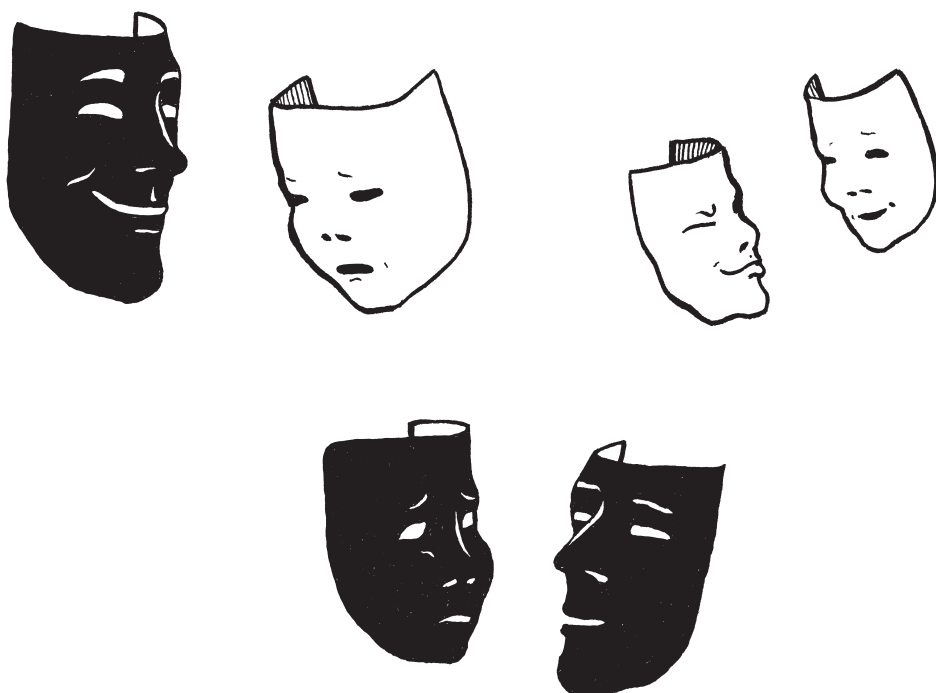Åbo Akademi

Emilia Bergen

Comparing adult-youth and adult-adult online sexual solicitation:

Manipulative behaviour, situational factors and outcomes

Comparing adult-youth and adult-adult online sexual solicitation:

Manipulative behaviors, situational factors, and outcomes

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To my family,

for your love and support

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List of Original Publications

I.   Schulz, A., Bergen, E., Schuhmann, P., Hoyer, J., Osterheider, M., & Santtila, P. (in progress). Online sexual solicitation of minors in an international online sample.

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III.   Bergen, E., Ahto, A., Schulz, A., Imhoff, R., Antfolk, J., Shuhmann, P., Alanko, K., Santtila, P., & Jern, P. (2014). Adult- adult and adult-child/adolescent online sexual interactions: An exploratory self-report study on the role of situational factors. *Journal of Sex Research.* doi:10.1080/00224499.2014.914462

IV.   Bergen, E., Antfolk, J., Jern, P., Alanko, K., & Santtila, P. (2013). Adults' sexual interest in children and adolescents online: A quasi-experimental study. *International Journal of Cyber Criminology*, 7(2), 94–111.

Svensk sammanfattning

Vuxnas sexuella närmanden mot barn och ungdomar på internet har fått stor uppmärksamhet i både media och vetenskaplig forskning under det senaste årtiondet. Förekomsten av ungdomar som råkar ut för sexuella närmanden av vuxna på internet varierar från studie till studie, beroende på metodologi och urvalsgrupp (t.ex. vuxna som har dömts för sexuella närmanden och ungdomar som har självrapporterat erfarenheter av att ha blivit utsatta för sexuella närmanden). I studier med ungdomsurval ligger förekomsten mellan 5 och 9 %.

I tidigare studier har det framkommit att vuxna som närmar sig ungdomar sexuellt har använt sig av identitetsbedrägeri och andra manipulativa beteenden för att få ungdomarna att gå med på sexuella aktiviteter. Tidigare studier har emellertid saknat en kontrollgrupp bestående av vuxna som närmar sig andra vuxna sexuellt via internet. Utan denna kontrollgrupp kan man inte veta ifall dessa beteenden är unika för vuxna som närmar sig ungdomar sexuellt eller ifall också andra som kommunicerar med någon (sexuellt och icke-sexuellt) på internet uppvisar dylika beteenden. Dessutom saknas det information om huruvida manipulativa beteenden vid sexuella närmanden har påverkat utfallet (t.ex. ifall parterna har träffats utanför internet eller haft cybersex).

I forskning gällande sexuellt beteende utanför internet har man funnit att situationsbundna faktorer (så som sexuell upphetsning och alkoholberusning) kan påverka sexuellt intresse och beteende. Effekten av situationsbundna faktorer på sexuella beteenden på internet har däremot undersökts i mindre grad och inga studier har gjorts på vuxna som närmar sig ungdomar sexuellt på internet. Det kunde vara av vikt att undersöka i vilken grad de vuxna som närmar sig ungdomar sexuellt gör det för att de har en sexuell preferens för ungdomar eller i vilken grad det är situationsbundna faktorer påverkar denna benägenhet.

Hur den ungas ålder påverkar benägenheten hos vuxna att närma sig dem sexuellt, är inte heller undersökt i tillräcklig grad. Trots att tidigare studier konsekvent har påvisat att äldre ungdomar (jämfört med yngre ungdomar och barn) oftare har blivit utsatta för sexuella närmanden, har dessa studier inte tillfredsställande kunnat besvara frågan varför. En möjlig orsak till att äldre ungdomar oftare råkat ut för sexuella närmanden än yngre ungdomar och barn har antagits vara att de vuxna har avskräckts av juridiska följder av att ha närmat sig sexuellt sådana som inte har uppnått den sexuella myndighetsåldern (16 år i Finland). Ett annat antagande berör fyndet att den sexuella ålderspreferensen i populationen verkar vara normalfördelad. I och med detta förväntar man sig att det sexuella intresset i populationen är större för ungdomar än det är för barn. Ett tredje antagande har att göra med att ungdomar möjligtvis är mer tillgängliga och villiga

att diskutera sex på internet jämfört med vuxna. Detta antas bero på den identitetssökande och sexuellt experimenterande fasen de flesta ungdomar går igenom under puberteten.

Den föreliggande avhandlingen hade fem syften: 1) att jämföra förekomsten av vuxnas sexuella närmanden enligt självrapportering och enligt observationer av detta beteende på internet; 2) att undersöka ifall mängden sexuella närmanden påverkas av den sexuella myndighetsåldern, eller ifall populationens normalfördelade sexuella ålderspreferens förklarar variansen i mängden av sexuella närmanden bättre; 3) att utreda associationen mellan egenskaper (så som en sexuell preferens för yngre), tillstånd (situationsbundna faktorer så som sexuell upphetsning) och ålder på offret för det sexuella närmandet; 4) att undersöka ifall vuxna som närmar sig ungdomar sexuellt jämfört med vuxna som närmar sig vuxna använder sig av manipulation lika ofta och ifall utfallet av det sexuella närmandet skiljer sig åt mellan dessa två grupper; 5) och att utreda ifall manipulation i samband med sexuella närmanden är associerat med olika utfall beroende på offrets ålder.

I den föreliggande avhandlingen ingick två datainsamlingar. Den första datainsamlingen baserade sig på 251 konversationer med vuxna män i tre olika svenska och finska chattrum. Forskarna utgav sig vara 10, 12, 14, 16 och 18 år gamla pojkar och flickor för att undersöka förekomsten av vuxnas sexuella närmanden mot barn och ungdomar i olika åldrar. Forskarna följde ett överenskommet skript i konversationerna och initierade aldrig en sexuell konversation med chattrumsbesökarna. Den andra datainsamlingen skedde via en internetbaserad enkät som spreds till tyska, svenska och finska vuxna via forum, chattrum, sociala nätverk och e-postlistor till personal och studerande vid Åbo Akademi. Utöver dessa rekryterades även deltagare från två tyska internetforum vars innehåll var relaterat till pedofiliskt sexuellt intresse.

Deltagarna i enkätstudien ombads rapportera ifall de hade haft någon kontakt med främlingar under det senaste året, av andra än studie- eller arbetsrelaterade orsaker (1393 deltagare svarade jakande på detta). Av dessa rapporterade 55 % (776 deltagare) att de hade haft sexuella konversationer med någon av deras internetkontakter. Den självrapporterade förekomsten av att ha sexuellt närmat sig barn (13 eller yngre) och ungdomar (14–17-åringar) var ca. 10 % (137 deltagare) av dem som hade rapporterat en internetbaserad kontakt med främlingar. De resterande 640 deltagarna hade sexuella kontakter endast med andra vuxna (18-åringar eller äldre).

Observationsstudien utförd i chattrummen visade ändå att vuxnas sexuella närmanden var betydligt vanligare än vad som framkom i självrapporteringsstudien. I observationsstudien visade det sig att 32 % av deltagarna initierade en sexuell konversation med personer de trodde var 10–14-åringar och uttryckte en vilja att

upprätthålla en sexuell kontakt med dessa. Resultaten ur denna studie gav stöd för att den sexuella ålderspreferensen är normalfördelad i populationen. Vi fann inte entydigt stöd för antagandet att deltagarna skulle närma sig barn och ungdomar olika ofta beroende på den sexuella myndighetsåldern.

I enkätstudien visade det sig att de deltagare som hade närmat sig barn och ungdomar sexuellt, jämfört med dem som hade närmat sig endast vuxna, rapporterade att de betydligt oftare konsumerade både barn- och ungdomspornografi. Detta skulle kunna tyda på att det fanns en yngre sexuell ålderspreferens på gruppnivå för dessa deltagare jämfört med dem som hade närmade sig sexuellt endast vuxna. Emellertid rapporterade de som närmade sig barn och ungdomar sexuellt, jämfört med dem som närmade sig vuxna sexuellt, även att de var betydligt mer sexuellt upphetsade före den sexuella interaktionen på internet. Detta kunde tyda på att motivationen att närma sig barn och ungdomar sexuellt inte entydigt kan förklaras av varken en underliggande yngre ålderspreferens eller endast situationsbundna faktorer så som sexuell upphetsning. Vi fann även att de som närmat sig barn och ungdomar sexuellt rapporterade betydligt högre grad av skam före, under och efter den sexuella interaktionen. De som närmade sig barn och ungdomar sexuellt och de som närmade sig vuxna sexuellt ljög om sin identitet i lika hög grad och ville lika ofta att interaktionerna skulle hemlighållas. Dock använde sig de som hade närmat sig barn och ungdomar sexuellt oftare av övertalningstekniker (t.ex. med att erbjuda pengar eller gåvor i utbyte för en sexuell bild) för att uppnå sexuella syften (så som cybersex eller för att få en sexuell bild av sin kontakt). De deltagare som hade närmat sig ett barn eller en ungdom sexuellt och hade använt identitetsbedrägeri och föreslagit att interaktionerna skulle hemlighållas, hade oftare haft cybersex med sin kontakt. Även de som hade vädjat med kärlek till sin unga kontakt hade oftare haft cybersex med barnet eller ungdomen. Den här sorten av manipulation var emellertid även associerat med högre sannolikhet för sexuella utfall hos deltagare som sexuellt närmade sig endast vuxna.

Sammanfattningsvis antyder resultaten ur observationsstudien i den föreliggande avhandlingen att vuxnas sexuella närmanden av barn och ungdomar är relativt vanligt förekommande på internet. Däremot är det färre vuxna som självrapporterar dylikt beteende. Motivationen hos vuxna som närmar sig barn och ungdomar sexuellt kan inte entydigt förklaras av varken bakomliggande egenskaper så som en yngre ålderspreferens eller av situationsbundna faktorer. Vidare utgör dessa vuxna, så som tidigare forskning har föreslagit en mycket heterogren grupp. De manipulativa beteenden som i tidigare forskning har antagits vara specifika för de vuxna som närmar sig barn och ungdomar sexuellt, verkar vara förekommande även hos dem som närmar sig endast vuxna sexuellt på internet.

Abstract

Online sexual solicitation (solicitation) of youth has received widespread media and research attention during the last decade. The prevalence rates of youth who have experienced solicitation or solicitation attempts vary between studies depending on the methodology used (e.g., whether youth or adults are the target study group). In studies focusing on youth victims, the prevalence of solicitation attempts made by adults during the past year is typically reported to be between 5 and 9%. Adults who solicit youth online have been found to use deception and other manipulative behaviors to gain access to sexual activities with youth. However, previous studies have lacked a control group of adults who solicit other adults online. Without this comparison, one could argue that deceiving others online about one's identity, and engaging in manipulative behaviors, is an inherent part of most online sexual interactions with strangers. Additionally, little is known about the associations between manipulative behaviors and the solicitation outcomes. In research concerning offline sexual behaviors, it has been noted that situational factors, such as sexual arousal, may alter both sexual interest and behavior. The effects of situational factors on online sexual behaviors have been less extensively studied (especially so with a quantitative approach); no studies have to date focused on adults' solicitation of youth. Investigating the role of a lowered sexual age preference and the role of situational factors in the soliciting adults could be an important step in order to receive deeper knowledge of the role of traits and states in the context of solicitation. Additionally, there is a lack of knowledge of the effect of the age of the youth. Although previous studies on solicitation has found that older youth, compared with younger youth and children, are more often solicited, the possible reasons for this have not been investigated. Are adults who solicit youth affected by legal deterrence (through the legal age of consent), is it because older youth are more available online, or are the adults' age preferences merely a product of a normally distributed age preference in the population?

The purpose of the present thesis was fivefold: 1) to obtain an estimate of the frequency of adults' solicitation of youth as self-reported and observed in actual behavior; 2) to explore whether the legal age of consent (LAC) affects solicitation frequency, or whether a normally distributed sexual age preference more accurately describe the proportion of solicited youth of different ages; 3) to investigate the associations of both traits (e.g., lower sexual age preference) and states (immediate situational factors, such as alcohol intoxication), and the solicitation target; 4) to explore whether adults who solicit youth and adults who solicit adults are equally deceitful and manipulative online, and whether the different solicitation outcomes are as common in both groups; and 5) to investigate whether the deceitful and

manipulative behaviors engaged in had different associations with the solicitation outcomes depending on the age of the solicited.

In the survey study, a convenience sample of 1393 adult participants (aged 18 years or older) self-reported any online communication with strangers during the past year. Of these, 56% (776 respondents) reported that they had solicited or attempted to solicit at least one stranger. Of the respondents, 453 (58.4%) were men, and 323 (41.6%) were women. Participants with only adult contacts (18 years or older) constituted the majority (640 respondents). In contrast, 136 individuals reported a youth contact (a 13 year old or younger, or a 14 to 17-year old). Approximately half of the participants were men in the adult contact group, while 75% of the participants were men in the youth contact group. Approximately 60% of the participants with youth contacts were recruited from two websites associated with a pedophilic sexual interest. In an online quasi-experimental study, with researchers impersonating youth of different ages (10–18 year olds) in chat rooms, 251 online conversations with chat room visitors made up the entire sample. All chat room visitors alleged to be men.

