Online Sexual Solicitation of Minors: How Often and between Whom Does It Occur?

Anja Schulz[1,2], Emilia Bergen[3], Petya Schuhmann[1], Jürgen Hoyer[2], and Pekka Santtila[3]

Abstract

Objectives: This study examined how frequently online sexual solicitation of adolescents and children by adults occurs and what characteristics the perpetrators have using a novel methodological approach. *Method:* In an online survey, we investigated the frequency of online sexual solicitation exhibited by adult Internet users ($N = 2,828$), including a subgroup recruited on pedophilia-related websites. Perpetrators soliciting adolescents were compared to those soliciting children concerning solicitation outcomes (e.g., cybersex) and demography. *Results:* In total, 4.5 percent reported soliciting adolescents and 1.0 percent reported soliciting children. Most solicitors of adolescents and children were from pedophilia-related websites (49.1 and

[1] Department of Forensic Psychiatry and Psychotherapy, University of Regensburg, Regensburg, Germany
[2] Institute of Clinical Psychology and Psychotherapy, Technische Universität Dresden, Dresden, Germany
[3] Department of Psychology and Logopedics, Åbo Akademi University, Turku, Finland

Corresponding Author:
Anja Schulz, Department of Sport Science, Faculty of Psychology, Education and Sport Science, University of Regensburg, Universitaetsstrasse 31, 93053 Regensburg, Germany.
Email: anja.schulz@ukr.de

79.2 percent). Solicitation frequently involved sexual outcomes (47.5 percent), which also followed nonsexual interaction. The minors' age did not affect the odds of sexual outcomes. A substantial proportion of perpetrators were female. *Conclusions:* This study offers unprecedented data on the number of adults soliciting minors. Although adolescents were more often target of solicitation, the risk of sexual outcomes was equally high in solicitation of children, suggesting younger children to be considered in prevention efforts as well. Nonsexual interactions resulting in sexual outcomes need to be more closely examined to inform appropriate prevention efforts. Moreover, awareness should be raised about females as perpetrators.

The Internet provides young persons with abundant possibilities while also increasing the exposure to risks, such as being solicited for sexual purposes (Berson 2003; Dombrowski, Gischlar, and Durst 2007). Online sexual solicitation concerns acts "of encouraging someone to talk about sex, to do something sexual, or to share personal sexual information" (Ybarra, Espelage, and Mitchell 2007:32). The effects on victims have been shown to include anxiety, post-traumatic stress disorder, depression, and developmental disruption (Dombrowski et al. 2004; Wells and Mitchell 2007). Consequently, online sexual solicitation has gained growing attention in research and from law enforcement over the past one and a half decades.

The Internet is an integral part of everyday life activities. The upsurge of routine Internet use among youth (Livingstone et al. 2011) affords solicitation offenders an unlimited source of potential victims at any time or place (Quayle et al. 2014), while capable guardians are often lacking online (Gallagher et al. 2006; Medaris and Girouard 2002; Wortley and Smallbone 2012). As routine activity theory postulates, crime rates increase when suitable targets, absent guardians, and motivated offenders converge (Cohen and Felson 1979). This has been applied effectively to various forms of cybercrime, such as fraud or bullying (Holt and Bossler 2008; Navarro and Jasinski 2012; Pratt, Holtfreter, and Reisig 2010). Plausibly, the Internet may also provide an ideal criminogenic context for sexual solicitation of minors (Choo 2009; Quayle et al. 2012). Deconstructing online sexual solicitation into its basic components may reveal critical areas for intervening

and deriving situational crime prevention measures (Leclerc, Wortley, and Smallbone 2011). Such templates exist for hands-on child sexual abuse (Brayley, Cockbain, and Laycock 2011; Leclerc et al. 2011); yet, fighting crime has to be crime-specific. Thus, the present study specifically investigated components of online sexual solicitation and compared groups of offenders who target adolescents versus children.

Background

The manifestations of online sexual solicitation are changeable as well as multifaceted, and scientific conceptualizations vary (Webster et al. 2012; Whittle et al. 2013). This diversity and the profound methodological challenges, due to the Internet's inherent features (e.g., anonymity; Joinson 2001; Suler 2004), have resulted in sparse and partially inconsistent empirical data on the frequency of perpetrators, their behaviors, and their demographic characteristics (Livingstone et al. 2011; Quayle et al. 2012; Whittle et al. 2013). In youth surveys, the number of self-reported victims of solicitation ranges from 6.5 to 21 percent (Ferreira, Martins, and Goncalves 2011; Jones, Mitchell, and Finkelhor 2012; Livingstone et al. 2011; Wachs, Wolf, and Pan 2012). However, victim reports provide biased estimates, as one offender may solicit numerous victims (Briggs, Simon, and Simonsen 2011; Webster et al. 2012). In contrast, studies on offender samples or reports from law enforcement agencies do not allow deriving offender frequencies, given the indeterminable amount of unreported cases (Leander, Christianson, and Granhag 2008; Wolak, Mitchell, and Finkelhor 2006). Thus, estimating the frequency of individuals who solicit minors online poses a major challenge.

Assessing characteristics of suitable targets has consistently shown victimization to be associated with higher age among adolescents, being female, and being unfamiliar with the offender (Ferreira et al. 2011; Wolak et al. 2006). However, some offenders specifically target boys (Finkelhor, Mitchell, and Wolak 2000; Grosskopf 2010) and very young children (Dowdell, Burgess, and Flores 2011; Webster et al. 2012). It seems critical to investigate if solicitation of adolescents versus children or of female versus male minors differs, as this may have ramifications for prevention measures, such as creating appropriate awareness campaigns.

Concerning outcomes of online sexual solicitation, several facets have been typically investigated including the number of victims and duration of contact as well as the sending and receiving of sexual pictures, engaging in cybersex, meeting off-line, and engaging in sexual activities off-line

(Briggs et al. 2011; Livingstone et al. 2011; Webster et al. 2012; Wolak et al. 2006). These facets reflect the perpetrators' diversity in modus operandi and motivation. Some offenders seek instant sexual gratification and immediately introduce sex into the interaction (Grosskopf 2010; Webster et al. 2012). Others engage in extensive grooming behaviors, establishing trust and compliance, to enact their fantasies or pursue ''mutual affairs'' with victims (Grosskopf 2010; Quayle et al. 2012; Webster et al. 2012). Accordingly, Webster and colleagues (2012) discerned hypersexual offenders seeking sexual gratification from intimacy-seeking offenders striving for relationships with the youth, and from a third group who adapt their strategies to their victims' behavior. Also, Briggs and colleagues (2011) identified fantasy-driven offenders preferring virtual sexual contact and contact-driven offenders who pursue off-line sex. A particularly intricate issue is the role of nonsexual online interaction with minors, which often precedes sexual topics but is not illegal per se (Dombrowski et al. 2004; Lanning 2001). Empirical studies have mostly been limited to sexual online interactions and have not considered nonsexual behaviors (Ferreira et al. 2011; Finkelhor et al. 2000; Wachs et al. 2012). Moreover, empirical investigation of sexual outcomes has yielded varying evidence, depending on the data source. In youth surveys, sexual outcomes are only reported by few, often yielding single-digit case numbers (Livingstone et al. 2011; Wolak et al. 2006). In contrast, sexual outcomes are frequently reported in offender or law enforcement samples (Briggs et al. 2011; Malesky 2007; Quayle et al. 2012). This may be an artifact, as legal prosecution may require the occurrence of such outcomes.

