possible that the group of mixed offenders mainly consist of the formerly "offline" contact offenders who found new additional ways of offending through the Internet, as suggested by Seto and Hanson (2011), the group of mixed offenders could also include a subgroup of deeply invested initial CP-only offenders who crossed the line to direct victimization, following the escalation theory (Quayle & Taylor, 2003). The escalation theory poses that the anonymity of the Internet, combined with the high degree of sexual arousal that results from online CP consumption, lowers internal restraints that would normally inhibit acting on inappropriate sexual urges, and forms a possible catalyst to direct victimization.

In future research, inclusion of the assessment of the nature of each suspect's first known sexual offense, may help disentangle developmental routes, for example, differentiating between mixed offenders who started with CP offenses and mixed offenders who started with direct victimization.

The present findings regarding the characteristics of the CP collections were partly consistent with prior research. The small subgroup of CP-only suspects who turned out to have directly victimized a child downloaded the most deviant lead material, that is, the CP material that formed the basis for the notification. However, the total group of CP-only suspects possessed significantly more material (consistent with Long et al., 2012), but also more serious material than the total group of mixed suspects (contradicting Long et al., 2012). Noteworthy is that in a third of cases, the charges of CP possession regarding the mixed suspects were dropped because the material they possessed was either not pornographic (as only explicitly sexual material is illegal in The Netherlands) or the victims depicted were not clearly below 18 years old. These cases were not included in the analysis but would have added to a larger difference regarding seriousness of the content of CP material between mixed and CP-only suspects. It is apparent that the relationship between direct victimization and CP content specifically warrants further investigation.

The question whether the possession of considerably more extreme CP material truly reflects greater sexual deviance as compared with those who possess less extreme material but have actually abused children in real life raises a complex issue. The answer depends to a great extent on how sexual deviance is defined and measured (Seto, Cantor, & Blanchard, 2006). It is, however, becoming increasingly clear that different motivations and routes toward CP offending appear to exist for different types of offenders (Beech, Elliott, Birgden, & Findlater, 2008; Krone, 2004; Lanning, 2001; Seto et al., 2006). These different motivations might be reflected in the characteristics of the preferred CP material. In terms of the Incentive Theory of Sexual Motivation (Both, Everaerd, & Laan, 2007; Toates, 2009), which defines sexual desire as the emotional reaction to a competent sexual stimulus, the basic nature of the competent sexual stimuli for subgroups of CP offenders may differ. More specifically, typical CP-only offenders might be more voyeuristically interested in *pornographic images involving children* whereas the typical offline contact offender "branching out" on the Internet might be more sexually interested in *children*. Consequently, CP-only offenders may be unlikely

to seek out (sexual) contact with children in real life. Formerly offline contact offenders, on the contrary, may own pictures of the children that form their objects of desire in real life, but those pictures do not necessarily have to be (extremely) pornographic.

The current study has a number of limitations that limit the generalization of the results. Findings are based on a small sample, especially with respect to the number of CP-only suspects who were found to have directly victimized a child. Cross-validation of results in larger samples is therefore warranted. Moreover, our sample was collected in the district Amsterdam-Amstelland and may not be representative for all of The Netherlands or other countries. However, mitigating these concerns somewhat, comparison with the national U.S. sample from 2006 in Wolak et al. (2011) yielded similar differences between the offender and CP characteristics. The only substantive differences between the Wolak et al. sample and the current sample were that the Dutch CP offenders owned larger picture collections, and more of the Dutch offenders produced CP material. These differences may in fact be related to our sample being of more recent date (2005-2010) and having wider and more often broadband Internet access than the U.S. sample (Schwab, 2012). Another limitation of the current study is that although the prior charges and convictions were assessed from a national database, prior police contacts could only be assessed from the Amsterdam-Amstelland police database. This database referred exclusively to police contacts in the stated jurisdiction and dated back no more than 5 years prior to the index notification (in accordance with Dutch privacy laws). Finally, only a sample of the offender's total CP collection (as reported in Table 2) was described in the files. These samples were collected by the investigating officer and were aimed to give an overview of the offender's collection. There was no more specific information on the composition of the total collection available. This limitation may have invited an overemphasis on the most severe content, as those pictures were more likely to be included in an overview of the collection even when only a few of these pictures were present.

Notwithstanding these limitations, the findings suggest that the distinction between mixed and CP-only suspects is a useful one. Prior association with direct victimization increased the likelihood of a current outcome of direct victimization. For CP-only suspects, risk factors ahead of investigation were identified that predicted direct child victimization as the outcome of the subsequent police investigation.

Declaration of Conflicting Interests

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