The self-reported frequency of having solicited youth (0–17-year olds) during the past year was approximately 10% in our sample of adults who reported communicating with any strangers online. When we observed this behavior in chat rooms, we found that approximately 30% of the chat room visitors who believed they interacted with a 10 to 14 year old attempted to solicit the youth. We found that solicitation attempts increased equally much when increasing the age of the impersonated youth from 14 to 16, as from 16 to 18. Thus, we concluded that a normally distributed age preference in the population was a more plausible explanation to the effect of the age of the solicited, rather than the LAC (here; 15 and 16). If the chat room visitors would have been deterred only by the LAC, we would have expected that the change in amount of solicitation attempts from an illegal age group to a legal age group would have been significantly stronger than changes between age groups within illegal-illegal and legal-legal groups.

Our subsample of survey participants from the pedophilia-related websites expectedly reported that they had solicited youth more often in comparison to the sample gathered through general (i.e., not associated with any particular sexual preference) websites. We also found that participants with a youth contact reported higher levels of sexual arousal and shame before the sexual interaction with their online contact, compared with participants with an adult contact. Additionally, the participants with youth contacts who reported consumption of child- and adolescent pornography also reported being more sexually aroused before the interaction, compared to the participants with youth contacts who did not report consumption of these kinds of pornography. We also found clear indications that the online sexual

interaction had an alleviatory effect on reported levels of sadness, boredom and stress, independent of the age of the contact. Generally, the participants with youth and adult contacts reported deceiving their contacts as often and suggesting keeping the communication a secret from someone as often. Participants with a youth contact, however, reported using more persuasion techniques for online sexual purposes or for the purpose of an offline meeting, compared to those with an adult contact. In the chat rooms, we found that more indirect ways of future sexual communication (e.g., continuing chatting) was suggested by the chat room visitors that were under the assumption of interacting with youth aged 10 to 14, compared with more direct means (e.g., meeting offline). Survey participants with youth contacts who had used deception, suggested keeping the interactions a secret, and/or persuaded their contact by appealing to the contacts feelings of love and attachment for the participant had also more often engaged in cybersex with the contact. No other manipulative behaviors were associated with the other investigated solicitation outcomes (receiving a sexual picture, meeting offline, and engaging in sexual contact offline) within this group of participants. However, using deception, suggesting secrecy and using persuasion was also positively associated with certain solicitation outcomes within participants with an adult contact.

In summary, adults' solicitation of youth is much more frequent when observed in chat rooms than self-reported. Additionally, an underlying lowered sexual age preference seems to be a motivating factor on a group level in adults who solicit youth. We concluded that directed prevention efforts should be made on pedophilia-related websites. Additionally, the role of situational factors, especially sexual arousal in persons with a pedo- or hebephilic sexual interest should be investigated further in the context of online sexual solicitation.

1 Introduction

The definition of online sexual solicitation (hereafter; *solicitation*) was derived from, but not identical to the definitions used by researchers at the Crimes against Children Research Center (CCRC) in New Hampshire (Ybarra, Espelage, & Mitchell, 2007). These researchers' definition (Ybarra et al., 2007) stated that the solicitation (or attempt thereof) had to be unwanted by the target of the solicitation, whereas in the present group of studies, no attention was paid to whether the solicitation was unwanted or wanted by the target. Additionally, some of the publications by the CCRC stated that the definition required the soliciting party to be at least five years older than the youth who reported this experience (e.g., Jones, Mitchell, & Finkelhor, 2012), while other publications mention no such demand (e.g., Ybarra et al., 2007). As three of the four studies included in the present thesis included adult-adult solicitations as a comparison group to adult-youth solicitations, the demand of the five year gap in age between the two parties, was not included in our definition of solicitation. The CCRC researchers also separated between aggressive solicitations (in which the adult attempted or made offline contact) and solicitations (in which the communication was virtual only) (e.g., Wolak, Finkelhor, Mitchell, & Ybarra, 2008), whereas we did not use different definitions for these.

It has been difficult to identify soliciting adults' behaviors that would be specific to those with youth targets, since previous studies on solicitation have lacked a control group of adult targets (e.g., Mitchell, Finkelhor, & Wolak, 2001). Although it has been noted that adults who engage in solicitation by no means target only youth (Briggs, Simon, & Simonsen, 2011), little is known about solicitations where the target is an adult. Therefore, it may well be that the behaviors exhibited during solicitation of youth are shared by most individuals who solicit someone online, and that the outcomes of solicitations are the same (e.g., engaging in cybersex[1] or sexual contact offline), independent of the age of the target. Understanding how solicitation-related behaviors vary as a function of the target, will allow more specific preventive efforts to combat solicitation of youth to be devised.

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[1] "*Cybersex is a real-time communication with another person that occurs through a device connected with the Internet (e.g., computer, cell phone, smart phone) in which one or both of you describe or share in other ways sexual activities, sexual behaviors, sexual fantasies, or sexual desires that may lead to feelings of sexual pleasure or physical intimacy. You and/or your partner may or may not be stimulating yourself/himself/herself sexually during this conversation.*" (Shaughnessy, Byers, & Thornton, 2011, p. 87)

Another issue concerning research on solicitation is that previous studies have almost exclusively used either self-reports by youth targets (e.g., Jones, Mitchell, Wolak, & Finkelhor, 2013), or samples of adults convicted for solicitation-related crimes (e.g., Briggs et al., 2011). This makes it difficult to ascertain the identity of the perpetrators in youth samples and determine whether non-incarcerated perpetrators differ from those who are incarcerated. The present body of work aimed to explore areas of solicitation that to date have been overlooked.

"Solicitation" will be used throughout the present thesis, as it has been used to describe online sexual interactions between both adults (Baumgartner, Valkenburg, & Peter, 2010), and adult and youth, and also in instances where only one online encounter between the parties has taken place. The alternative and associated term "grooming" (Craven, Brown, & Gilchrist, 2006; Kloess, Beech, & Harkins, 2014; Whittle, Hamilton-Giachritsis, Beech, & Collings, 2013a) is an English legal term and refers only to adult-youth solicitations, online as well as offline, and is used when at least two encounters have taken place (Section 15 of the U.K. Sexual Offences Act, 2003).

The studies included in the present thesis encompass online sexual interactions between adults, rendering the definition of grooming at least morally derogatory and therefore not suitable for the present thesis. In fact, although we compared adult-adult solicitations with adult-youth solicitations, it is worth emphasizing that the interactions of the former setup of individuals are not in any sense illegal. They serve, however, the vital function of a control group for the purpose of pinpointing behaviors specific to adult-youth solicitations.

Surveys directed towards youth inquiring about solicitations they have experienced (e.g., Livingstone, Haddon, Görzig, & Ólafsson, 2011, not peer-reviewed [NP-R]; Priebe, Mitchell, & Finkelhor, 2013) draw on the youths' perception of the perpetrator, and authors of such studies have correctly pointed out that the results from these are "confounded" by reports from peer solicitations among youth. Such peer solicitations among youth may have contributed to misperceptions of the solicitation process and therefore it should be of importance in future research to be able to distinguish between adult-youth and youth-youth solicitations. Also important to note, is that a majority of adults convicted of solicitation-related offences had been caught in so called "sting operations", during which a law enforcement agent had posed as a youth online (e.g., Briggs et al., 2011). It is known that these samples differ from samples consisting of adult perpetrators convicted for soliciting an actual youth: The perpetrators in the latter case were older, more likely to be full-time employees and had fewer prior offences (Mitchell, Wolak, & Finkelhor, 2005).

Although online experimental approaches have been used (e.g., Lamb, 1998; Malesky, 2007; Marcum, 2007; O'Connell, 2003 [NP-R]), the manipulation of relevant factors such as the age of the youth, the quantity of data, and the level of experimental control have been low or lacking. Little can therefore be said from these studies about how individual factors related to the youth affected the adults' behaviors. All studies mentioned above also lacked a comparison group of adults who had solicited adults, and had small sample sizes.

Content-wise, previous research has focused on the prevalence of certain solicitation-related behaviors, such as deception (Shannon, 2008), secrecy (Webster et al., 2012 [NP-R]), and persuasion techniques (Malesky, 2007). However, no studies have been conducted to explore how these behaviors are associated with solicitation outcomes, or if associations between solicitation-related behaviors and their outcomes vary as a function of the age of the target. Additionally, we know very little about how the situation surrounding the solicitation has been perceived by the initiator of the solicitation. It has not been studied whether certain emotional states or other situational factors have preceded the situation in which the adult solicited the youth, although we know from the research on offline sexual offending (e.g., Nunez, 2003) that these may play a part in whether or not an individual engages in sexually deviant or harmful behaviors (e.g., Ariely & Loewenstein, 2006).

1.1. The Internet as a Setting for Solicitation

The Internet as a space between sexual reality and sexual fantasy as discussed by, for example, Ross (2005), raises intriguing questions about adults' solicitation of youth. For example, a man who pretends to be a woman and engages in synchronous cybersex with another man, although identifying himself as heterosexual, does not necessarily have to question his gender identity or his sexual orientation. The interaction *per se* may be perceived as real but nothing else needs to be, which makes the Internet a setting where sexual experimentation and exploration are near infinite in scope. Drawing on Goffman (1963), Ross (2005) stated that *"It can be both a fantasy, taken to the point of acting it through with another person, or a behavior that, through being virtual, is not actually done, and thus the person does not have to face the dissonance or stigma of actually being, or having a spoiled identity"* (Ross, 2005, p. 344). This is similar to what Suler (2004) called "dissociative anonymity", when he described that the Internet provides opportunities for individuals to separate between their online actions and their "real" offline identities. Following this train of thought, ego-dystonic behaviors engaged in online do not necessarily mean that the individual has to question their real offline identity (which is protected through the dissociative anonymity of the Internet), which can remain unchanged. Support for

this can be found in Briggs et al.'s (2011) study on convicted chat room sex offenders, of which some reported that they would not approach youth sexually offline, even though they had solicited youth for online sexual purposes.

In an early study on online sexual behaviors, Cooper (1998) presented the idea of sexual behaviors being influenced by what he called the "Triple-A engine" of the Internet: Accessibility, Affordability and Anonymity. Accessibility refers to the vast and readily available sexual content and possible sexual connections online. As previous research has found, many of the convicted adults who solicited youth had engaged in solicitations of multiple, sometimes hundreds of youth simultaneously (e.g., Leander, Christansons, & Granhag, 2008; Seto, 2013; Webster et al., 2012 [NP-R]). The accessibility ties in with youths' sexual exploration online, as the interactive online behaviors of youth often make them more accessible as targets online compared with adults (e.g., Valkenburg & Peter, 2011; Wolak et al., 2008). Affordability refers to how online sexual solicitation compared to offline solicitation saves costs in traveling and other arrangements. For example, enabling the initial targeting of multiple individuals online, and only after that (or not at all) pursuing certain individuals offline. The anonymity (or perceived anonymity) of the Internet also greatly affects solicitation (Seto, 2013). Briere and Runtz (1989) found that 7% of male university students reported that they would possibly engage in sexual contact with a child were they to be guaranteed that they could not be identified or punished. Interestingly, the anonymity of the Internet also offers a unique opportunity for researchers to investigate this hypothetical sexual willingness (i.e., willingness to engage in sexual activities which the individual would refrain from without this anonymizing characteristic of the Internet). This could, for example, be tapped into by utilizing an experimental procedure in interactive forums such as chat rooms as was done in the present thesis.

However, one should not forget the connection between the "offline" individual and the online identity. An example of how reciprocally connected behaviors, perceptions and the Internet as a setting are, was provided by Yee, Bailenson, and Ducheneaut (2009). Namely, the researchers found that being randomly assigned a tall avatar made the participants more confident in their demeanor with others online, compared to those with a short avatar. Another study (Noll, Shenk, Barnes, & Putnam, 2009) found that adolescent girls who had experienced childhood abuse more often chose to create sexually provocative avatars compared to their non-abused peers. Sexually provocative avatars as well as sexually suggestive nicknames have in turn been found to be associated with online sexual advances by others and something adults look for in youth targets of solicitation (Noll et al., 2009). Hence, these studies investigated the so called "Proteus Effect" (Yee & Bailenson, 2007)

which is an attempt at explaining the interconnectedness within our self-representations online and offline and how these are connected to our behaviors.

1.2. Legal Aspects of Solicitation

For the present group of studies, data were collected from three EU countries (Germany, Finland, and Sweden), all of which have agreed to adopt (Germany), or have already adopted (Sweden and Finland) the European Council and Parliament's Directive 2011/92/EU. This directive concerns sexual abuse and sexual exploitation of children and child pornography. Article 6 states that all EU member states shall take the necessary measures to ensure that adults who have or have attempted to meet a person under the legal age of consent (Germany, 14; Sweden, 15; and Finland, 16 years of age) by means of information technology, shall be punishable by law with a maximum term of imprisonment of at least 1 year. Germany is the only country of the three that has no national law on solicitation.

In 2009, the Swedish penal code introduced a paragraph criminalizing contact with a child for sexual purposes (Swedish Penal Code Chapter 6, Section 10a, 2009). Shannon's (2013 [NP-R]) report included a sample of 331 cases with this crime title that had been reported to the police between 2009 and 2012. Of these, 32 (9.7%) were prosecuted, and a perpetrator was convicted of a crime associated with the solicitation in 5 cases. As Shannon (2013 [NP-R]) pointed out, the timing of when the solicitation is reported is crucial. The legislation demands evidence that the youth and adult agreed to meet offline (which was present in only one fifth of the reported cases; Shannon, 2013 [NP-R]), and that the adult had sent a ticket for the youth's trip to the meeting place (or similar arrangements were made). However, if the adult and youth had already met offline at the point when the solicitation was reported, it was often too "late" for the case to be prosecuted as a solicitation offence. This is the case as the offline meeting (in cases where the adult's motive was clearly sexual as the paragraph demands, and the age of the child was under 15) most often entailed behaviors that are included in other sections of the penal code with more severe sentencing, such as sexual assault or sexual molestation. However, in the cases where an offline meeting had not taken place, the evidence of the adult's intention to meet with the youth for sexual purposes was often lacking (Shannon, 2013 [NP-R]). Hence, national legislation was applicable only in a fraction of the cases of adults' solicitation of youth in Sweden.

In 2011, Finland passed a bill similar to the one in Sweden regarding Luring children for sexual purposes (author's own translation), criminalizing sexual solicitation of individuals under the legal age of consent (16 years) offline as well as

in online settings (Finnish Penal Code Chapter 20, § 8b, 2011). Unpublished statistics assembled by the Police College of Finland revealed that in 2013, the following cases had come to the attention of the police: 171 cases of online child sexual abuse, an additional 3 cases of gross online child sexual abuse, and a further 30 cases of attempted online child sexual abuse. However, it is unclear what the reports on online child sexual abuse entailed as no information other than that the possible crime was committed online, was available. It could be that these figures included child pornography offences or not, and an unknown or known offender.