In addition to their diverse modus operandi and motivations, solicitation offenders are heterogeneous concerning demography (Briggs et al. 2011; Choo 2009; Mitchell, Wolak, and Finkelhor 2005; Stanley 2001; Webster et al. 2012). Again, findings on perpetrator characteristics vary depending on the method, as the number of female offenders shows: While their proportion is substantial in youth surveys (16 to 33.3 percent; Finkelhor et al. 2000; Wolak et al. 2006), it is almost nonexistent in offender samples (0 to 4 percent; Briggs et al. 2011; Gallagher et al. 2006; Webster et al. 2012). Arguably, the victims' perception may be wrong due to deception or fantasy play by the perpetrator (Stanley 2001; Suler 2004; Wolak, Finkelhor, and Mitchell 2004). In contrast, studies on reports from law enforcement agencies or studies sampling offenders may be biased because female offenders are underreported (Wijkman, Bijleveld, and Hendriks 2010).

The highlighted challenges stress the need to employ a diversified conceptualization of online sexual solicitation and explore it from different

perspectives to gain insight into the processes from which we may derive prevention measures. Reviewing the literature, there may be an opportunity for a methodological approach that focuses on questioning adults from the general population to obtain their experiences of having solicited a minor online. This may close the gap between law enforcement samples and victim data. Thus, the current study addressed several questions using a non-probability sample consisting of adult Internet users from Germany, Finland, and Sweden, as well as a group recruited on websites concerning pedophilic sexual interest.

We investigated if the age of the targeted minor (adolescent vs. child), the sex of the targeted minor (female vs. male), and the recruitment website (pedophilia-related vs. general) yielded differences concerning the frequencies and outcomes of online sexual solicitation as well as perpetrator characteristics. First, we assessed the frequency of self-reported online sexual solicitation of minors overall. Second, we investigated solicitation outcomes including the number of contact persons, contact duration, and sexual outcomes. We also explored how frequently sexual outcomes resulted from nonsexual interactions. Third, we explored demographic characteristics of online solicitors. Therein, we investigated an effect of legal deterrence based on the incongruent legislation between the countries where this study was conducted: We expected online sexual solicitation to be less frequent in Sweden and Finland, where legislation concerning online sexual solicitation has been established, than in Germany, where no accordant legislation is established to date.

Method

Sampling Procedure

The sampling procedure targeted adult Internet users in Germany, Sweden, and Finland. Accounting for this population of interest, sampling was conducted online. We identified websites offering social interaction via common search engines (Google, Yahoo!, Bing, and Ask) and various search terms indicating interaction (e.g., "forum," "community," "network," and "chat") in the three survey languages, German, Finnish, and Swedish, and additionally in English. To be included in this study, websites had to have sections in one of the survey languages. Other exclusion criteria were a lack of activity within one month prior, or terms and conditions prohibiting the study's promotion. Using a comparable approach, Ridings, Gefen, and Arinze (2002) assumed external validity for their online

community sample. This procedure resulted in 126 websites (Germany: $n = 95$; Sweden: $n = 15$; Finland: $n = 16$), including social networks (e.g., Facebook, Twitter), online communities, blogs, forums, and chat websites with different thematic foci (e.g., news, health, lifestyle, sex, dating, computer, gaming, music, art). Also, the survey was spread via the e-mail server of Åbo Akademi, Finland. In addition, it was advertised on two German websites on pedophilic sexual interest: One promoted a therapy project for self-identified pedophiles and the other was an online community for pedophiles, which offered the opportunity for registered members to interact. On all websites, posts with the survey introduction were integrated in existing threads or posted as new threads to promote the study between July and December 2012. Posts were checked bimonthly to grant continued visibility and responses to feedback. Posts on all websites contained distinct survey links to monitor participation.

Participants

The sample was a non-probability sample of adult Internet users from the general public who responded to the online survey. Of 7,733 accesses to the survey, 4,074 cases (52.7 percent) were removed due to being empty or invalid (i.e., two standard deviations below mean response times for questionnaire pages, indicating they had not read the items). Further 831 participants (10.7 percent) failed to answer critical items on online interaction and were dismissed from the present study.

A total of 2,828 participants (36.6 percent) were included in the study. Participants were predominantly sampled in Germany ($n = 1,725$; 61.0 percent), followed by Finland ($n = 991$; 35.0 percent) and Sweden ($n = 112$; 4.0 percent). The sample consisted of 1,394 men (49.3 percent) and 1,434 women (50.7 percent) with age ranging from 18 to 80 ($M = 28.4$, $SD = 9.8$). Within the sample, 78.8 percent had at least 12 years of formal education, 44.8 percent of the participants were single, and 10.0 percent were unemployed at the time of the study. Moreover, 386 participants (13.6 percent) were recruited on the pedophilia-related websites and 2,442 participants (86.4 percent) on other general websites.

Instrument

The survey was constructed in English and translated into German, Finnish, and Swedish based on a translation–backtranslation procedure. It was submitted to a cognitive pretest (German: $n = 12$; Swedish: $n = 5$; Finnish:

$n = 5$). It was also tested on popular browsers (i.e., Internet Explorer, Mozilla Firefox, Google Chrome) to eliminate technical errors.

Online sexual solicitation. The items on online sexual solicitation were constructed for this survey and referred only to interaction with strangers. Contacts that were exclusively professional were excluded. Participants were asked "Have you communicated online with a person you have not known off-line beforehand in the past year" (*Yes/No*). If they confirmed, they were asked to "Please state the gender and age of the persons you communicated with" by multiple-selecting contact sex (*female*, *male*) and contact age (adult: *18 or older*, adolescent: *14 to 17*, child: *13 or younger*). The age categories corresponded with the German age of consent (14 years; compared to Finland: 16 years, and Sweden: 15 years) and age of legal majority (18 years; equal to Finland and Sweden). If uncertain, participants were asked to respond according to "who you thought you were talking to." In the next step, participants were asked, "have you communicated about sexual topics with these persons" (*Yes/No*). Communication about sexual topics was defined as "making sexually insinuating or suggestive comments, sexual innuendo or flirting, conversing about sexual preferences, activities, pornography, or the like." If they confirmed, they reported the age and sex of the individuals with whom they had sexual online contact.