Generally, one of the central reasons for creating and implementing new legislation is for legal deterrence (Ward, Stafford, & Gray, 2006). Paternoster (2010) defined deterrence as "The concept of deterrence is quite simple – it is the omission of a criminal act because of the fear of sanctions or punishment" (Paternoster, 2010, p. 766). However, it remains uncertain whether implementing new legislation (e.g., concerning adults' solicitation of youth) has had the intended deterring effect, and Craven, Brown, and Gilchrist (2007) among others have questioned this. A second reason for implementing new legislation is for the purpose of convicting perpetrators. As outlined above, the national legislations on solicitation of youth have to date been applicable to a limited number of cases. To the best of our knowledge, no studies have been conducted as to whether adults who engage in online sexual solicitation are deterred by the legal age of consent, and what the proportion of adults is, who initiate or continue a sexual conversation online with someone under, or over, the legal age of consent.

Additionally, there are other reasons for the low prosecution rates than the ones mentioned. These have to do with how the crime is perceived by the victims. Firstly, it has been found that solicited youths rarely report having been solicited, especially if the interactions have been restricted to the Internet (Mitchell et al., 2001). The explanation for this seems to be that most youth do not perceive themselves as victims in the traditional sense (e.g., being naïve and passive), as popular media tend to portray them (as mentioned by Wolak et al., 2008). A second reason is that most of the solicitations have not felt serious or upsetting enough to warrant reporting (Mitchell et al., 2001; Priebe et al., 2013). Solicited youth are also often fully aware of both the age of the soliciting adult and their sexual intentions, and additionally, some youth may actively have interacted with the adult in a sexual manner, which could make them hesitant to report the event (Wolak et al., 2008).

1.3. Frequencies of Solicitation of Youth, Online Settings, and Preventive Efforts

Reported frequencies of adults' solicitation of youth vary depending on the definitions and the methodology used. Studies using youth samples have found that approximately one out of seven youth in the USA reported that they had been solicited during the last year (Jones et al., 2013). Excluding the cases in which the perpetrator was likely another youth (62%), self-reported experienced solicitation in the USA concerns approximately 5% of youth between 10 and 17 years every year (Seto, 2013). In Europe, 24% of youth (aged 9 to 16) reported having received sexual messages online during the past year (not distinguishing between peer and adult solicitations; Livingstone et al., 2011 [NP-R]). If the same proportion of cases involved peer solicitations as in the USA, the approximate proportion of youth in Europe experiencing solicitation would be 9% each year.

The most commonly reported online setting where the initial interaction between the adult and youth takes place is chat rooms. Of adults convicted for solicitation-related offences, 75% had met the youth in a chat room (Baumgartner et al., 2010; Malesky, 2007; Mitchell, Finkelhor, & Wolak, 2007; Webster et al., 2012 [NP-R]; Wolak, Finkelhor, & Mitchell, 2004). Other reported settings are gaming platforms (Webster et al., 2012 [NP-R]), and social networks (Mitchell, Finkelhor, Jones, & Wolak, 2010a). The results from a large-scale European survey (Livingstone et al., 2011 [NP-R]) indicated that 13 to 16 year olds visited chat rooms more often (31%) compared to 9 to 12 year olds (14%). As a well-known setting for adults' solicitation of youth, it may be that younger youth would be targets as often as older youth if they visited chat rooms as often (Livingstone et al., 2011 [NP-R]). Hence, it may be the availability of youth of different ages that has produced the assumption that older youth are much more attractive as solicitation targets, compared to younger youth, and not a lack of sexual interest in the latter age group. Equally well, this difference could be a sign of the normally distributed sexual age preference, which will be discussed later on.

In the USA, extensive measures have been taken to combat solicitation of youth through so-called "sting operations", where law enforcement agents pose as youth and interact with adults online (Wolak, Finkelhor, & Mitchell, 2012 [NP-R]). These operations have, according to researchers at the CCRC), decreased the prevalence of solicited youth from 19% in 2000, to 9% in 2010 (extensive media coverage on solicitation was among other potential reasons for the decrease) (Mitchell, Jones, Finkelhor, & Wolak, 2014 [NP-R]). However, when comparing the adults who had solicited an undercover agent and those who had solicited an actual youth, there were several factors which differed (age, employment and offence history; Mitchell, Wolak, & Finkelhor, 2005). Fulda (2002) discussed

whether these operations might even be creating a new group of criminals who would not have solicited youth were it not for the contact with the willing and sometimes sexually suggestive law enforcement agent posing as one. McLaughlin (2004) on the other hand expressed the opinion that, by using knowledge of behavioral and individual characteristics of adults who solicit youth, undercover law enforcement agents can act as the "perfect victim" online. Fulda (2002) questioned this practice, asking whether law enforcement agents soliciting adults while portraying youth are not in fact stepping over the line from a presumption of innocence into preventive detention.

As prevention efforts go, several media campaigns directed towards youth as well as parents and teachers have also been launched (e.g., The European NGO Alliance for Child Safety Online and the International Association of Internet Hotlines). Also, around Europe there are organizations and projects offering information and care to individuals who have a pedophilic or hebephilic sexual interest (e.g., Prevention Project Dunkelfeld in Germany; Beier et al., 2009). However, few prevention efforts directed at adults who may at some point solicit youth online have been made. This is probably due to, among other factors, the heterogeneity of this group of adults, and due to the fact that distinct risk factors for adults engaging in solicitation of youth have not been identified.

1.4. Characteristics of Adults Who Solicit Youth

Men have constituted the vast majority of solicitation perpetrators in previous studies (Mitchell, Finkelhor, Jones, & Wolak, 2010b), although female perpetrators have been reported as well. Studies using samples of convicted offenders typically show that almost all perpetrators are men (Briggs et al., 2011; Webster et al., 2012 [NP-R]), whereas victim surveys report a 16–25% prevalence of female perpetrators (Wolak, Mitchell, & Finkelhor, 2006 [NP-R]). Indeed, some researchers have suggested that studies may have underestimated the prevalence of women who solicit youth (Elliott & Ashfield, 2011; Pflugradt & Allen, 2010). Elliot and Ashfield (2011) used case studies of female sex offenders who had used online technology as a means in their offences. The researchers argued that gender stereotypes in how behaviors such as solicitation are perceived may explain why few women have been prosecuted for solicitation. Elliot and Ashfield (2011) argued that men and women who solicit youth may be different so that the former have a more predatory approach while the latter have an approach of emotional bonding with the target.

It has been argued that the targets' perception of the identity of the other person may be inaccurate due to deception, or fantasy play (Dombrowski, LeMasney, Ahia, & Dickson, 2004; Suler, 2004; Wolak et al., 2004). For the purpose

of the present thesis, we focused on cases which involved parties that were not acquainted with each other before the solicitation occurred, which , according to previous research, is the case in 87–92% of solicitations (Ferreira, Martins, & Gonçalves, 2011; Finkelhor, Mitchell, & Wolak, 2000 [NP-R]). In the remaining cases, the parties were acquainted before the online communication began and the Internet was only one means among others used to keep in touch (Mcalinden, 2006; Wolak & Finkelhor, 2013).

Adults who have solicited youth typically have considerable knowledge about technological measures to help protect their identity online (Webster et al., 2012 [NP-R]). However, without a control group of adults who have solicited adults, one cannot conclude that this is a unique feature of those soliciting youth. Webster and his colleagues (2012 [NP-R]) found that it was not uncommon for the adults to use multiple hardware, such as a separate mobile phones used solely for the purpose of the solicitation. Some had also used multiple IP addresses and multiple proxy servers to hide their location.

Some researchers have characterized adults who solicit youth on the basis of the motivations for the soliciting behavior. An example is a study by Briggs et al. (2011), who categorized adults convicted of having solicited youth in chat rooms as either "contact driven" or "fantasy driven". Contact driven adults engaged in online sexual interactions with the youth mostly for the reason of inuring the youth to an offline sexual contact. Fantasy driven adults, on the other hand, were characterized as having an end goal of reaching sexual climax online (e.g., during cybersex). For these, attempting to organize a meeting was done chiefly for the reason to buy or exchange material to enhance the cybersex experience (e.g., supplying the youth with a webcam). A similar categorization was used by the researchers at the CCRC (e.g., Mitchell et al., 2007). As mentioned, these researchers used the term "aggressive solicitation" when offline contact or attempts at offline contact were made by the adult and "solicitation" when the offline aspect was absent. However, previous findings seem to support a similar differentiation of adults who solicit adults, that is, that some engage in online sexual interactions with other adults with an end goal of offline sexual contact, while others are driven by an online-only sexual goal (Cavalheira & Gomes, 2003[2]; Daneback, Cooper, & Månsson, 2005; Daneback, Månsson, & Ross, 2007). Daneback et al. (2005) found that approximately one third of their sample of adult

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[2] The age range of the participants in this study was "under 15 to over 55-year olds", with approximately 17.2% of the sample being under 15 to 19 years old.

women and men self-reported that they had engaged in cybersex[3] (which had taken place in a chat room in over 70% of the cases). From the same survey data, Daneback et al. (2007) found that 35% of the men and 40% of the women reported that they had met someone online with whom they had then engaged in sexual contact with offline. Cavalheira and Gomes (2003) also found that a minority of their sample was driven by online sexual purposes only, while the majority had engaged in cybersex with an end goal of offline sexual contact.

Additional categorizations of adults who had solicited youth were made by Webster et al. (2012 [NP-R]), who categorized their sample of perpetrators into three groups: intimacy seeking; adaptable; and hypersexualized. The adults categorized as intimacy seeking did not disguise their identity, and were driven by the end goal of a consenting relationship with the youth, and spent much of the time online with the youth engaging in non-sexual communication. The adaptable ones changed their style in accordance with the youth's behaviors, deceived the youth about their identity, and protected their identity online more than the aforementioned group. Perpetrators classified as adaptable had previous convictions more often than the intimacy seeking group, and both groups held the offence supporting view of the youth as mature and capable. The hypersexualized group often had extensive collections of both extreme adult pornography as well as pornographic pictures of youth. They were often in contact with other adults online who shared their sexual interests, used nicknames suggestive of sexual behaviors, and often used pictures of their genitals in their online profiles. The offence supporting belief of the hypersexualized group was a dehumanization of youth. Unlike the intimacy seeking and adaptable groups, meeting youth offline was rarely the end goal of hypersexualized perpetrators. Webster et al. (2012 [NP-R]) suggested that the differences between these groups may have implications for the handling of adults who solicit youth, and should be taken into account when planning therapeutic interventions. Some evidence also suggests that these groups targeted different kinds of youth online, the intimacy-seeking more often targeting lonely or depressed youth, while the hypersexual ones targeted risk-taking and sexually provocative youth (Webster et al., 2012 [NP-R]).

1.4.1. Sexual age preference in the population and in solicitation cases

Recent research suggests that sexual age preferences are relatively normally distributed in the population, so that individuals rarely have a sexual preference of much younger (children) or older individuals (Antfolk et al., 2014). These findings

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[3] The participants reported if they had ever had such an experience in this study.

support the assumption of a normal distribution of sexual age preferences which dictates that a minority of individuals' preferences are placed at either of the two tails of the age range (Ball & Fowler, 2010). However, sexual age preferences have been shown to vary both as a function of gender and sexual orientation (Hayes, 1995). In general, heterosexual adult males, independent of their own age, prefer females in their late teens to their late twenties (Antfolk et al., 2014; Quinsey & Lalumière, 1995). Homosexual adult males show a similar preference, but generally prefer slightly younger partners compared to their heterosexual peers (Hayes, 1995). Adult heterosexual women, on the other hand, seem to prefer men that are of similar age to them or slightly older, while homosexual women prefer slightly older partners, compared to their heterosexual peers (Silverthorne & Quinsey, 2000). Based on this theory, it could be predicted that a pedophilic as well as a hebephilic sexual interest would be more common in men than women. This has been found to be the case, as pedophilia occurs much less often in women compared to men (Freund & Heasman, 2008). The prevalence of pedophilic and hebephilic sexual interest in the population is not known, and estimates vary depending on the definition used (Seto, 2007). Here, it is important to note that hebephilia is not a paraphilia according to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association [APA], 2013), and is a hotly debated issue among researchers (e.g., Blanchard et al., 2009; Frances & First, 2011). From the assumption of a normally distributed sexual age preference, it follows that a hebephilic sexual interest should be more common than a pedophilic sexual interest. There is also empirical evidence for this in the literature (e.g., Antfolk et al., 2014; Seto, 2013).

Sexual fantasies during the past year about persons younger than 16 was reported by 3.3% of a population based sample of adult men in Finland (Santtila et al., submitted). Other studies have reported a prevalence of 9.5 to 21%[4] when investigating any sexual fantasies or attraction to children (Ahlers et al., 2009; Briere & Runtz, 1989). Of the 8718 male participants aged 18 to 88 in a recent online sample collected in Germany, 4.1% reported sexual fantasies involving prepubescent children (Dombert et al., manuscript in preparation). In the same study, 3.2% had committed a sexual offence against prepubescent children, and 0.1% self-reported a pedophilic sexual preference (Dombert et al., manuscript in preparation). However small the proportion of adults is, that are attracted to children or adolescents; the heterogeneity of these individuals is probably even greater, concerning both sexual interest and behavior. This assumption becomes

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[4] An affirmative response to the item: "Little children sometimes attract me sexually" p. 67.

manifested in, for example, Goode's (2009) data on adults with a self-reported sexual interest in persons younger than 16. Although the sample consisting of 56 adults who self-reported sexual interest in this young age group could be regarded as homogenous, their thoughts on subjects such as child pornography, legal age of consent and stigmatization by society, differed enormously on an individual level.

Seto, Wood, Babchishin, and Flynn (2012) studied a sample of convicted solicitation offenders and found that 1.4% self-reported a pedophilic disorder according to the DSM-5 (APA, 2013) defined as sexual interest in persons under 13 years. Of their sample, 30% reported a hebephilic sexual interest, defined as sexual interest in 13 or 14 year olds. However, these figures vary from study to study. Krueger, Kaplan, and First (2009) found that 27% of their sample of adults arrested for soliciting youth had a pedophilic disorder. Still, not all adults who solicit youth have a preferential sexual interest in youth. Some adults may be motivated by factors in the immediate situation, such as greater availability of youth willing to interact online, compared to the number of adults willing to do the same (Valkenburg & Peter, 2011). Others may be driven by an impulsive decision, or curiosity to explore a variety of sexual opportunities online (Lanning, 2010 [NP-R]).

It seems then that only a minority of adults who have solicited youth can be considered pedo- or hebephilic (Seto et al., 2012). Thus, in order to understand the differences between soliciting adults with and without a low sexual age preference, it may be necessary for researchers to utilize pedophilia-dedicated websites and forums (such as those described by Malesky & Ennis, 2004). This is an important sample also because it is common for members of such forums to share information about their modus operandi as well as tips on computer security (Holt, Blevins, & Burkert, 2010). Furthermore, it would be valuable to know whether this subsample differs in terms of solicitation-related behaviors and targets, in order to enable the development of targeted prevention and intervention strategies.

Consuming child pornography has been reported as a valid indicator of an underlying pedophilic sexual interest (Seto, Cantor, & Blanchard, 2006). Wolak and her colleagues (2008) found that 40% of adults who were convicted for having solicited youth (or law enforcement agents posing as youth online) had child pornography in their possession when arrested. In non-incarcerated adults who have solicited youth, the prevalence of consumption of child (or adolescent) pornography has, to the best of our knowledge, not been investigated.

Approximately 2–8% of women and 1–5% of men in Finland report that they have been sexually abused as children (Laaksonen et al., 2011). This would indicate that there is a gap between the prevalence of fantasies of sexual contact with

children and adolescents, and behaviors where sexual contact with children is actually attempted or takes place. Bearing in mind the relatively normal distribution of sexual age preferences, both attraction to and sexual behaviors involving adolescents should be markedly more prevalent among adults compared to attraction and contact with children. It is unclear whether adults' online sexual interactions with youth are as uncommon as offline sexual interactions with youth, or whether the prevalence is more similar to the prevalence of pedo- or hebephilic attraction and fantasies. The majority of adults who have solicited a youth does not have a pedo- or hebephilic sexual interest, thus a considerable proportion of the motivation behind why adults solicit youth is left unexplained by a lower sexual age preference alone (Krueger et al., 2009; Seto et al., 2012).

1.5. Situational Factors and Their Association with Sexual Behaviors and Interests

There is probably no single motivating factor or individual characteristic that would explain why adults without a low sexual age preference would solicit youth. As there is some likelihood that these individuals are driven by an interaction between individual characteristics and situational factors, the cognitive-affective personality system (CAPS) proposed by Mischel and Shoda (1995) might shed some light on why these adults solicit youth online. These authors questioned explanatory frameworks relying solely on either situation-related factors or individual traits, noting that the consistency of personality traits is typically overestimated. In the CAPS framework, both the situations as well as underlying personality traits are used in the model to understand the behavior of an individual. The model may aid in the understanding of the decision by some individuals to solicit youth while others would not. Thus, one could argue that various situational factors (e.g., the perceived anonymity of the Internet) affect individuals differently, or to a different extent. Although youth may outnumber adults in interactive online forums (Valkenburg & Peter, 2011), be motivated by curiosity and sexual self-exploration to a higher extent, and be more willing to engage in online sexual activities compared to adults, most adults would still not engage in such activities with youth. Also, it is compelling to focus only on online situational factors when studying an online phenomenon. However, by excluding offline situational factors surrounding the online activity that may affect the individual's online behavior, one cannot capture or understand the entire situation. Following this, it would be important to explore the associations between certain immediate situational factors that might influence an individual's decision to solicit youth. As mentioned by Abbey, Zawacki, Buck, Clinton, and McAuslan (2004), differences in sexual preferences and behaviors cannot solely be

explained by individual long-lasting characteristics as these vary within the individual across the life span and from one situation to another. Not only have situational factors been found to influence sexual preferences and behaviors (Ariely & Loewenstein, 2006; Imhoff & Schmidt, 2014), but also engaging in sexual behaviors has been found to change how the situation and certain emotions are perceived by the individual (Gee, Ward, & Eccleston, 2003). If this were applied to situations where individuals engage in solicitation, one could argue that certain situational factors may influence whom adults target when they engage in solicitation.

An additive effect of sexual arousal and alcohol intoxication has been found that decreases capacity to read social cues, such as misperceiving negative or neutral cues as sexually encouraging (McFall, 1990). Further, it has been found that alcohol intoxication impairs the ability to inhibit sexual feelings and behaviors (George & Stoner, 2000). Also, in the absence of acute arousal, alcohol intoxication increases sexual risk taking (Conner, Sutherland, Kennedy, Grearly, & Berry, 2008; MacDonald, MacDonald, Zanna, & Fong, 2000). If an alcohol-induced disinhibition also leads to less hesitancy to engage in sexual behavior with children, as suggested by Nunez (2003), it could be argued that adults who engage in solicitation of youth would report higher levels of alcohol intoxication prior to the online interaction compared with adults with only adult contacts. There are several reasons to expect such an association: Alcohol may decrease the individual's ability to perceive risks with their behavior; it may diminish perception of negative cues; or serve as blame attribution (i.e., remove the feeling of being responsible; Abbey et al., 2004; George & Stoner, 2000) for the individual if the behavior engaged in is ego-dystonic.

Previous studies have found that sexual arousal broadens the range of what is found to be arousing, as well as reduces aversion to otherwise repellent stimuli (Ariely & Loewenstein, 2006; Quayle & Taylor, 2002). Indeed, it has been shown that sexually aroused men (Ariely & Loewenstein, 2006) and women (Imhoff & Schmidt, 2014) judge themselves much more likely to engage in a variety of illegal (e.g., having sex with a 12-year old), unsafe (e.g., not using contraception), and manipulative (e.g., deliberately trying to get a person drunk to increase sexual opportunities) behaviors than non-aroused controls.

According to Gee et al. (2003), sexual fantasies and behaviors can also be used to self-regulate emotional states by suppressing or alleviating negative emotional states. In that way, sex is used to resolve non-sexual problems (Quayle, Vaughan, & Taylor 2006), and reinforced because of its hypothesized effectiveness in reducing states of negative emotional arousal (Howells, Day, & Wright, 2004). It has also been suggested that the inability to regulate emotional states together with

sexual desire and problems with control over sexual impulses generate deviant sexual interest by creating deviant sexual fantasies and sexual pre-occupation (Ward & Beech, 2006). Previous research has also indicated that online sexual behaviors have been used to escape from unpleasant realities and negative emotional states, such as stress, anxiety, guilt, and depression (Cooper, Putnam, Planchon, & Boies, 1999; Quayle & Taylor, 2002; Quayle et al., 2006), to an extent that can become addictive (Putnam, 2000). However, whether engaging in online sexual interactions have the sought after effect is not known.

Tying together theories of the adults' characteristics and sexual preferences with situational factors, is the motivation-facilitation model by Seto (2013, p. 127). The model can be applied to adults' solicitation of youth and incorporates motivational factors (e.g., pedophilic or hebephilic sexual interest), facilitating factors (e.g., moral disinhibition due to antisocial tendencies), and situational factors (e.g., access to youth through the Internet, and acute alcohol intoxication). The model is a useful tool for, for example, the investigation into why some adults who solicit youth keep to online communication only, whereas others commit hands-on sexual offences against minors. Hence, Seto's (2013) model may be regarded as an applied version of the previously mentioned model by Mischel and Shoda (1995) on the solicitation process.

Taken together, these studies indicate that situational factors may have a causal effect on the propensity to engage in various sexual behaviors, so that certain situational factors increase the likelihood of engaging in less socially accepted behaviors (e.g., through a disinhibition process).

1.6. Characteristics of Solicited Adults and Youth

According to a population-based survey involving males and females aged 12 to 88, the person most likely to be solicited is a 14-29 year old female (Baumgartner et al., 2010). Of the 12–17 year olds, 19.1% of the girls, and 5.6% of the boys had experienced solicitation attempts during the past six months. In Briggs et al.'s (2011) study on adults who visited chat rooms for the purpose of soliciting youth, it was reported that 50% of the offenders had also solicited (or attempted to solicit) other adults. However, little is known about adult-adult solicitations as most studies on solicitation include only youth targets (although the age range of youth differs between studies). What has consistently been found in victim studies is, though, that older youth are more often solicited (i.e., 14–17 year olds compared to younger; Jones et al., 2013; Livingstone et al., 2011 [NP-R]). Results from police reports support these findings, with 99% of the victims being 13–17 year olds (Wolak et al., 2004). There is some indication that the availability of younger youth online is changing rapidly. Holloway, Greene, and Livingstone (2013 [NP-R])

reported that 9–12 year olds' Internet usage patterns resemble those of older teenagers five years ago. This means that this younger age group is interacting online with others more than they used to five years ago, and could therefore also be at higher risk of solicitation.

Another consistent finding is that girls are more often solicited than boys (Wolak, et al., 2008). Additionally, boys who are uncertain of their sexual orientation or who identify themselves as gay are more often solicited than heterosexual boys (e.g., Baumgartner et al., 2010). The most parsimonious explanation for this would be that most solicitations of youth are committed by men (Wolak et al., 2004). Furthermore, researchers have suggested that boys who are uncertain regarding their sexual orientation, and girls, are targeted more often because of similar behavioral risks they engage in online (Wolak et al., 2008). These risks include visiting chat rooms, and talking about sex with strangers online. Youth who are lonely, depressed, and who have previously been sexually victimized are also more at risk of being solicited (Wolak et al., 2008), with some adults specifically targeting youth who show such signs (Dombrowski et al., 2004; Marcum, 2007). These risk factors are not limited to the online setting and resemble those of youth who have entered a romantic or sexual relationship with an adult in the offline setting as well (Hines & Finkelhor, 2006). Baumgartner et al. (2010) found that frequent chat room visits and using instant messaging services also made adults targets of unwanted solicitation more often compared to adults who did not engage in these online behaviors. Thus, there is reason to believe that many behaviors associated with "unwanted" solicitation of any kind are general (i.e., not specific to either adult-youth or adult-adult solicitation scenarios). In a study by Peter and Valkenburg (2006), the researchers found that younger youth, socially anxious and lonely youth valued the controllability of the Internet higher than non-anxious, non-lonely and older youth. The former group also defined the Internet as more interactional than the latter group, suggesting that it may be important to look into the differing perceptions of subsamples of youth who have been found to often be targets of solicitation.

1.7. Behavioral Characteristics of Adults Who Engage in Solicitation

There seems to be some evidence that youth, in comparison to adults, may have greater difficulties in inhibiting behaviors that may lead to rewards (Steinberg, 2010). Adults who solicit youth have been found to use techniques that are alluring to this side of youth. Using persuasion has been mentioned as prevalent during solicitation of youth (Briggs et al., 2011; Malesky, 2007). However, little is known about the association between using persuasion and the solicitation outcome (e.g., receiving a sexual picture or engaging in cybersex).

The most commonly reported persuasion is offering money or gifts to enhance the likelihood of gaining sexual access to the youth, which was reported in 17–47% of the police reports on solicitation cases (Shannon, 2008; Wolak et al., 2004). It could therefore be argued that using persuasion such as offering money or gifts in return for a sexual picture or cybersex would have a stronger association with the outcome for adults who interact with youth online, compared with those who interact with adults. The reward seeking behavior of youth in combination with a less developed ability of foreseeing long-term consequences (as well as a lower income compared to adults) may lead to situations for some youth that are negative and later regretted. Another persuasion technique is blackmail, which was reported in 16% of the cases in Shannon's (2008) study on police reports of solicitation cases. In other instances the adult has not used persuasion per se but promised love or affection which may be what some youth lack in their lives and search for online (Marcum, 2007).

Another behavior commonly reported in adults who solicit youth is identity deception. Previous research suggests that an estimated 20–50% of the adults employed identity deception (Briggs et al., 2011; Dowdell, Burgess, & Flores, 2011; Malesky, 2007; Seto et al., 2012, Shannon, 2008; Wolak et al., 2004). The most commonly reported identity deception in studies on adults convicted for solicitation is lying about age, with 25–29% pretending to be younger (Malesky, 2007; O'Connell, 2003 [NP-R]; Wolak et al., 2004). Other kinds of deceptions that have been mentioned, albeit not as often, include using a picture portraying someone else and portraying oneself as more physically attractive (Quayle, Allegro, Hutton, Sheath, & Lööf, 2012 [NP-R]). However, lying about one's identity is not an online behavior exclusive to adults who solicit youth, but seems to be a common feature in several types of sexual as well as non-sexual interactions online. In one study that involved interviews with law enforcement agents regarding solicitation cases, it was reported that 9% of the solicited youth had lied about being 18 or older when they in fact were younger (Wolak et al., 2004). Additionally, Whitty (2002) found that approximately 61% of adult chat room participants who interacted with other adults online had lied about their age and 23% about their gender. Embellishing one's occupation, income and education was also common, and more so among men than women. Lying about one's age is also a common feature among adults engaging in cybersex with other adults (Attwood, 2009; Cavalheira & Gomes, 2003). It is unknown whether using identity deception techniques is associated with different solicitation outcomes depending on the age of the deceived person. However, a study (Stieger, Eichinger, & Honeder, 2009) analyzing how the deceived person had experienced being deceived showed that women were more disturbed by this and in both men and women, "gender

switching" was perceived as the most disruptive deception (out of attractiveness, age and gender).

Another feature of the solicitation process that deserves attention is risk management or detection avoidance. This is achievable through several pathways. Adults who solicited youth described interacting in "public" online settings, such as chat rooms or gaming platforms, as risky (Webster et al., 2012 [NP-R]). Although most initial encounters took place in public online venues, the adult often wanted to move the interactions to a more private setting (much like in the process of offline solicitations; Warner, 2000). This serves at least two purposes. Instant messaging, such as Skype, or e-mailing has been reported by soliciting adults to be a preferred means over public online venues, because, firstly, they are perceived as more secure. Secondly, communicating by the aforementioned means makes it easier to isolate the youth (e.g., through manipulation estranging the young from other persons). The purpose of isolation is to enlarge the mental space between the youth and his or her support system (Olson, Daggs, Ellevold, & Rogers, 2007). The isolation may also lead to a speedier relationship formation, with greater self-disclosure outside of oversight by others (McKenna, Green & Gleason, 2002). Isolation is commonly attempted through asking the youth to keep the interactions a secret from parents and peers (e.g., Briggs et al, 2011; Webster et al., 2012 [NP-R]). However, this is not a feature unique to the Internet or adults who target youth, as the progression of moving from a public to a more private space is found in most situations where there is a romantic or sexual motive. Furthermore, this might be amplified in adults who target youth as the possible legal and social reprimands are greater than for adults who target other adults.

Some adults who have solicited youth have also been found to send the youth child pornography as a method to normalize and facilitate online or offline sexual contact (Berson, 2003; Kloess, Seymore-Smith, Long, Shipley, & Beech, submitted; Marcum, 2007). We have no knowledge of studies exploring the prevalence of this behavior in adults who solicit adults, but we argue that this behavior and its possible specificity to adult-youth solicitations may be of importance to explore. It is likely that sending pornography is present also in adult-adult solicitations, albeit for other reasons than in adult-youth solicitations.

Setting aside deception, persuasion and other manipulative behaviors, there is strong evidence that non-sexual conversations play an important role in the solicitation process (Grosskopf, 2010; Webster et al., 2012 [NP-R]). For many adults who have been convicted for an offence connected to online solicitation of youth, the sexual aspect of the communication has played only a minor role (e.g., intimacy-seeking groomers in Webster et al.'s study, 2012 [NP-R]), and is comparable to offline romantic long-term relationships. These behaviors are

engaged in for rapport building, showing interest in the youth, discussing problems and offering support. Although this is not illegal, it is often a path taken in the beginning of a solicitation process. O'Connell (2003 [NP-R]) called these steps the friendship forming stage and the relationship forming stage, which usually did not include sexual topics or activities. This stage in the solicitation process is similar to the offline process involved when an adult prepares a youth for sexual exploitation, during which the goal of the adult is to gain the trust of the youth while managing risks such as detection (Craven, Brown, & Gilchrist, 2006).