Outcomes. The survey included questions regarding the number of contact persons, duration of contact as well as online and off-line outcomes during or succeeding online interaction. After indicating sex and age of their online contacts, participants reported, "with how many persons in these categories were you in contact and for how long" by multiple-selecting the number (*0*, *1*, *2–5*, *6–10*, *11–20*, and *more than 20*) and duration (*seconds*, *minutes to hours*, *days to weeks*, and *more than a month*) for each reported sex and age combination. Online and off-line outcomes included sending sexual pictures of oneself or receiving sexual pictures portraying the contact, engaging in cybersex, meeting off-line, and engaging in sexual activities off-line. Importantly, items on these outcomes concerned a single contact (target) to reduce memory bias and complexity of the survey. The target was defined as the longest contact from the youngest age category (e.g., *someone of 13 years or younger*) a participant had reported.

Participants were assigned to the online sexual solicitation group if they confirmed online sexual interaction or a sexual outcome (i.e., sending or receiving sexual pictures, cybersex, or sexual activity off-line) with at least one adolescent or child contact.

Participant demography. The survey contained single-item questions concerning age, sex, relationship, education, and employment status. Survey links provided the country from where the participant accessed the survey and whether the recruitment website was a pedophilia-related or a general website.

Procedure

The link in the promotional posts directed participants to the survey on a secure online server (https://www.soscisurvey.de). The introduction informed participants that the study assessed social and sexual online behaviors and factors motivating such behaviors. The instruction further advised participants about the minimum age for participation (18 years) and the incentive (a lottery for 1 of 10 vouchers per country, each equivalent to US$30 for Amazon). Participants were informed that the survey was anonymous. The program did not record any identifying information, such as IP addresses or referring browser.

Participants were informed that they implicitly consented to the use of their data when they proceeded to the survey and that they could leave the survey at any time. The program did not allow navigating backward between survey pages. Upon finishing the survey, a link forwarded participants interested in the lottery to another page on the same secured browser to record email addresses separately from survey data. An institutional e-mail address and logo were displayed on all survey pages. The study was approved by the ethics committees of the Deutsche Gesellschaft für Psychologie and Åbo Akademi, Finland.

Data Preparation and Analysis

The data were analyzed with IBM$^{©}$ SPSS$^{©}$ Statistics 22 (International Business Machines Corp 2013). All items yielded categorical data, except for the variable age. Group comparisons were conducted using χ^2 tests and analyses of variance with odds ratios (ORs) and Cohen's d as respective effect sizes (Cohen 1988; Fleiss 1994). Exact binomial tests for alternative data were conducted to test observed distributions of contact age and contact sex against fair distributions ($p_0 = .5$, $p_1 = .5$; $\alpha = .05$).

Results

Frequency of Online Sexual Solicitation

Within the sample, 1,393 (49.3 percent) participants reported online interaction with a stranger. Of these, 779 (55.9 percent) reported sexual online

Table 1. Frequencies and Chi-Square – Statistics of Age of Online Contacts as a Function of Recruitment Website.

| | | Recruitment Website | | |
| | Total (N = 779) % (n) | General (n = 595) % (n) | Pedophilia (n = 184) % (n) | |
Age of online contact				χ^2 (df = 1)
Exclusive age category[a]				
Adult	82.4 (642)	89.7 (534)	58.7 (108)	93.50***
Adolescent	3.0 (23)	2.2 (13)	5.4 (10)	5.18*
Child	0.5 (4)	0.2 (1)	1.6 (3)	5.88*
Adult and adolescent	10.9 (85)	7.1 (42)	23.4 (43)	38.46***
Adult and child	0.6 (5)	0.0 (0)	2.7 (5)	16.27***
Adolescent and child	0.4 (3)	0.2 (1)	1.1 (2)	3.09
All age-groups	2.2 (17)	0.7 (4)	7.1 (13)	26.91***
Aggregated age category[b]				
Adult total	96.1 (749)	97.5 (580)	91.8 (169)	12.04***
Adolescent total	16.4 (128)	10.1 (60)	37.0 (68)	73.91***
Child total	3.7 (29)	1.0 (6)	12.5 (23)	51.78***

Note: N = 779. df = degrees of freedom.
[a]Exclusive age category refers to any possible combination of reported age categories on the multiple-choice item (i.e., a participant can be included in only one group). [b]Aggregated age category refers to the frequency of reported age categories independent of whether other age categories were also reported (i.e., participants may be included in multiple groups).
*p < .05. ***p < .001.

interaction or sexual outcomes with contacts of different age groups (Table 1). While most participants reported sexual interaction with other adults only (n = 642; 82.4 percent), 137 participants (17.6 percent) reported sexual solicitation of at least one minor.

As shown in Table 1, 128 participants (16.4 percent) reported soliciting adolescents. Twenty-nine individuals (3.7 percent) reported soliciting children. Of the entire sample (N = 2,828), this accounted for 4.5 and 1.0 percent, respectively. When analyzing the proportion of participants based on their youngest contact, there was a significantly larger proportion of solicitation toward adolescents than toward children, exact binomial p < .001.

Concerning the contact sex, 90 participants (65.7 percent) reported soliciting female minors, and 72 participants (52.6 percent) reported soliciting male minors, meaning that 18.2 percent interacted with minors of both sexes. The comparison between the proportion of participants with female versus male contacts, exempting those with contact to both, yielded no

significant difference, exact binomial $p = .108$. Participants soliciting adolescents did not differ significantly from those soliciting children with regard to the proportion of female contacts (67.6 vs. 58.6 percent, respectively), OR = 1.47, 95 percent confidence interval (CI ; [0.63, 3.42]), or male contacts (51.9 vs. 55.2 percent), OR = 0.88, 95 percent CI [0.38, 1.99].

As shown in Table 1, participants from general websites less frequently reported soliciting adolescents, OR = 0.19, 95 percent CI [0.13, 0.29], and children, OR = 0.07, 95 percent CI [0.03, 0.18], compared to participants from pedophilia-related websites. In fact, participants from pedophilia-related websites comprised 49.1 percent of those soliciting adolescents and 79.2 percent of those soliciting children, while representing a minority (13.6 percent) in the sample. Moreover, participants from pedophilia-related websites (57.9 percent) were significantly less likely to report contact with female minors than participants from general websites (75.4 percent), OR = 0.45, 95 percent CI [0.21, 0.94], but no significant difference emerged concerning contact with male minors (55.3 vs. 49.2 percent, respectively), OR = 1.28, 95 percent CI [0.64, 2.51].

Outcomes of Online Sexual Solicitation

The investigated outcomes included the number of contact persons in the past year, the duration of interaction as well as off-line and online sexual outcomes (Table 2).