1.8. Youths' Behaviors and Cognitions in the Context of Solicitation

Although the present thesis focused on the adult "perpetrator" of the solicitation, a brief look at youth targets as well as their behaviors, cognitions and how they perceived the solicitation is needed. The Internet has over a decade been a natural environment for youth to explore their sexuality (Subrahmanyam, Greenfield, & Tynes, 2004; Valkenburg & Peter, 2011; Vadoninck, d'Haenens, & Smahel, 2014 [NP-R]). Engaging in sexual communication in chat rooms (Subrahmanyam et al., 2004) and trying on sexual personas through avatars (Dowdell et al., 2011), are two of the many possible ways in which youth explore their sexuality online. Although most sexual behaviors youth engage in online are safe, certain behaviors put youth at a higher risk of being solicited by an unknown adult. Not surprisingly, these behaviors include interacting online with strangers (e.g., in chat rooms) and especially talking about sexual topics with them (Wolak et al., 2008). Webster and his colleagues (2012 [NP-R]) found that some of the adults convicted for solicitation reported that they had been surprised when youth who had seemed mature online were in fact much less so in the offline setting. This touches on the complex question concerning cognitive development and risk-taking in youth, and why adults' solicitation of youth entail negative effects for some of the solicited youth.

Youth are as competent as adults regarding online risk perception (e.g., Baumgartner et al., 2010), but more prone to risk-taking (Greene et al., 2000). Steinberg (2004) argued that while reasoning skills are almost fully developed at the age of 15, there are several skills that affect executive functions that are more psychosocial in nature and develop much later. These include impulse control, emotion regulation, and delay of gratification. According to Steinberg (2004), the deficiencies in these sets of skills in youth make them more prone to act on an impulse, although the perception of risk is intact. This has also been directly and indirectly supported by other researchers' findings, as, for example, sensation-seeking behaviors appear to peak in adolescence (Cauffman et al., 2010); it has also been suggested that youth tend to display sub-optimal decision-making especially

when tasks involve an affective element (Figner, Mackinlay, Wilkening, & Weber, 2009; Zuckerman, 1994; Wolak et al., 2008). Steinberg (2010) suggested that the explanation for this might be a dopamine peak in the reward center during early adolescence (see Chambers, Taylor, & Potenza, 2003), making youth more reward driven than adults (Smith, Xiao, & Bechara, 2012). In other words, the power of the short-term reward often exceeds the self-regulation capacities of youth, making them more prone to act on impulses that they later may regret. In addition, it has been shown that the reduced number of observable cues (e.g., physical attributes of the other person) that characterize most online communication increased online disinhibition among adolescents (Shouten, Valkenburg, & Peter, 2009). Hence, some adults who solicit youth have used techniques, such as offering money or gifts (Davidson et al., 2011), drawing on these sub-optimal cognitive skills in youth (as mentioned in Chapter 1.7).

Although there is consistent evidence that older youth (compared to younger) are at greater risk of being solicited online by adults, there is also evidence that younger youth and children are rapidly becoming more similar to older youth in their use of interactive features of the Internet (Holloway et al., 2013 [NP-R]). Livingstone et al. (2011 [NP-R]) reported that the mean age of initial internet log-in was 10 in Germany, 8 in Finland, and 7 in Sweden. Children and younger youth are not equally good or at least not as efficient in their risk appraisal as older youth, as their cognitive skills are not as fully developed as the latter group (Hiller & Morrongiello, 1998; Steinberg, 2004).

1.9. Youths' Experiences of Solicitation and Solicitation Attempts

Generally, children and younger youth have found the experiences of solicitation more upsetting and frightening than older youth (Mitchell et al., 2001). In a survey study inquiring about youth clients from clinicians, somewhat more participants reported that their clients who had experienced online sexual exploitation suffered from PTSD and other mental health problems, compared with youth with other internet-related problems (Wells & Mitchell, 2007). In cases where the soliciting adult had attempted to make, or successfully made, contact offline, it had been perceived as more upsetting by the youth. In another survey study, 9% of youth in European countries reported that they had met someone offline whom they had initially met online, but of these, only 1% reported that they had felt bothered by the meeting (Livingstone et al., 2011 [NP-R]). In a study on the police reports of reported cases of solicitation, 5% had involved physical violence, such as rape or attempted rape (Wolak et al., 2004). One of the reasons to tread carefully when discussing the issue of adult's solicitation of youth is the possibility that some might wrongly infer blame attribution onto the youth because of the fact that they

are, more often than not, active participants in the solicitation process (Wolak et al., 2008). It has been found that youth met up with the adult in person more than once in 73% of the cases (Wolak et al., 2004). Although very few youth were blackmailed or threatened into meeting them according to this study, it does not mean that any blame should be attributed to the youth. Only a minority of youth tell someone about having experienced solicitation (Priebe et al., 2013). The complexity of the impact of solicitation was presented in a qualitative study (Whittle, Hamilton-Giachritsis, & Beech, 2013). Many of the psychological difficulties reported by the youths were similar to victims of offline abuse as well, such as shame, aggression and embarrassment (Wolak et al., 2006). The longer the duration of contact, the more harm it had caused, however one of the adolescent females showed most signs of harm due to missing the adult offender. This is an issue to consider for clinicians working with victims of this kind and shows how complex a matter solicitation is (Whittle, Hamilton-Giachritsis, & Beech, 2013).

Although the focus of the present thesis was on solicitation that takes place online, it is important to note that many of the characteristics that have been mentioned in the context of solicitation (e.g., individual, motivational and behavioral) are present in offline sexual relationships involving adult and youth as well. Indeed, many solicitations that begin online move on to the offline setting, and become what Hines and Finkelhor (2007) called "statutory relationships". In their review, Hines and Finkelhor (2007) used this term as it alludes both to the victim being under the legal age of consent, and the presence of some degree of mutuality in the interactions between the parties. These relationships most often involved an adult male and a female in her mid-teens, corresponding with individual characteristics of also solicitation cases (e.g., Baumgartner et al., 2010; Mitchell et al., 2010b; Wolak et al., 2004). Other shared characteristics are, for example, that the youth sometimes enter such a relationship for monetary gain or to receive attention and affection (Hines & Finkelhor, 2007; Lanning, 2002 [NP-R]).

2 Aims

The studies included in the present thesis consisted of self-reported solicitations by an online nonprobability sample of adults (Study I-III), and interactions with online chat room visitors who communicated with impersonated youth (Study IV). The purpose of the present thesis was fivefold: 1) to obtain an estimate of the frequency of adults' solicitation of youth as self-reported and observed in actual behavior; 2) to explore whether the legal age of consent (LAC) affects solicitation frequency, or whether a normally distributed sexual age preference more accurately describe the proportion of solicited youth of different ages; 3) to investigate the role of both trait (i.e., pedo- or hepephilic sexual interest) and states (i.e., situational factors) on the solicitation; 4) to explore whether adults who solicit youth and adults who solicit adults are as deceitful and manipulative online, and whether the different solicitation outcomes are as common in both groups; and 5) to investigate if the deceitful and manipulative behaviors engaged in had different associations with the solicitation outcomes depending on the age of the solicited. The specific research questions for each purpose of the thesis were either hypothesis driven (marked by an H) or exploratory (marked by an E), and were as follows:

1. **Self-reported Compared to Observed Frequency of Adults Solicitation of Youth**

E: What is the self-reported frequency of having solicited adults and youth (Study I), and how often are youth of different ages solicited in chat rooms? (Study IV)

2. **The Role of Legal Deterrence and Sexual Age Preferences**

H: There is a positive association between the age of youth and the proportion of sexual interest expressed towards them by chat room visitors (Study IV)

H: There is a stronger increased amount of solicitation attempts towards youth in chat rooms between illegal to legal (i.e., under the LAC compared to over the LAC) than increases in illegal-illegal, and legal-legal age groups (Study IV)

3. **Solicitation of Youth: An Underlying Paraphilia or Driven By the Situation?**

H: Self-reported frequency of having solicited youth is higher among adults recruited from websites associated with pedophilic sexual interest compared with adults recruited from general websites (Study I)

H: Adults who have solicited youth report consumption of child- and adolescent pornography more often than those who have only solicited adults (*)[5]

H: Adults who have solicited youth, compared with those who have only solicited adults, report higher levels of alcohol intoxication, sexual arousal and more pronounced negative emotional states before the solicitation (Study III)

E: Do adults with youth contacts who do not report consuming child or adolescent pornography report higher levels of sexual arousal before the interactions with youth compared to those who do report consuming child and adolescent pornography? (*)

E: Is there an interaction with the contact's age and possible alleviating effects of the sexual interaction on negative emotional states? (Study III)

H: Online sexual interaction has an alleviatory effect on perceived sadness, boredom and stress (Study III, *)

4. Prevalence of Manipulative Behaviors and Solicitation Outcomes among Adults with an Adult Contact Compared to Those with a Youth Contact

H: Adults who solicit youth more often engage in manipulative behaviors compared to adults who solicit adults (*, Study II)

H: Adults who solicit youth equally often receive a sexual picture, engage in cybersex, meet offline and engage in sexual contact offline as adults who solicit adults (Studies II and III)

E: Do adults who solicit youth and adults who solicit adults differ in how often they send or share pornography with their contact and do they differ in kind of pornography sent? (*)

E: How do adults suggest continuing the sexual communication after the initial online chat room encounter with youth of different ages? (Study IV)

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[5] * = Additional analyses for the purpose of the present thesis.

5. Contact Age and Associations between Manipulative Behaviors and Solicitation Outcomes

E: Are there different associations between the use of identity deception and suggesting secrecy on the solicitation outcomes depending on the age of the contact? (Study II, *)

E: Are there different associations between the use of persuasion techniques and the solicitation outcomes depending on the age of the contact? (Study II, *)

3 Methods

3.1. Participants in Studies I-III

The participants in Studies I-III originated from an online survey directed to adults with fluent German, Finnish or Swedish (i.e., the original English questionnaire was translated into these languages). The current country of residence was not included as a question in the survey; hence the current nationality of the participants remained indicative at best based on the language of the survey and server belonging of the website where the participant accessed the survey.

Before moving on to the samples chosen for Studies I-III, Table 1 included samples before any exclusions were made, showing differences between participants that reported no online communication with strangers and those who reported communicating with strangers. All characteristics as well as behaviors (i.e., spending more than five hours online per day for other than study or work-related reasons) differed between these groups. This suggested that individuals communicating with strangers online and those who did not, differed in many Internet related as well as individual characteristics.

Table 1

Demographic Comparisons between Participants Who Did Not Report Online Communication with a Stranger during the Past Year with Those that Reported at Least One Stranger Contact

	No online communication with a stranger, N (%)	Online communication with a stranger, N (%)	χ^2/t
Survey language	1423 (100)	1489 (100)	93.50***
German	751 (52.8)	1039 (69.8)	
Finnish	613 (43.1)	392 (26.3)	
Swedish	59 (4.1)	58 (3.9)	
Participant gender (Male)	633 (44.5)	810 (54.4)	28.62***
Mean age (*SD*)	28.8 (9.8)	28.3 (10.0)	1.28
In a relationship	879 (61.8)	722 (48.5)	51.86***
At least high school graduation	1031 (80.7)	825 (76.6)	5.99*
> 5 h online/day	78 (5.6)	274 (19.1)	119.77***

Note. Participants were included here independent of how complete or incomplete their surveys were. A composite variable was created for "in a relationship" vs. being single. >5 h online/ day excluded inactive time online during e.g., downloading and study/work related tasks. The question regarding

educational degree was responded to by N = 2354, and hours spent online/ day was responded to by N = 2837. All other questions were responded to by N = 2912 participants. ***p < .001, *p < .05.

Different subsamples were used in Studies I-III (Table 2, and Figure 1). The final sample used in the additional analyses for the present thesis, as well as in Study III, consisted of 717 adults: 423 men (M_{age} = 30.3, SD_{age} = 10.4), and 304 women (M_{age} = 27.9, SD_{age} = 9.0). The age difference between men and women in this sample was significant ($t[715]$ = 3.23, $p < .05$). A majority of the participants were included in the control group (adult contact; AC) consisting of individuals who had only engaged other adults in online sexual communication online (n = 640; 89.3%). The remainder constituted the youth contact group (YC, n = 77; 10.7%). 58.4% of the YC participants belonged to a specific subsample that had found the link on one of two pedophilia-related German websites used by the investigators to recruit participants, however 16.8% of the AC participants were also derived from these ($\chi^2[1]$ = 71.272, $p < .001$). The first pedophilia related website promoted a therapy project for self-identified pedophiles. The second website was an online community oriented towards self-identified pedophiles that offered free access to information and discussions about pedophilia (e.g., diagnosis, and legal age of sexual consent), as well as forums for registered members to interact with each other. The administrators were promised that the identity of these websites would remain anonymous for the protection of their registered members and are therefore not revealed in the present thesis. For a flow chart on the exclusions in Studies I-III, please consult Figure 1.

Accessed a link to the survey, N = 7733
Survey language distribution: German, n = 4664, Finnish, n = 1950, Swedish, n = 1119

Exclusion criteria for all samples
Empty or systematic responding — 4024
Age < 18 — 20
Age > 90 — 13
Failed to respond to critical online communication questions below — 831

Responded to critical online communication questions
Participant age, gender and kind of online communication — **2828**

No online communication with strangers — 1423
Online communication with at least one stranger — 1405

Reported online contacts age and gender — 1393
Online sexual communication with at least one stranger
or online non-sexual communication with a sexual outcome
(i.e., having engaged in sexual activities offline) — 779

N = 779

Excluded: Adult contact only
n = 642

Excluded: No sexual communication online, n = 3

Excluded: No sexual communication online, n = 3
Participants with youth contacts that were less than > 5 years older, n = 59

Frequency study (N = 137)
Men = 99
Women = 38
Age range = 18–50
German = 119
Finnish = 18
Swedish = 0

Deception study (N = 776)
Adult contact = 640
Youth contact = 136
Men = 453
Women = 323
Age range = 18–72
German = 577
Finnish = 164
Swedish = 35

Situational study (N = 717)
Adult contact = 640
Youth contact = 77
Men = 413
Women = 304
Age range = 18–72
German = 529
Finnish = 159
Swedish = 29

Figure 1. Flow chart describing the exclusion and inclusion criteria for the different study samples (Study I-III). Participants responded to the online communication question and online sexual communication according to age and gender of all their contacts. All subsequent questions were replied to only according to the youngest contact that participants reported. If the participant reported sexual communication, the participant responded according to the youngest sexual contact, otherwise to the youngest non-sexual contact. Only one set of questions were responded to by each participant.

Table 2

Research Questions and Participants in the Original Studies

Stu-dy	Objective	Partici-pants	Participant gender Men/Women	Participant age	Contact age
		N	N (%)	M (SD)	
I	Frequency of solicitation of children and adolescents within GW and PW participants	137	90 (65.7)/47 (34.3)	29.1 (7.9)	≤13/ 14-17
II	Prevalence of, and associations between identity deception, secrecy and the solicitation outcomes	776	453 (58.4)/323 (41.6)	28.7 (10.0)	≤13, 14-17/ ≥18
III	Perceptions of situational factors surrounding the time of the solicitation	717	413 (57.6)/304 (42.4)	29.1 (9.7)	≤13, 14-17/ ≥18
IV	Prevalence of sexual interest and lack thereof directed at 10-18-year olds in chat rooms	257	257 (100)/-	31.2 (9.3)	10/12/14/ 16 and 18

Note. M = mean; *SD* = standard deviation. GW participants = Recruited from general websites, PW participants = Recruited from pedophilia-related websites. AC = Adult Contact, YC = Youth Contact. In Studies I-III subsamples of the same data collection were used while the sample in Study IV was derived from a separate data collection, *n* = 6 were excluded from the *N* = 257 in the additional analyses for the present thesis because they were between 15 and 17 years old.

Different combinations of contact age groups within YC participants are presented in Table 3. The majority of both women and men that belonged to the YC group reported having solicited both adults and adolescents.

Table 3

Participants with Youth Contacts and the Different Exclusive Categories of Contact Combinations

	Adole-scents	Child-ren	Adults & adolescents	Adults & children	Adolescents & children	All age groups	*N*
Men	8 (13.8)	3 (5.2)	29 (50.0)	4 (6.9)	1 (1.7)	13 (22.4)	58 (100)
Women	2 (10.5)	-	13 (68.4)	1 (5.3)	-	3 (15.8)	19 (100)
Total	10 (13.0)	3 (3.9)	42 (54.5)	5 (6.5)	1 (1.3)	16 (20.8)	77 (100)

*Note. n*s (percentages within brackets) reported for each combination group. Participants have been exclusively assigned to one contact category per individual. Of the participants with adult contacts only, (*N* = 640), 285 (44.5%) were women and 355 (55.5%) were men.

3.2. Participants in Study IV

Participants (*N* = 251) in Study IV were unidentified chat room visitors (contacts). All contacts who engaged the impersonated youth (i.e., the researchers) in private online conversations alleged to be male (one claiming the presence of his girlfriend). The mean age of the contacts that replied to the impersonated youth's question about their age (*N* = 222) was 31.2 years (*SD* = 9.3). Another 6 contacts reported an age less than 18 years (these were excluded from subsequent analyses in the present thesis). All contacts communicated in either Swedish or Finnish, and those that responded to the question concerning their current place of residence, reported a city or region in either Finland or Sweden, however as this was self-reported by the contacts, an unknown number may have resided elsewhere.

3.3. Procedure in Studies I-III

Following Ridings, Cefen and Arinze's (2002) procedure, we used common search engines (e.g., Google, Yahoo!) to identify websites that allowed individuals to interact with each other in Finland, Germany, and Sweden. There was no restriction concerning the thematic focus, but websites disagreeing with promoting the study or without activity within one month were dismissed. This resulted in 97 German, 15 Swedish and 16 Finnish websites including social networks (e.g., Facebook, Twitter, Snapscouts), and online communities (focusing on e.g., news, politics, health, lifestyle, sex, computer, dating, and gaming). Although restrictions of online nonprobability sampling exist, Wilson, Gosling, and Graham (2012) argued that social scientific research on online social networks (OSN's), such as Facebook is both warranted and valuable. Wilson et al. (2012) made this

conclusion based on the wide age range of Facebook users, and the increasing importance OSN's have in the daily lives of over a billion users.

Furthermore, we recruited participants via various student mailing lists at Åbo Akademi University, Finland. Posts with information about purpose, procedure and incentive promoted the survey between July and December 2012. Bi-weekly checks permitted renewing posts for continued conspicuity and responses to feedback. Posts on different websites contained individual links to the survey to monitor the participation rates and enable identifying separate subgroups of participants. The different languages chosen for the survey was to explore the possible effect of national variations in legal age of consent. Although all three countries have or will adopt the European Council's and Parliament's directive concerning the criminalization of solicitation, the national legal age of consent is not affected by this.

Unique links were created for different recruitment channels such as online social networks, chat forums, and the university sample. The survey links directed participants to a secure server (www.soscisurvey.de). The introduction informed participants that the study assessed social and sexual online behaviors and motivating factors. Participants were informed that participation was voluntary and anonymous and required a minimum age of 18 years. The incentive for participation was a lottery for one of ten vouchers per country for Amazon.eu worth an equivalent of €20 each. The programming disabled recording of identifiable information (e.g., IP address) and moving backwards between survey pages. After indicating their consent, participants proceeded to the survey. The final page of the survey contained information on where to seek help in each country for those who have a pedophilic or hebephilic sexual interest, as well as information regarding national legislation concerning grooming and child sexual abuse. Upon finishing the survey, a link forwarded participants interested in the lottery to another website to record email addresses separately from survey data. The study was approved by the ethics committee of Deutsche Gesellschaft für Psychologie, Germany and Åbo Akademi University, Finland.

3.4. Procedure in Study IV

Study IV employed a quasi-experimental approach with researchers impersonating youth aged 10 to 18 in chat rooms. Before the data collection was in progress, the researchers studied the language use of youth as passive observers in chat rooms directed towards youth. The purpose for this was for the researchers to convincingly pose as contemporary youth, using, for example, age-appropriate online abbreviations (e.g., MOS = Mum Over Shoulder; ASL = Age, Sex and Location) during the online conversations with contacts. Another purpose for the

pilot study was for the researchers to become familiar with the kind of questions typically asked by youth to whomever they discussed with. The limited demographic information we received of the participants in Study IV was based on this, as youth seldom showed interest in the occupation, or level of education of their online contact. Based on this and a previous pilot study (please consult the original study; Study IV), the researchers agreed upon and followed a script detailing conduct in the chat rooms. However, some variations in the conversations were accepted, when they were deemed necessary not to disrupt the flow of the conversation.

The chat rooms included in Study IV were chosen on the basis of their being the most actively visited chat rooms in Sweden and Finland at the time of the data collection. Other reasons for choosing these chat rooms were that they were free of charge, and did not demand registration. Of the three chat rooms (one Swedish and two Finnish), one was directed towards homosexual or bisexual men, while the other two were unspecified in this regard. As almost all adults convicted for having solicited an unknown youth have been men (Wolak & Finkelhor, 2013), and as men have been found to be more prevalent in chat rooms such as those included in Study IV (Subrahmanyam, Smahel, & Greenfield, 2006), we chose to construe our impersonated youth identities in a manner that was directed towards men (i.e., impersonating male youth in the chat room frequented by homosexual men, and female in the other two chat rooms). It is important to note that sexual invites or topics were never raised by the researchers impersonating youth (please see the original publication for the agreed upon conduct, Study IV; Table 2). All conversations were copied and saved to enable reliability control (please see Appendix B for examples of chat room transcripts). Because of the sensitive material gathered in this study, all contacts remained completely anonymous and the nicknames as well as other information enabling identification were removed from Appendix B as well as from the data file. The research plan for this study was approved at an ethics review seminar at the Department of Psychology and Logopedics, Åbo Akademi University, Turku.

3.5. Measurements in Studies I-III

Items that were derived from the survey data (i.e., items included in Studies I-III and additional items included for the purpose of the present thesis) are presented in Appendix A. The logic of the survey is presented in Figure 2 as a flow chart.

3.6. Measurements in Study IV

The behavioral characteristics that were suggestive of a sexual interest in the impersonated person (i.e., the researchers impersonating children and adolescents) were the different means by which the chat room visitors (contacts) wanted to continue the sexual conversations (after receiving knowledge of the portrayed age of the impersonated person). These were; 1) suggesting continuing chatting in the chat room or meeting up in the chat room on a later occasion (chatting); 2) suggesting to use a webcam to continue the conversation (webcam); 3) suggesting to use an instant messaging service (IM); 4) suggesting to meet offline (F2F); 5) suggesting to continue via telephone calls (telephone); 6) by sending, sharing or receiving a picture portraying the contact or the youth (picture). The remaining behaviors were interpreted as a lack of sexual interest. As these were not the focus of Study IV in the present thesis we urge the interested to consult the original publication (Study IV; Table 1). Additionally, please consult the original publication for a more detailed account of the procedure in this study (Study IV; Table 2).
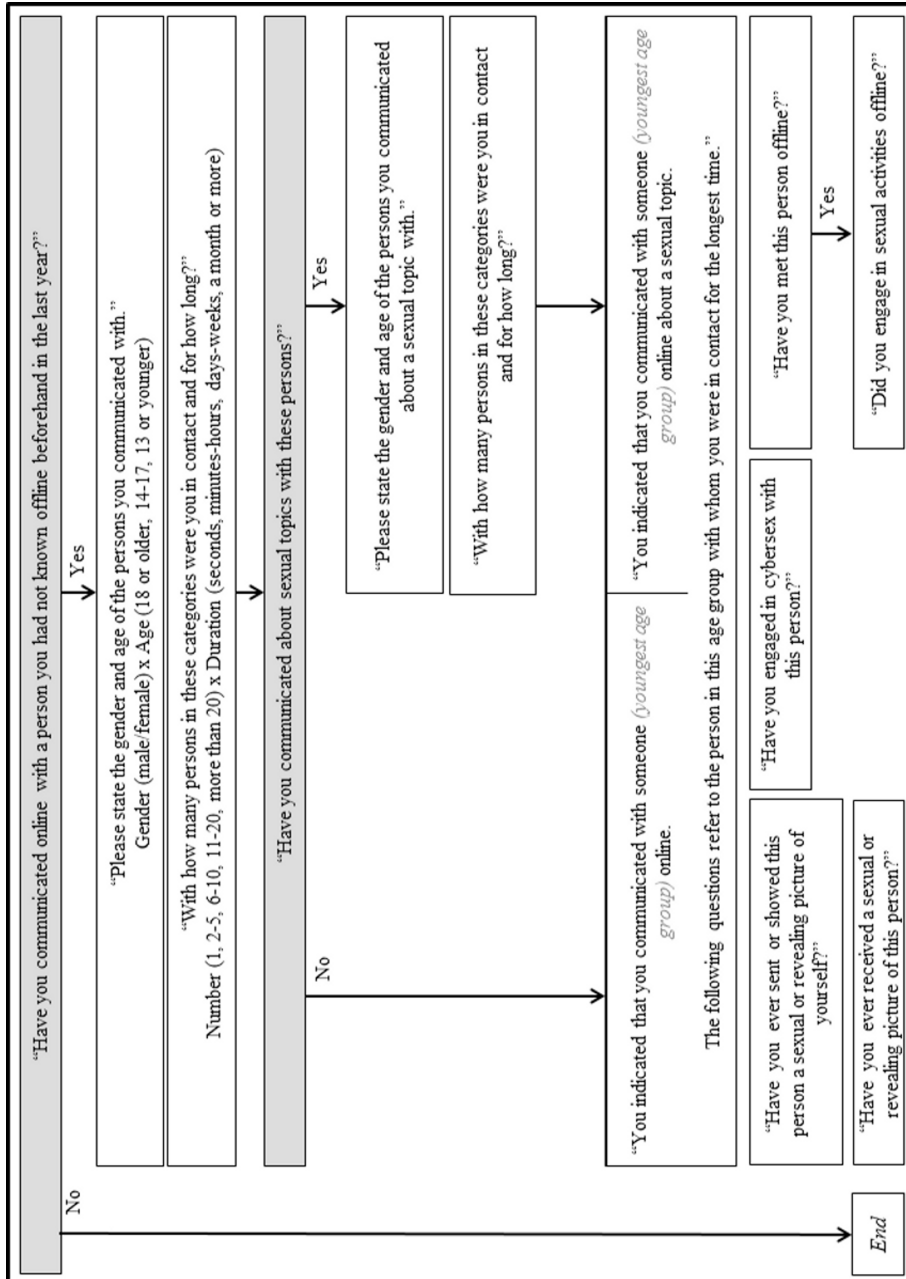
Figure 2. Flow chart of the logic of the survey.

The flow chart contains the following elements:

"Have you communicated online with a person you had not known offline beforehand in the last year?"

No → End

Yes →

"Please state the gender and age of the persons you communicated with." Gender (male/female) x Age (18 or older, 14-17, 13 or younger)

"With how many persons in these categories were you in contact and for how long?" Number (1, 2-5, 6-10, 11-20, more than 20) x Duration (seconds, minutes-hours, days-weeks, a month or more)

"Have you communicated about sexual topics with these persons?"

Yes →

"Please state the gender and age of the persons you communicated about a sexual topic with."

"With how many persons in these categories were you in contact and for how long?"

"You indicated that you communicated with someone *(youngest age group)* online about a sexual topic."

"You indicated that you communicated with whom you were in contact for the longest time."

No →

"You indicated that you communicated with someone *(youngest age group)* online."

The following questions refer to the person in this age group with whom you were in contact for the longest time.

"Have you engaged in cybersex with this person?"

"Have you ever sent or showed this person a sexual or revealing picture of yourself?"

"Have you ever received a sexual or revealing picture of this person?"

"Have you met this person offline?"

Yes →

"Did you engage in sexual activities offline?"

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3.7. Statistical Analyses

In Study I, all items on online sexual solicitation and demographics yielded categorical data except age. Thus, χ^2-tests and ANOVAs were used for data analyses. If the assumptions of the χ^2-test for minimal expected frequencies were violated, p-values of the Fisher-Yates test were reported. The data in Study I were analyzed with IBM© SPSS© Statistics 22 (International Business Machines Corp, 2014).

The data in Studies II and III, as well as additional analyses for the present thesis (that were not included in the original publications), were analyzed with SPSS 21.0 IBM SPSS Statistics 21.0 (International Business Machines Corp, 2012).

In Studies II and III, chi-square and t-tests were to compare means for descriptive statistics (e.g., gender differences). To account for multiple comparisons, Bonferroni adjusted p-values were reported alongside unadjusted p-values in Studies II and III. The reasoning behind reporting both unadjusted and adjusted p-values was that Bonferroni corrections have been criticized as too stringent, increasing the likelihood of false negatives (Nakagawa, 2004). Odds ratios were computed to estimate effect size of associations between the predictor and the outcome variables in Study II. In Study III, we asked the participants to report how affected they were by situational factors before, during and after the online sexual interaction, hence, a repeated measures design, the General Linear Model regression procedure, was chosen to account for within-subject dependence in Study III. Where applicable, missing values were imputed using the Missing Value Analysis module of SPSS 21.0, utilizing the Expectation Maximization procedure.