Within those interacting sexually with strangers online ($N = 779$), 5.1 percent reported interacting with more than 20 different minors in the past year and 10.9 percent stated they maintained the interaction for several days or longer. Also, 8.2 percent reported a sexual outcome with a minor. Further 2.6 percent reported meeting off-line with a minor without engaging in sexual activities during these meetings. As shown in Table 2, three participants reported a sexual outcome with a minor following exclusively non-sexual online interaction (receiving sexual pictures: $n = 2$; sexual activities off-line: $n = 1$).

Using exact binomial tests, we assessed whether participants soliciting adolescents and participants soliciting children were equally distributed for specific outcomes. Both groups were equally distributed among those reporting online contact with more than 20 minors, $p = .082$. However, participants soliciting adolescents were significantly more prevalent than those soliciting children among those reporting interaction with the minors for several days or longer, $p < .001$; receiving sexual pictures, $p = .035$; sending sexual pictures, $p = .015$; cybersex, $p = .009$; and meeting off-line,

Table 2. Frequency of Online and Off-line Outcomes with Adolescent or Child Contacts.

Contact characteristic	N	Total % (n)	Age of Youngest Online Contact	
			Adolescent % (n)	Child % (n)
Number of contacts > 20	779	5.1 (40)	3.3 (26)	1.8 (14)
Duration > several days	779	10.9 (85)	8.1 (63)	2.8 (22)
Any outcome	779	10.8 (75)	8.7 (60)	2.3 (15)
Sexual outcome	779	8.2 (57)	6.1 (42)	2.2 (15)
Received sexual pictures	471	8.1 (38)	5.5 (26)	2.5 (12)
Sent sexual pictures	429	5.8 (25)	4.4 (19)	1.4 (6)
Engaged in cybersex	622	4.7 (29)	3.5 (22)	1.1 (7)
Met off-line	644	6.9 (48)	5.9 (41)	1.0 (7)
Sexual activity off-line	644	3.6 (23)	2.5 (16)	1.1 (7)
Nonsexual communication[a]	779	0.4 (3)	0.4 (3)	0.0 (0)

Note: N = 779.
[a]Participants who reported having exclusively communicated about nonsexual topics yet still reported sexual outcomes (receiving sexual pictures: $n = 2$; engaging in sexual activity off-line: $n = 1$).

$p < .001$. No significant difference emerged for sexual activities off-line, $p = .093$.

We then changed the reference frame to include only participants who solicited minors ($n = 137$) in order to investigate the odds of outcomes as a function of contact age (Table 3). Analyses revealed that 31 percent of participants who solicited minors reported contact with more than 20 individual minors, 66.9 percent had interactions that lasted several days, and 47.5 percent reported a sexual outcome.

As shown in Table 3, compared to participants soliciting adolescents, participants who solicited children were significantly more likely to report contact with at least 20 individuals of their target age group, OR = 3.07, 95 percent CI [1.27, 7.37], and were also significantly more likely to engage their contact for several days or longer, OR = 2.58, 95 percent CI [1.01, 7.59]. The odds of sexual outcomes were not significantly different between participants soliciting adolescents versus children with the exception of sexual activity off-line: All participants who had met a child off-line reported engaging in off-line sexual activity with them, compared to 44.4 percent of those who met their adolescent contact, OR = 23.18, 95 percent CI [1.24, 433.70].

Table 3. Frequencies and Chi-Square – Statistics of Characteristics of Online Contacts as Function of Age of Youngest Online Contact.

Contact characteristic	Total (N = 137) % (n)	Age of Youngest Online Contact		χ^2 (df = 1)
		Adolescent (n = 108) % (n)	Child (n = 29) % (n)	
Number of contacts > 20	31.5 (40)	26.0 (26)	51.9 (14)	6.87**
Duration > several days	66.9 (85)	63.0 (63)	81.5 (22)	6.76**
Any outcome	62.5 (75)	65.2 (60)	53.6 (15)	1.24
Sexual outcome	47.5 (57)	45.7 (42)	53.6 (15)	0.54
Sexual pictures received	49.4 (38)	44.1 (26)	66.7 (12)	2.82
Sexual pictures sent	39.7 (25)	37.3 (19)	50.0 (6)	0.66
Cybersex	26.6 (29)	26.5 (22)	26.9 (7)	0.00
Meeting off-line	40.0 (48)	44.6 (41)	25.0 (7)	3.42
Sexual activity off-line[a]	53.5 (23)	44.4 (16)	100.0 (7)	7.27**
Nonsexual communication[b]	2.2 (3)	2.8 (3)	0.0 (0)	—

Note: N = 137. df = degrees of freedom.
[a]Percentage of sexual activity off-line out of those who met their contact off-line. [b]Participants who reported exclusively nonsexual interaction yet still reported sexual outcomes (receiving pictures: n = 2; sexual activity off-line: n = 1).
**$p < .10$.

When assessing if the sex of the minor affected the odds of sexual outcomes, no significant difference emerged between participants soliciting males versus females with regard to receiving or sending sexual pictures, engaging in cybersex, or meeting off-line. The group soliciting females (43.3 percent) was significantly less likely to report sexual activities off-line than participants soliciting males (76.9 percent), OR = 0.23, 95 percent CI [0.05, 0.99].

The comparison between participants from general websites and participants from pedophilia-related websites did not yield any statistically significant differences concerning the number of contact persons, the duration of the interaction, or the odds of sexual outcomes.

Demographic Characteristics Associated with Perpetration of Online Sexual Solicitation

The demographic characteristics of participants included age, sex, relationship, education, employment, and country (Table 4).

Table 4. Frequencies and Chi-Square – Statistics of Demographic Participant Characteristics as Function of Age of Youngest Online Contact.

| | | Age of Youngest Online Contact | | |
| | Total (N = 137) % (n) | Adolescent (n = 108) % (n) | Child (n = 29) % (n) | χ^2 (df = 1) |
Participant characteristic				
Age (M, SD)	25.4 (7.8)	24.5 (7.0)	28.5 (9.9)	5.94[a]
Participant sex (% male)	72.3 (99)	69.4 (75)	82.8 (24)	2.02
Country (% German)[b]	86.9 (119)	83.3 (90)	100.0 (29)	5.56
Relationship status (% single)	56.9 (78)	53.7 (58)	69.0 (20)	2.17
Education (% 12 years)	69.8 (74)	72.3 (60)	60.9 (14)	1.11
Employment (% unemployed)	14.2 (15)	10.8 (9)	26.1 (6)	3.45

Note: N = 137. df = degrees of freedom.
[a]F-statistic of univariate analysis of variance (ANOVA). [b]The variable Country was dichotomous, as only German and Finnish participants reported online sexual interaction with minors.