In Study IV, PASW Statistics 18.0 (PASW, 2009) was used for all analyses. To account for bias resulting from different researchers impersonating youth online, we conducted all analyses using a Generalized Estimating Equations (GEE). GEE fits a generalized linear model to observations with an unknown correlation structure (Gardiner, Luo, & Roman, 2009). Inter-rater reliability was established by having two research assistants rate 20 randomly selected discussions; this analysis revealed that consistency between different raters was good (Cohen's $\kappa = .69$). Qualitative examples of the chat room transcripts will be given. These were translated from Swedish or Finnish by the author, depending on the chat rooms used and the nicknames and other identifying information was excluded to protect the subjects' identities.

4 Results

Demographic characteristics of the sample from the survey data will be presented first. Following this, the results will be presented according to the five-folded purpose of the present thesis (see Aims, p. 37). The results from Studies I-IV presented in this thesis summary will only include results of statistical tests if these were not included in the original publications. For the additional analyses concerning data from the survey study, we used a conservative subsample of the participants with youth contacts (YC participants), who were at least 23 years old or older when the contact was an adolescent (i.e., here; 14–17 years old) or at least 19 years old when the contact was a child (i.e., here; 13 years old or younger), to exclude peer solicitations between youth. In the additional analyses, all participants with an adult contact only (AC participants; contacts at least 18-years old) were included. As the group of women with a YC was small ($N = 19$), we collapsed both men and women in all additional analyses for the present thesis, and separated only when exploring specific gender-based hypotheses. All items included in the present thesis from Studies I-III are presented in Appendix A, and items concerning solicitation in Figure 2.

4.1. Demographic Characteristics of Participants in Studies I-III

Participant characteristics of the sample in Studies I-III are presented in Table 4, together with information on their use of measures to protect their identity online. The demographic characteristics of this online nonprobability sample corresponded with Eurostat Internet user demographics (responded to by 216 899 16–74-year olds in Europe; Seybert & Lööf, 2010[NP-R])

  Some differences between the YC participants and the AC participants were found. Supporting previous findings, there were more male than female participants in the YC group. The alternatives for the duration of the communication were: 1) seconds; 2) minutes to hours; 3) days to weeks; and 4) a month or more. There was no significant difference in the duration between AC ($M = 3.79$, $SD = 1.54$) and YC participants ($M = 4.22$, $SD = 1.50$), indicating that a month or more was the most common duration of communication within both participant groups ($t[692] = 2.28$, $p = .635$). As previous studies rarely report cases of women convicted for soliciting youth, we also explored whether more women in the YC group would have reported communicating a shorter time with their contact as would be expected if they were not knowingly engaging a youth in a sexual interaction. However, women had communicated with the youth for similar durations ($M = 3.12$, $SD = 0.86$) as men ($M = 3.00$, $SD = 0.93$) ($t[65] = 0.46$, $p = .647$).

We also explored whether YC participants would protect their identities online more rigorously than AC through different measures. We found no overall difference (i.e., any online identity protection). However, YC participants used pre-paid phone cards as a means to log on to the Internet for the purpose of soliciting someone more often. The YC participants also used encoded channels for the same reason more often than AC participants (Table 4).

Table 4

Individual and Behavioral Factors of the Participants with an Adult Contact and those with a Youth Contact (Studies I-III)

	Adult Contact	Youth Contact	
	n = yes/N (%)	n = yes/N (%)	χ^2
Participant gender (male)	355/640 (55.5)	58/77 (75.3)	11.095**
Contact gender (male)	364/616 (59.1)	26/73 (35.6)	14.641***
Relationship status (in a relationship)	304/640 (47.5)	35/77 (45.5)	0.1156
University or vocational university degree	180/513 (35.1)	20/61 (32.8)	0.127
Currently employed	203/515 (39.4)	28/61 (45.9)	0.955
Currently a student	240/515 (46.6)	22/61 (36.1)	2.442
More than 5h online/d[a]	133/621 (21.4)	22/73 (30.1)	2.863
Any online identity protection	363/517 (70.2)	42/62 (67.7)	0.161
Restricted personal information	295/363 (81.3)	36/42 (85.7)	0.499
Configure software	130/363 (35.8)	21/42 (50.0)	3.240+
Securing interface/modem	84/363 (35.8)	8/42 (19.0)	0.359
Pre-paid phone cards	7/363 (1.9)	6/42 (14.3)	18.50***
Use of encoded channels (e.g., jagger)	43/363 (11.8)	12/42 (28.6)	8.97**
Other security measures online	35/363 (9.6)	6/42 (14.3)	0.892

Note. Most of the variables were derived from non-compulsory questions therefore the *n*s vary. [a] = for other than study or work related reasons. *** $p < .001$, ** $p < .005$, * $p < .05$

In Figure 3, the online setting where the participants initially encountered their contact is presented. The only difference found between AC participants and YC participants concerning where they had initially encountered their contacts was found in dating websites. AC participants had more often encountered their contact on dating websites. Most of the YC participants had met their online

contact in either chat rooms or on an OSN, supporting previous findings (Baumgartner et al., 2010; Mitchell et al., 2010a).
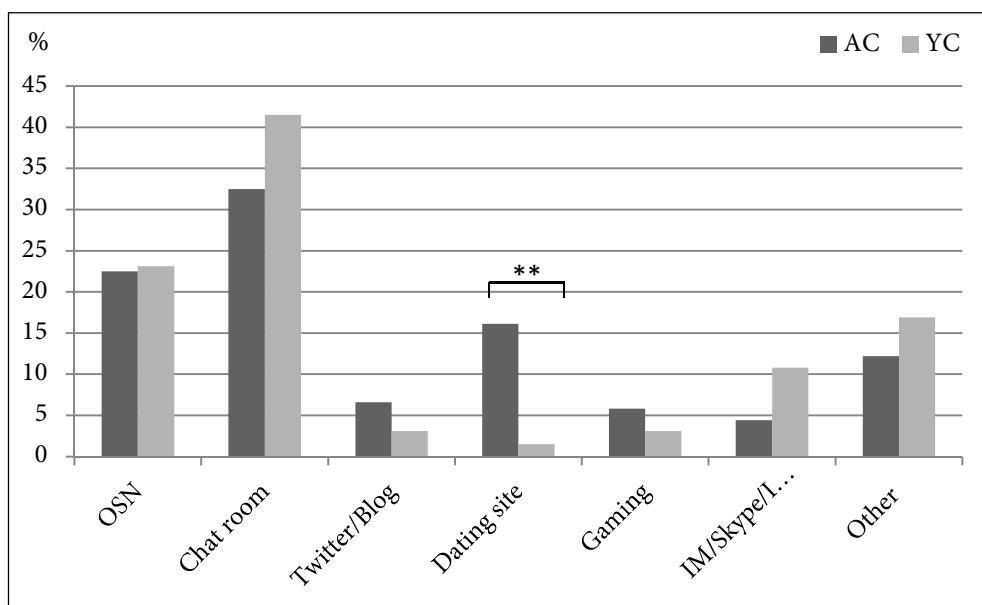

Figure 3. Online setting for the initial encounter between the participant and his/her contact. OSN = Online Social Network. Gaming including virtual realities. **$p < .005$.

4.2. Self-reported Compared to Observed Frequency of Solicitation of Youth (Studies I and IV)

As Seto (2013) noted, reported frequencies of solicitation differ depending on the methodology and sample used, rendering estimates of the true prevalence indicative rather than conclusive. We therefore wanted to explore the frequencies in our two samples. In Study I, we investigated the self-reported frequency of solicitation of adolescents and children among adult Internet users. Of the participants confirming online communication with strangers ($N = 1393$), 779 (55.4%) reported having had sexual interactions with at least one contact. Participants with adult contacts only (AC; $n = 642$) were excluded from subsequent analyses in Study I. Of the participants confirming online communication with strangers, 137 participants (9.8%) reported sexual interaction with unknown youth (i.e., YC, here; 0–17 year olds). Of these, 108 (7.7%) reported soliciting at least one adolescent (here; 14–17 year olds), and 9 (0.6%) reported having solicited only a child (here; 13 year olds or younger), with a further 20 individuals (1.4%) reporting contact with at least one adolescent and at least one child. Subsequently, participants were assigned to groups

based on the age of the youngest contact whom they reported having solicited (i.e., 108 participants with an adolescent contact and 29 participants with a child contact).

Of the 108 participants who reported having solicited an adolescent (and not a child), 67.3% (n = 90) had completed the survey in German, and the websites where links to the survey was accessed, belonged to German servers. The remainder of participants who had solicited an adolescent had completed the survey in Finnish or Swedish, and the servers providing the websites where the participants accessed the survey were Finnish[6] (n = 18; 32.7%). Hence, no participants accessing the survey from Swedish servers reported having solicited adolescents. In addition, all participants reporting having solicited children were recruited on German websites. The over-representation of German participants with a child or adolescent contact was mostly due to the two German websites related to a pedophilic sexual interest. When we compared participants with adolescent contacts and child contacts, we found that those with adolescent contacts were significantly younger than those with child contacts. Additionally those with child contacts kept in touch with their contact for a longer duration. Child contact participants also reported more often that they had solicited more than 20 individuals (from the same age group, i.e., children) during the past year, compared with adolescent contact participants.

In the quasi-experimental chat room study (Study IV), sexual interest expressed by the contacts towards the impersonated youth (i.e., researchers impersonating males and females of the age 10–18) was associated with the portrayed age. Older impersonated youth received a higher number of suggestions to continue the sexual conversations (Figure 4). An overall effect of the age of the impersonated youth was found on the proportion of solicitation attempts made by the contacts, showing that solicitation attempts increased with older impersonated age, as we had expected.

In 21.6% of the cases when the contact interacted with an impersonated youth aged 10, the contact suggested continuing the sexual conversation he had initiated in the chat room. This was the case in 29.8% of the conversations with impersonated 12 year olds, and in 45.5% of the cases involving impersonated 14 year olds. 73.5% of the contacts who were under the assumption of interacting sexually with a 16 year old suggested continuing the sexual conversation and 91.1% with supposed 18 year olds.

To summarize, 32.1% of the contacts attempted to solicit supposed 10–14 year olds in the Swedish and Finnish chat rooms. Of the participants in the survey study that reported any online communication with strangers during the past year, 9.8%

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[6] Due to a Swedish speaking minority of around 5% in Finland from which also the university sample was gathered (Åbo Akademi University).

reported having solicited youth. Of these, 56.2% (*n* = 77) were more than five years older than the youth contact and were arguably not peer solicitations among youth.
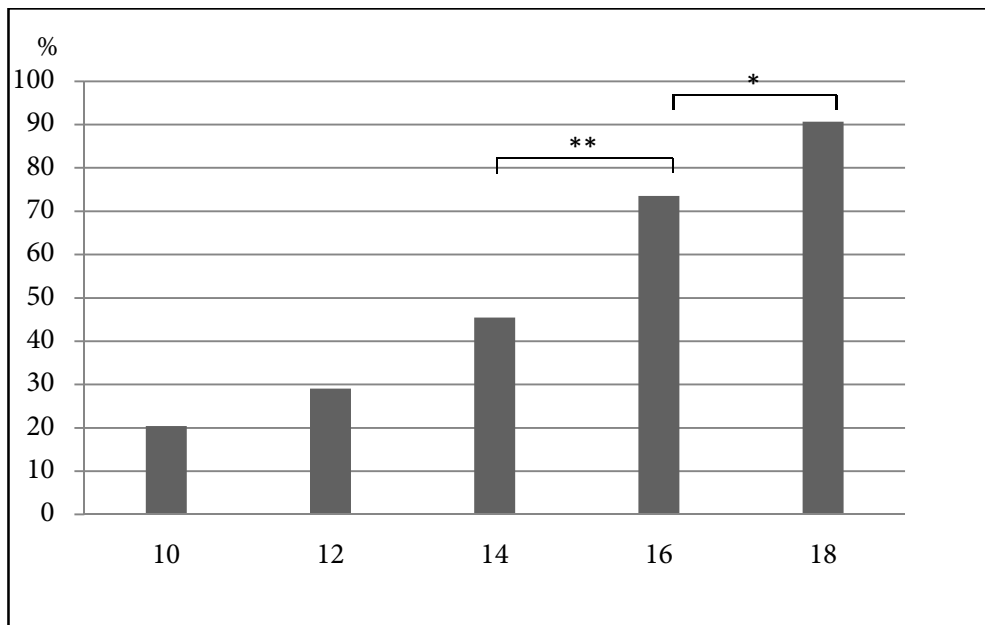

Figure 4. Percentages of sexual interest expressed by chat room visitors towards impersonated youth according to the portrayed age. **$p < .005$, *$p < .05$.

4.3. The Role of Legal Deterrence and Sexual Age Preferences (Study IV)

The solicitation attempts followed a curvilinear increase according to the portrayed age of the youth in Study IV (Figure 4). Upon a visual inspection it would seem that the distribution of solicitation attempts would follow the assumption of sexual age preferences being normally distributed within adults who engage in sexual solicitation in chat rooms. However, by using the legal age of consent (LAC) as a cut off (15 years in Sweden and 16 in Finland), we explored whether we could find evidence of legal deterrence on solicitation of youth. We explored whether the change in increase of solicitation attempts towards youth immediately over the LAC (16 year olds) compared to immediately under the LAC (14 year olds) would be bigger than the change between attempts towards 14 year olds compared to 12 year olds (i.e., both illegal age groups), and compared to attempts towards 18 year olds compared with 16 year olds (i.e., both legal age groups). Conclusive evidence of an effect of legal deterrence would have demanded that the effect of an increased age of the impersonated youth from 14 to 16 would have been stronger than the other

changes in increase towards youth within illegal age groups and within legal age groups. Additionally, the confidence intervals should not overlap. When we conducted logistic regression analyses on the proportions of solicitation attempts, we found that the effect of an increase in age from 14 to 16 was indeed found (OR[1] = 3.32, $p < .005$). However, an effect of increasing the impersonated age of the youth from 16 to 18 also increased solicitation attempts (OR[1] = 3.70, $p < .05$). No other effects of an increase in age of the impersonated youth were found (i.e., solicitation attempts towards 10 year olds compared with 12 year olds, and 12 year olds compared to 14 year olds). All the confidence intervals overlapped for the different comparisons. Hence, at best, non-conclusive support for an effect of legal deterrence through LAC was found. We did find qualitative evidence of awareness and concern when the age was portrayed as under the LAC. The worry expressed by the contacts was fear for individual legal reprimands ($n = 10$) rather than a concern for the youth when the conversation had a sexual content.

The assumption of a normally distributed sexual age preference dictates that men (who made up the entire sample in Study IV) should find females and males in their late adolescence up to their late 20's most attractive independent of their own age (Kenrick & Keefe, 1992). Therefore, we reasoned that the findings from Study IV were better explained by this assumption than by an effect of legal deterrence. The curvilinear increase in solicitation attempts from 21.6% towards 10 year olds to 91.1% towards 18 year olds did not contradict the assumption of a normal distribution of age preferences. However, we could not conclude that the trend would have covered also solicitations towards 20 year olds up to late 20's since the maximum portrayed age in Study IV was 18.