Participants soliciting adolescents were younger than participants soliciting children; however, accounting for different variance, this difference was not statistically significant, $d = 0.52$, 95 percent CI [−1.80, 0.76]. Remarkably, 51.9 percent of participants with adolescent contacts were aged 22 years or younger, that is, they were within a five-year age range from their contacts (age 14 to 17). Concerning participant sex, there was no difference between participants soliciting adolescents versus children. However, the proportion of females in both groups was substantial (soliciting adolescent: 30.6 percent; soliciting child: 17.2 percent). There was no significant difference between participants soliciting adolescents versus children concerning relationship, education, or employment status. As shown in Table 4, all participants soliciting children and 83.3 percent of those soliciting adolescents were recruited on German websites. Any non-German participants were referred from Finnish websites. The proportion of German participants soliciting minors was significantly higher than the proportion from Sweden and Finland combined, exact binomial $p < .001$. This effect persisted when excluding the German pedophilia-related websites, exact binomial $p < .001$.

We then analyzed if the sex of the minor was associated with demographic variables of the solicitors. Contact to male minors was less likely among male (45.5 percent) compared to female participants (71.1 percent), OR = 0.34, 95 percent CI [0.16, 0.76]. Contact to female minors was

equally distributed among male (67.7 percent) and female participants (60.5 percent), OR = 1.37, 95 percent CI [0.63, 2.96]. There was no difference between participants soliciting male versus female minors with regard to participant age, relationship, education, or employment status.

The comparison of participants from general websites to participants from pedophilia-related websites yielded a significant difference only for participant sex: A higher proportion of male participants were identified from pedophilia-related websites compared to general websites (90.8 vs. 49.2 percent), OR = 10.19, 95 percent CI [4.04, 25.70]. No significant differences emerged concerning age, relationship, education, or employment status.

Discussion

The present study investigated the frequency and characteristics of online sexual solicitation of minors using an online survey among adult Internet users from the general public. The frequency of adults who reported soliciting adolescents and children in this study was below the number of self-identified victims in youth surveys (6.5 to 21.4 percent; Ferreira et al. 2011; Jones et al. 2012; Livingstone et al. 2011; Wachs et al. 2012). Yet, substantial proportion of the perpetrators in the present sample reported soliciting multiple minors within a relatively short period of time. This finding concurs with reports from legally apprehended offenders (Briggs et al. 2011; Webster et al. 2012). Thus, it has been discussed that the frequency of solicitation perpetrators cannot be accurately derived from victim numbers (Stanley 2001). Moreover, studies on offender samples and law enforcement accounts cannot provide an estimate of perpetrator frequencies (Whittle et al. 2013). Consequently, rather than contradicting prior evidence from youth surveys, the different methodological approach of the present study provides a supplemental perspective and, as such, offers unprecedented data on the number of solicitation perpetrators among adult Internet users. This emphasizes the benefit of examining online sexual solicitation from diverse methodological perspectives.

A second important finding was that substantially more participants reported soliciting adolescents than children. This replicates previous evidence from both victim and offender samples (Briggs et al. 2011; Jones et al. 2012; Livingstone et al. 2011; Quayle et al. 2012; Webster et al. 2012). It also concurs with studies that showed more adolescents to use the Internet and frequent social sites routinely than younger children (Livingstone et al. 2011). Adolescents are thus more accessible for offenders and,

according to routine activity theory, more suitable targets than children which has significant implications for crime prevention measures, as will be discussed subsequently.

Remarkably, in our sample, we did not find a difference between the numbers of participants soliciting female versus male minors. This contradicted prior findings from youth surveys (Jones et al. 2012; Livingstone et al. 2011; Wachs et al. 2012) and offender samples (Briggs et al. 2011; Webster et al. 2012) that consistently showed more female than male victims. Possible explanations may be derived from the different methodology. Earlier studies found male minors to underreport sexually abusive experiences in general (Cermak and Molidor 1996; Finkelhor 1980). This may cause an underestimation of their prevalence when questioning male and female minors with regard to unwanted or distressing solicitation experiences (Finkelhor et al. 2000; Jones et al. 2012; Livingstone et al. 2011). Moreover, offenders targeting boys have been argued to use less immediate strategies, such as friendship approaches, than offenders with female victims (Grosskopf 2010). A feeling of mutuality or even complicity may result in lower reporting from the male victims and may lead to a decreased likelihood of the offender being apprehended (Grosskopf 2010; Webster et al. 2012). These offenders may be also less likely to be identified in proactive police operations (Mitchell et al. 2005; Webster et al. 2012). In contrast, the present study investigated adults from the general public who solicited minors, a sizable portion of whom were female. This approach may have overcome a potential reporting bias, thus resulting in similar numbers of perpetrators targeting males and females.

Concerning the outcomes of online sexual solicitation, the sexual outcomes investigated in the present study were as frequent as in offender samples (Briggs et al. 2011; Malesky 2007; Quayle et al. 2012). This suggests validity for the present online survey method. Concurrently with previous studies (Jones et al. 2012; Livingstone et al. 2011; Wolak et al. 2006), there was a higher number of participants with adolescent contacts among those who reported sexual outcomes than participants with child contacts. However, our findings also show that, once the online contact was established with the minor, children were at comparable or even higher risk of sexual outcomes as adolescents.

It is noteworthy that the majority of participants soliciting minors, specifically children, were from the small subsample from pedophilia-related websites. While we neither assumed all of these participants to have sexual interest in prepubescent children, nor that none of the participants from general websites did, this finding indicated that the subsample from

pedophilia-related websites posed a higher risk. Surprisingly, when comparing participants from pedophilia-related websites to those recruited on other websites, there was no increased probability of having multiple victims or achieving sexual outcomes. Nonetheless, as they were recruited in pedophilia-related websites, these participants evidently frequented websites addressing deviant interests. It has been discussed that engaging with deviant Internet content shapes attitudes and behavior (Holt, Blevins, and Burkert 2010; Quayle et al. 2012). Similarly to off-line offender networks, virtual communities provide access to specialist skills, potential victims, abuse locations, and psychological rewards for deviant behavior (Cockbain, Brayley, and Sullivan 2014; Wortley and Smallbone 2012). A critical offender-focused prevention may thus be restricting access to such websites (Wortley and Smallbone 2012).

Remarkably, some participants reported sexual outcomes after exclusively nonsexual online communication, although only in very few instances. This stresses that nonsexual interaction may facilitate sexual activity (Berson 2003; Choo 2009) and may serve offenders' fantasy to feel involved in a relationship (Webster et al. 2012). Nonsexual interaction has not typically been considered when investigating solicitation (Jones et al. 2012; Livingstone et al. 2011; Wachs et al. 2012) and is not illegal or malign per se. However, the potential of an escalation to sexual outcomes needs to be addressed when creating preventive interventions. Raising awareness of this behavior would not only be important for potential targets but also for offenders who may not recognize the potential slippery slope in this behavior. Detecting such offenders as early as possible poses a challenge for online law enforcement (Webster et al. 2012) and indicates a need for appropriate training of the respective officers.

Considering demographic characteristics of the perpetrators identified in our sample, participants with adolescent contacts emerged to be a fairly young group. This may have caused the inclusion of several age-appropriate contacts as solicitation. Still, the present study adhered to the age ranges for youth and offenders that were used in previous youth surveys assessing potential victimization (Livingstone et al. 2011; Wachs et al. 2012; Wolak et al. 2006). Moreover, many offenders emerged to be young adults in prior studies (Finkelhor et al. 2000; Wolak et al. 2006).

The substantial proportion of female perpetrators in the present data contradicted studies on offenders which almost exclusively identified male offenders (Briggs et al. 2011; Gallagher et al. 2006; Webster et al. 2012). One reason may be that female offenders are underreported (Wijkman et al. 2010), which may explain the low number of apprehended female

online solicitation offenders (Briggs et al. 2011; Gallagher et al. 2006; Webster et al. 2012). Also, the present study was based on self-report and not immune to false reports, such as faking gender (Suler 2004). However, the proportion of female perpetrators corresponded with numbers derived from victim reports (Finkelhor et al. 2000), which provides credibility to the present results. Our findings suggest that awareness campaigns should include that online solicitors may be young and female as well. These campaigns should be victim focused, but should also alert potential guardians who may overlook or dismiss these contacts as harmless. Furthermore, suitable campaigns should address potential (female) offenders.

The majority of participants soliciting minors were German, which suggests a legal deterrence effect: Sweden and Finland legislated against online sexual solicitation whereas Germany did not. It must also be considered though that, rather than preventing offenses, the legislation has affected the disclosure from perpetrators. Moreover, the pedophilia-related websites, which included the majority of solicitors, were German. However, when exempting pedophilia-related websites, all remaining participants who solicited children and the majority of those soliciting adolescents were also German. Thus, the bias toward German participants is not accounted for by pedophilia-related websites. Also, the lower participation rates from Finland and, particularly, Sweden have to be taken into account. This and the low base rate of the investigated phenomenon may have caused an artifact. Despite these caveats, this finding suggests that legal deterrence is pertinent when considering potential offender-focused measures in situational crime prevention. The three countries in this study show exemplarily that there is no homogeneous legislation concerning Internet use for abusing children, even in the presence of EU guidelines (Davidson et al. 2011; Transcrime 2007). Experts on crime prevention argue that this is a key to enable law enforcement to pursue such offenses within and across countries, as solicitation has no national boundaries (Transcrime 2007).

Scope for Prevention

The present findings can inform ideas for targeted interventions which, according to situational crime prevention theory, would worsen the cost–benefit ratio of committing a crime. One vital area of intervention is victim-focused prevention. For victims, it is their routine online activities that place them at risk (Holt and Bossler 2008; Pratt et al. 2010). Awareness campaigns and trainings may support building resilience and coping strategies (i.e., target hardening as situational crime prevention measure;

Cockbain, Brayley, and Laycock 2011). Importantly, the present results show that this should not only address older female adolescents as potential victims, who have been the main focus to date, but children and boys as well. The shift of routine Internet use to younger age-groups (Livingstone et al. 2011) may place ever younger children in the proximity of offenders, making them suitable targets and nonnegligible addressees of prevention measures as well. It is also important to facilitate disclosure of victimization which, given the contrast of the present results to law enforcement and victim data, appears to be especially pressing for boys.

Another critical area for situational prevention is informing guardians and thereby addressing the monitoring problem that arises from increasingly private and mobile Internet access (Livingstone et al. 2011). Protective software as a physical guardian does not work sufficiently (Bossler and Holt 2009; Transcrime 2007). Interventions need to strengthen social guardians, both in real (parents, teachers, or peers) and virtual (users of platforms that may be used by solicitors) environments. Caretakers often underestimate what children do online, while overestimating their child's knowledge of self-protective means (Chou and Peng 2007; Livingstone et al. 2011; Wolak et al. 2006). This calls for targeted awareness campaigns about the nature of solicitation and solicitors. In the virtual setting, rules of conduct may foster social guardianship and self-regulation (Transcrime 2007), specifically when users are responsible for enforcing these rules themselves (Palasinski 2012).

Study Limitations

The present study has several limitations. The first limitation concerns participants' candor regarding sensitive or illegal activities. As with any self-report method, false responding is possible. However, aided by the lack of consequence (Suler 2004), the survey's online setting may have led participants to answer more truthfully. As most questions in the survey were not obligatory, participants were also not forced to report criminal activities if they wished not to. Still, results should be interpreted cautiously as participants who have sexually solicited a minor online may have chosen not to respond. Voluntary respondents may thus differ systematically from those who left prematurely or skipped questions. Second, participants' knowledge of their online contacts was possibly biased and they responded "who you thought you were talking to." As contacts may have misrepresented their age or sex (Suler 2004), this is a concern to the data validity. However, engaging in online sexual

interactions with an assumed child, although not illegal if the contact was an actual adult, may suggest an underlying interest (at least on a fantasy level) in such activities. Third, all analyses were limited to a selected sample who interacted with strangers. This is important to regard in the future as some victims, although a minority, were familiar with the perpetrator (Wolak et al. 2006). Finally, the present convenience sample may differ indeterminably from the off-line and online populations. Arguably, the study did not aim to be representative and the focus was on deviant online behaviors by users of websites that were identified as solicitation settings (Whittle et al. 2013). Thus, sampling online seems a viable method to gain insight into solicitation.

Conclusion

The present study is, to our knowledge, the first to offer insights into the frequencies and characteristics of online sexual solicitation from a general population approach in a sample of Internet users. Unsurprisingly, the frequencies were overall quite low. Among those who engaged in online sexual solicitation of minors, the process often entailed a sexual outcome. Although previous studies have mainly focused on adolescents as targets of solicitation, the present findings stress the importance of considering children as well when planning interventions. From our findings, we also infer that it is valuable to address nonsexual interaction and female offenders in future research and in prevention and law enforcement procedures. Integrating our results with prior evidence shows that online sexual solicitation needs to be investigated from diverse perspectives. In addition to established methods focusing on victims and detected offenders, the present method of anonymously sampling online proved astute to further the understanding of solicitation processes.

Funding

References

Berson, Irene. 2003. "Grooming Cybervictims: The Psychosocial Effects of Online Exploitation for Youth." *Journal of School Violence* 2:5-18.

Bossler, Adam M. and Thomas J. Holt. 2009. "On-line Activities, Guardianship, and Malware Infection: An Examination of Routine Activities Theory." *International Journal of Cyber Criminology* 3:400-20.

Brayley, Helen, Eleanor Cockbain, and Gloria Laycock. 2011. "The Value of Crime Scripting: Deconstructing Internal Child Sex Trafficking." *Policing* 5:132-43.

Briggs, Peter, Walter T. Simon, and Stacy Simonsen. 2011. "An Exploratory Study of Internet-initiated Sexual Offenses and the Chat Room Sex Offender: Has the Internet Enabled a New Typology of Sex Offender?" *Sexual Abuse: A Journal of Research and Treatment* 23:72-91.

Cermak, Pamela and Christian Molidor. 1996. "Male Victims of Child Sexual Abuse." *Child & Adolescent Social Work Journal* 13:385-400.

Choo, Kim-Kwang R. 2009. *Online Child Grooming: A Literature Review on the Misuse of Social Networking Sites for Grooming Children for Sexual Offences*. Canberra: Australian Institute of Criminology. Retrieved January 28, 2014 (http://www.aic.gov.au/media_library/publications/rpp/103/rpp103.pdf).

Chou, Chien and Hsinyi Peng. 2007. "Net-friends: Adolescents' Attitudes and Experiences vs. Teachers' Concerns." *Computers in Human Behavior* 23:2394-413.

Cockbain, Eleanor, Helen Brayley, and Gloria Laycock. 2011. "Exploring Internal Child Sex Trafficking Networks Using Social Network Analysis." *Policing* 5: 144-57.

Cockbain, Eleanor, Helen Brayley, and Joe Sullivan. 2014. "Towards a Common Framework for Assessing the Activity and Associations of Groups Who Sexually Abuse Children." *Journal of Sexual Aggression* 20:156-71.

Cohen, Jacob. 1988. *Statistical Power Analysis for the Behavioral Sciences*. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum Associates.

Cohen, Lawrence E. and Marcus Felson. 1979. "Social Change and Crime Rate Trends: A Routine Activity Approach." *American Sociological Review* 44: 588-608.

Davidson, Julia, Julie Grove-Hills, Antonia Bifulco, Petter Gottschalk, Vincenzo Caretti, Thierry Pham, and Stephen Webster. 2011. *Online Abuse: Literature Review and Policy Context*. European Commission Safer Internet Plus.

Retrieved November 22, 2013 (http://www.europeanonlinegroomingproject. com/media/2076/european-online-grooming-project-final-report.pdf).

Dombrowski, Stefan C., Karen L. Gischlar, and Theo Durst. 2007. "Safeguarding Young People from Cyber Pornography and Cyber Sexual Predation: A Major Dilemma of the Internet." *Child Abuse Review* 16:153-70.

Dombrowski, Stefan C., John W. LeMasney, C. E. Ahia, and Shannon A. Dickson. 2004. "Protecting Children from Online Sexual Predators: Technological, Psychoeducational, and Legal Considerations." *Professional Psychology: Research and Practice* 35:65-73.

Dowdell, Elizabeth B., Ann W. Burgess, and J. R. Flores. 2011. "Original Research: Online Social Networking Patterns among Adolescents, Young Adults, and Sexual Offenders." *The American Journal of Nursing* 111:28-36.

Ferreira, Fatima A., Paula C. M. Martins, and Rui A. Goncalves. 2011. *Online Sexual Grooming: A Cross-cultural Perspective on Online Child Grooming Victimization*. Retrieved January 13, 2014 (http://repositorium.sdum.uminho.pt/ bitstream/1822/16540/1/Online%20Sexual%20Grooming_a%20cross%20cultural% 20perspective%20on%20online%20child%20grooming%20victimization.pdf).

Finkelhor, David. 1980. "Risk Factors in the Sexual Victimization of Children." *Child Abuse & Neglect* 4:265-73.

Finkelhor, David, Kimberly J. Mitchell, and Janis Wolak. 2000. *Online Victimization: A Report on the Nation's Youth*. Alexandria, VA: National Center for Missing and Exploited Children.

Fleiss, Joseph L. 1994. "Measures of Effect Size for Categorical Data." Pp. 245-60 in *The Handbook of Research Synthesis*, edited by H. Cooper and L. V. Hedges. New York: Russell Sage Foundation.

Gallagher, Bernard, Claire Fraser, Kris Christmann, and Beth Hodgson. 2006. *International and Internet Child Sexual Abuse and Exploitation. Project Report*. Huddersfield, UK. Retrieved February 18, 2014 (http://eprints.hud.ac.uk/461/).

Grosskopf, Angelique. 2010. "Online Interactions Involving Suspected Paedophiles Who Engage Male Children." *Trends & Issues in Crime and Criminal Justice* 403: 1-6. Canberra: Australian Institute of Criminology. Retrieved June 25, 2013 (http://www.aic.gov.au/media_library/publications/tandi_pdf/tandi403.pdf).

Holt, Thomas J., Kristie R. Blevins, and Natasha Burkert. 2010. "Considering the Pedophile Subculture Online." *Sexual Abuse: A Journal of Research and Treatment* 22:3-24.

Holt, Thomas J. and Adam M. Bossler. 2008. "Examining the Applicability of Lifestyle-routine Activities Theory for Cybercrime Victimization." *Deviant Behavior* 30:1-25.

International Business Machines Corp. 2013. *IBM SPSS Statistics for Windows, Version 22.0*. Armonk, NY: IBM Corp.

Joinson, Adam N. 2001. "Self-disclosure in Computer-mediated Communication: The Role of Self-awareness and Visual Anonymity." *European Journal of Social Psychology* 31:177-92.

Jones, Lisa M., Kimberly J. Mitchell, and David Finkelhor. 2012. "Trends in Youth Internet Victimization: Findings from Three Youth Internet Safety Surveys 2000–2010." *The Journal of Adolescent Health* 50:179-86.

Lanning, Kenneth V. 2001. *Child Molesters: A Behavioral Analysis*. Alexandria, VA: National Center for Missing & Exploited Children.

Leander, Lina, Sven Å. Christianson, and Pär A. Granhag. 2008. "Internet-initiated Sexual Abuse: Adolescent Victims' Reports about On- and Off-line Sexual Activities." *Applied Cognitive Psychology* 22:1260-74.

Leclerc, Benoit, Richard Wortley, and Stephen Smallbone. 2011. "Getting into the Script of Adult Child Sex Offenders and Mapping out Situational Prevention Measures." *Journal of Research in Crime and Delinquency* 48:209-37.

Livingstone, Sonia, Leslie Haddon, Anke Görzig, and Kjartan Olafsson. 2011. *Risks and Safety on the Internet: The Perspective of European Children*. Retrieved September 9, 2014 (http://www2.lse.ac.uk/media@lse/research/EUKidsOnline/Home.aspx).

Malesky, L. Alvin. 2007. "Predatory Online Behavior: Modus Operandi of Convicted Sex Offenders in Identifying Potential Victims and Contacting Minors over the Internet." *Journal of Child Sexual Abuse* 16:23-32.

Medaris, Michael and Cathy Girouard. 2002. "Protecting Children in Cyberspace: The ICAC Task Force Program." *Juvenile Justice Bulletin*. Washington, DC: U.S. Department of Justice. Retrieved May 6, 2014 (https://www.ncjrs.gov/pdffiles1/ojjdp/191213.pdf).

Mitchell, Kimberly J., Janis Wolak, and David Finkelhor. 2005. "Police Posing as Juveniles Online to Catch Sex Offenders: Is It Working?" *Sexual Abuse: A Journal of Research and Treatment* 17:241-67.

Navarro, Jordana N. and Jana L. Jasinski. 2012. "Going Cyber: Using Routine Activities Theory to Predict Cyberbullying Experiences." *Sociological Spectrum* 32:81-94.

Osterheider, M., Banse, R., Briken, P., Goldbeck, L., Hoyer, J., Santtila, P., Turner, D., and Eisenbarth, H. (2012). "Frequency, etiological models and consequences of child and adolescent sexual abuse: Aims and goals of the German multi-site MiKADO project." *Sexual Offender Treatment* 7(1).

Palasinski, Marek. 2012. "Online Security and Cyberbystander Relations in Mobilizing Sex Abuse Intervention." *Cyberpsychology, Behavior and Social Networking* 15:551-54.

Pratt, Travis C., Kristy Holtfreter, and Michael D. Reisig. 2010. "Routine Online Activity and Internet Fraud Targeting: Extending the Generality of Routine Activity Theory." *Journal of Research in Crime and Delinquency* 47:267-96.

Quayle, Ethel, Silvia Allegro, Linda Hutton, Michael Sheath, and Lars Lööf. 2012. *Online Behaviour Related to Child Sexual Abuse*. Stockholm, Sweden: Council of the Baltic Sea States. Retrieved June 6, 2014 (http://www.lucyfaithfull.org.uk/files/Interviews_online_offenders_jan_2013.pdf).

Quayle, Ethel, Silvia Allegro, Linda Hutton, Michael Sheath, and Lars Lööf. 2014. "Rapid Skill Acquisition and Online Sexual Grooming of Children." *Computers in Human Behaviour* 39:368-75.

Ridings, Catherine M., David Gefen, and Bay Arinze. 2002. "Some Antecedents and Effects of Trust in Virtual Communities." *The Journal of Strategic Information Systems* 11:271-95.

Stanley, Janet. 2001. "Child Abuse and the Internet." *Child Abuse Prevention Issues* 15:1-20.

Suler, John. 2004. "The Online Disinhibition Effect." *Cyberpsychology & Behavior* 7:321-26.

Transcrime. 2007. *Child Pornography on the Internet. Evaluating Preventive Measures in Order to Improve Their Effectiveness in the EU Member States*. Final Report. European Commission. Retrieved January 13, 2015 (http://www.transcrime.it/wp-content/uploads/2013/11/15_Child_Pornography_on_the_Internet1.pdf).

Wachs, Sebastian, Karsten D. Wolf, and Ching-Ching Pan. 2012. "Cybergrooming: Risk Factors, Coping Strategies and Associations with Cyberbullying." *Psicothema* 24:628-33.

Webster, Stephen, Julia Davidson, Antonia Bifulco, Petter Gottschalk, Vincenzo Caretti, Thierry Pham, Julie Grove-Hills, Caroline Turley, Charlotte Tompkins, Stefano Ciulla, Vanessa Milazzo, Adriano Schimmenti, and Giuseppe Craparo. 2012. *EU Online Grooming Project: Final Report*. European Commission Safer Internet Plus. Retrieved November 22, 2013 (http://www.europeanonlinegroomingproject.com/wp-content/file-uploads/European-Online-Grooming-Project-Final-Report.pdf).

Wells, Melissa and Kimberly J. Mitchell. 2007. "Youth Sexual Exploitation on the Internet: DSM-IV Diagnoses and Gender Differences in Co-occurring Mental Health Issues." *Child and Adolescent Social Work Journal* 24:235-60.

Whittle, Helen, Catherine Hamilton-Giachritsis, Anthony Beech, and Guy Collings. 2013. "A Review of Online Grooming: Characteristics and Concerns." *Aggression and Violent Behavior* 18:62-70.

Wijkman, Miriam, Catrien Bijleveld, and Jan Hendriks. 2010. "Women Don't Do Such Things! Characteristics of Female Sex Offenders and Offender Types." *Sexual Abuse: A Journal of Research and Treatment* 22:135-56.

Wolak, Janis, David Finkelhor, and Kimberly Mitchell. 2004. "Internet-initiated Sex Crimes against Minors: Implications for Prevention Based on Findings from a National Study." *The Journal of Adolescent Health* 35:424.e11-20.

Wolak, Janis, Kimberly J. Mitchell, and David Finkelhor. 2006. *Online Victimization of Youth: Five Years Later*. Alexandria, VA. Retrieved December 6, 2013 (http://www.unh.edu/ccrc/pdf/CV138.pdf).

Wortley, R. and S. Smallbone. 2012. *Internet Child Pornography: Causes, Investigation, and Prevention*. Santa Barbara, CA: Praeger.

Ybarra, Michele L., Dorothy L. Espelage, and Kimberly J. Mitchell. 2007. "The Co-occurrence of Internet Harassment and Unwanted Sexual Solicitation Victimization and Perpetration: Associations with Psychosocial Indicators." *The Journal of Adolescent Health* 41:S31-41.

Author Biographies

Anja Schulz, Dipl.-Psych., worked at the Department of Forensic Psychiatry and Psychotherapy of the University of Regensburg, Germany, as a researcher in the international MiKADO Project. Her PhD project focuses on the characteristics of and risk factors associated with online sexual solicitation. She is currently working at the Faculty of Psychology at the University of Regensburg, Germany, and training to become a licensed psychotherapist.

Emilia Bergen, PhD, studied psychology at the Department of Psychology and Logopedics at Åbo Akademi University and worked as a researcher in the international MiKADO Project. Her PhD focused on behavioral and situational factors concerning online sexual solicitation. She is currently working as a psychologist in the national correctional risk assessment department in Sweden.

Petya Schuhmann, Dipl.-Psych., is a PhD student at the Department of Forensic Psychiatry and Psychotherapy of the University of Regensburg, Germany, and working as a therapist in the "Don't Offend" Project with pedophile clients. Her current research interests include the association of child pornography consumption and child sexual abuse offline.

Jürgen Hoyer, PhD, studied psychology in Göttingen, Germany, and received his PhD in Frankfurt, Germany. He is a full professor for behavioral psychotherapy and director of the outpatient psychotherapy unit and the clinical training center at the Technische Universität in Dresden, Germany.

Pekka Santtila, PhD, is professor of applied psychology at the Department of Psychology and Logopedics at the Åbo Akademi University in Turku, Finland. Professor Santtila has published extensively regarding both etiology of pedophilia and the prevalence and effects of child sexual abuse. He has also been interested in the investigative process when child sexual abuse is suspected.