4.4. Solicitation of Youth: An Underlying Paraphilia or Driven by the Situation? (*, Study I, III & IV)

In Study I, we compared participants recruited from general websites (GW; e.g., Facebook, Twitter, chat rooms on radio websites), and pedophilia-related websites (PW; two German websites associated with pedophilic sexual interest). We hypothesized that PW participants would more often report having solicited a YC, compared with GW participants. Of the GW participants, 4.7% reported soliciting at least one adolescent compared to 22.7% of the PW participants (χ^2[1391] = 87.73, $p < .001$). Similarly, the proportion reporting having solicited at least one child was lower in the GW group (0.5%) compared to the PW group (9.9%) (χ^2[1391] = 83.12, $p < .001$). Hence, we concluded that our hypothesis was supported by our findings. As consuming child pornography has been mentioned as a reliable indicator of an underlying pedophilic sexual interest (Seto et al., 2006), we then investigated if YC

participants more often reported consuming child pornography compared with those with an AC. We also investigated whether YC participants more often reported consuming adolescent pornography. As a control variable we also explored whether there was a difference in self-reported consumption of adult pornography. The results indicated that both child- and adolescent pornography consumption was reported more often by the YC participants, compared with the AC participants, while no difference was found in the consumption of adult pornography (Table 5). Therefore we concluded that also this hypothesis was supported. Sending and sharing pornography with the contact is presented and discussed in Chapter 4.5, as a part of manipulation techniques used during solicitation.

Table 5

Consumption and Sending Adult, Adolescent and Child Pornography among Participants with an Adult Contact, Compared with Participants with a Youth Contact

	Adult Contact n = yes/N (%)	Youth Contact n = yes/N (%)	χ^2
Reported consumption of:			
Adult pornography	382/502 (76.1)	45/57 (78.9)	0.231
Adolescent pornography	96/521 (18.4)	46/70 (65.7)	75.595***
Child pornography	25/521 (4.8)	23/70 (32.9)	65.105***
Had sent their contact:			
Adult pornography	56/227 (24.7)	8/21 (38.1)	1.81
Adolescent pornography	2/227 (1.3)	5/21 (9.5)	31.138***
Child pornography	1/227 (0.4)	2/21 (9.5)	13.271***

Note. Most of the variables were derived from non-compulsory questions therefore the *n*s vary. ***$p <$ .001.

Previous research suggests that adults who have solicited youth have not targeted youth exclusively, but also adults (Briggs et al., 2011). Additionally, most adults who have solicited youth do not report a pedo- or hebephilic sexual interest (Seto et al., 2012). Therefore, we set out to explore whether YC participants would report being more affected by certain situational factors (compared with AC participants) that have been found to alter sexual interests (i.e., so that stimuli that is found neutral or repellent becomes arousing; Imhoff & Schmidt, 2014). The participants responded to the question how they *most often* felt according to statements (e.g., I was drunk, I was sexually aroused), surrounding the time spent online with the specific contact (i.e., the youngest contact they reported engaging in online sexual interactions with).

The range of the response alternatives for the situational factors were 1 (Not at all), 2 (Somewhat), 3 (Pretty well), and 4 (Very well) for every phase surrounding the interaction (i.e., before the interaction, during and after).

We had expected YC participants to report higher levels of situational factors before the interactions, compared with AC participants. However, there was no difference in level of perceived alcohol intoxication, sadness, boredom or stress before the interaction (nor during or after) between AC and YC participants. However, we found that YC participants reported being more sexually aroused ($M =$ 1.82, $SD = 0.92$) compared with AC participants ($M = 1.64$, $SD = 0.71$) before the online sexual interaction with the contact ($t[715] = 2.01$, $p < .05$). We also found that the YC participants consistently reported feeling more ashamed compared with the AC participants (Figure 5).
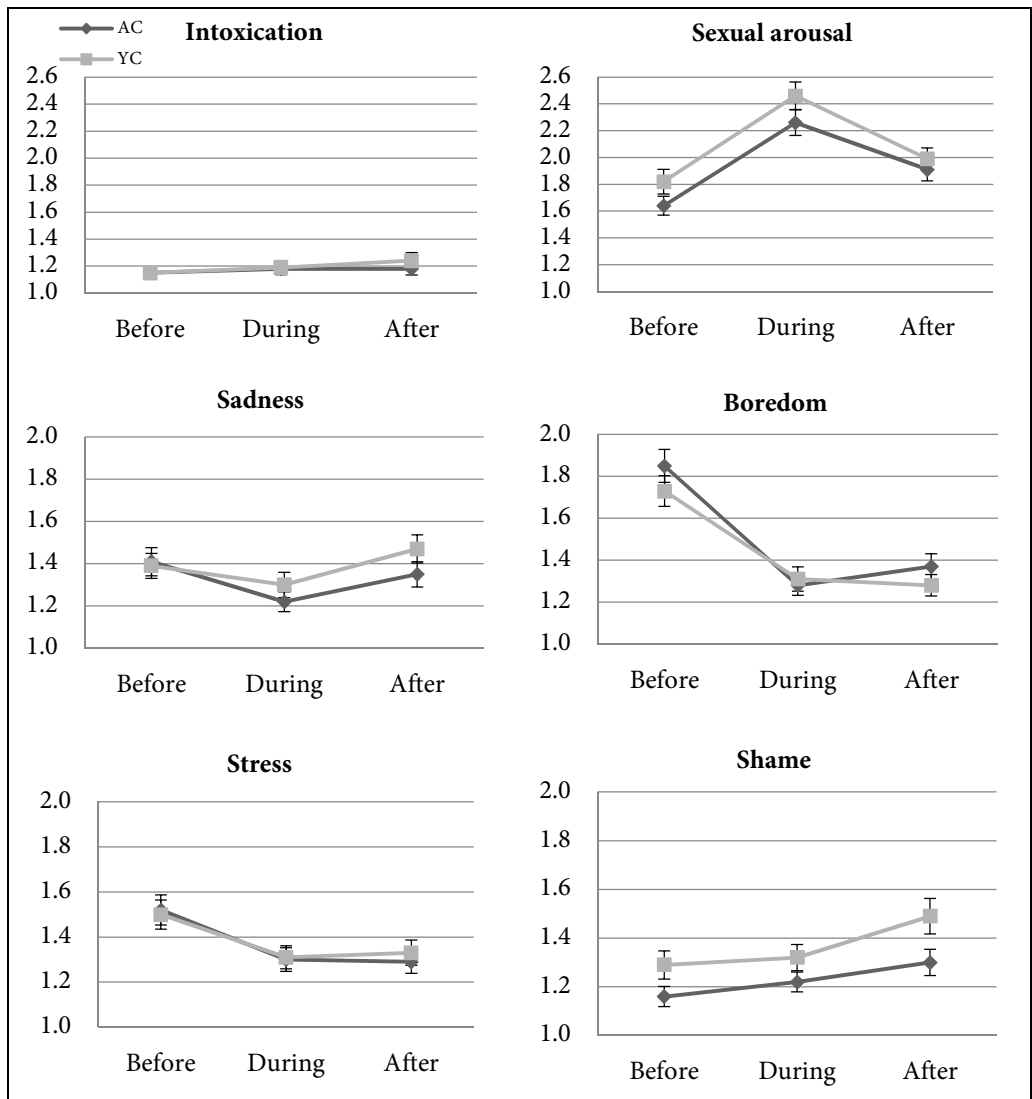
Figure 5. Level of reported situational factors by the participants surrounding the time of the online sexual interactions with the specific contact, separately for participants with an adult contact (AC), and a youth contact (YC). *SD*s in the Figure were divided by 10. Missing values were imputed using the Missing Value Analysis module of SPSS 21.0.

We then continued by analyzing whether the YC participants who did not report consuming either child or adolescent pornography reported higher levels of sexual arousal, compared with those who reported consuming these kinds of pornography. The reason for investigating this was to further analyze if a higher level of sexual arousal in individuals who did not report using child or adolescent pornography would be positively associated with soliciting youth (i.e., according to the assumption that; although they may not have harbored sexual interest towards youth specifically, they may, due to arousal, solicit youth). We investigated this by conducting logistic regression analyses. We found that the YC participants who reported consuming child pornography also reported higher levels of sexual arousal before the interaction ($M = 2.33$, $SD = 1.08$), compared with those who did not report child pornography consumption ($M = 1.59$, $SD = 0.81$) ($t[68] = 3.25$, $p < .005$). This was the case also for YC participants who reported consuming adolescent pornography ($M = 2.01$, $SD = 1.07$) reporting higher levels of sexual arousal before the interaction, compared with YC participants that did not report this ($M = 1.50$, $SD = 0.61$) ($t[68] = 2.16$, $p < .05$). Hence the results from the investigation into a possible situational pathway of arousal overriding a non-preference for youth did not support a situational pathway, while supporting the assumption of a higher frequency of an underlying sexual interest in youth within YC participants. It is possible that some YC participants consumed child or adolescent pornography situationally to increase arousal before the sexual interactions with the youth contact. However, this does not affect our conclusion as consumption of this kind of pornography, whenever the consumption took place (in the survey included as "during the past year") remains a valid indicator of sexual interest in these age groups.

Next, we investigated whether there would be a change in the reported levels of situational factors between before the interaction and after the interaction. Our objective was to investigate whether engaging in solicitation behaviors, such as online sexual interactions, would prove effective in alleviating negative emotional states. The effect of engaging in sexual behaviors to alleviate a negative emotional state has been found to be a pathway to becoming addicted to that sexual behavior (Putnam, 2000). As we did not find any interaction between contact age and alleviatory effects on negative emotions through online sexual interactions, we reran the analyses by collapsing the AC and YC participants into one group to increase the statistical power. Our expectation was that participants, independent of the age of the contact would report a lower level of sadness, boredom and stress after the online interaction when compared to levels reported before the interaction. We found that the level of sadness was lower after the interaction compared with before

(the group mean change was $M = 0.50$, $SD = 0.66$) ($t[716] = 2.00$, $p < .05$). The level of boredom was also lower after, compared to before the interaction ($M = 0.48$, $SD = 0.76$) ($t[716] = 16.82$, $p < .001$). The level of stress followed the same pattern with lower reported levels after compared with before the interaction ($M = 0.22$, $SD = 0.64$) ($t[716] = 9.33$, $p < .001$). Hence, we concluded that engaging in online sexual interactions as a part of the solicitation did alleviate the negative emotional states investigated here. Our findings supported previous research (Putnam, 2000), and strengthened the assumption of a possible pathway of addiction to sexual behaviors for the purpose of alleviatory effects on negative emotions (Howells et al., 2004; Quayle et al., 2006).

Study IV included only one case where a contact expressed a sexual interest indicative of a pedo- or hebephilic sexual interest. The citation below was part of a conversation with an alleged Swedish man of 54-years, and the impersonated was a 12 year old girl (translated from Swedish by the author).

"*I can tell you something that may be slightly forbidden but I can't help it... I get really aroused by girls your age *smiling* I hope you didn't get scared now? Do you have IM, maybe we could continue talking there?*"

Of the 251 chat room conversations, 7 contacts explicitly expressed being sexually aroused (i.e., by saying they were aroused or by describing signs of physical arousal), before being told the age of the impersonated youth (in one case the impersonated was a 12 year old and in the other 16–18-year olds). The contact that conversed with the supposed 12 year old ended the conversation after receiving knowledge of the portrayed age, while the others continued the sexual conversation. The only other immediate situational factor expressed was one contact reporting that he was somewhat intoxicated by alcohol (the impersonated was a 16-year old and the contents of the conversation continued being sexual in nature after the portrayed age was revealed).

4.5. Prevalence of Manipulative Behaviors and Solicitation Outcomes among Adults with an Adult Contact Compared to Those with a Youth Contact

To investigate whether YC participants (compared to AC) would be more deceptive and secretive online, we asked questions about the use of identity deception and whether they had suggested to the youth to keep the interactions a secret from somebody (please see Appendix A for the exact wording of these items). We expected that YC participants would report using identity deception as

well as express a wish for the interactions to remain a secret more often, compared with AC participants.

The results indicated that adults with an AC and those with a YC were equally deceitful and secretive with their online contacts (Figure 6). There were, however differences between AC and YC participants regarding which aspects of their identity they had lied about. YC participants had pretended to be younger than they were more often than those with an AC. On the other hand, those with an AC had used other deception (than those alternatives given in the survey) more often than the ones with an YC. Another difference between the two participant groups was that the YC participants generally used a higher number of different deceptions with their online contact compared with the AC participants ($t[195] = 2.91$, $p < .005$). Using a picture portraying someone else and pretending to be younger than 18 was also more prevalent among YC compared with AC participants.
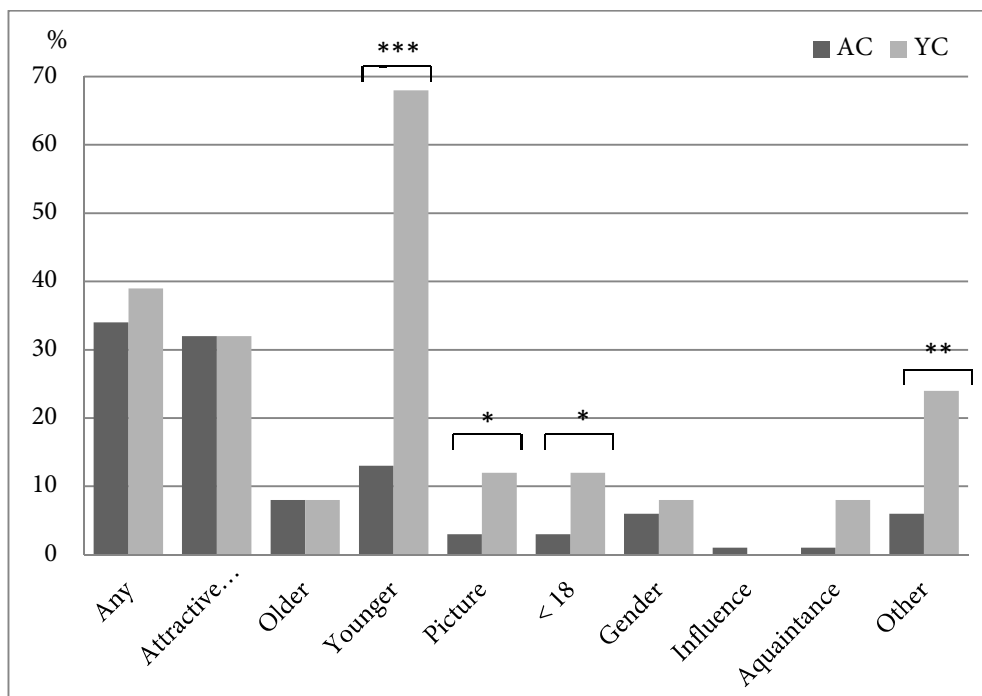
Figure 6. Percentages of identity deceptions used by participants with an adult contact (AC) compared with participants with a youth contact (YC). ***$p < .001$, **$p < .005$, *$p < .05$.

Another kind of manipulative behavior we investigated was the use of persuasion techniques. We expected also these to be more prevalent among YC participants compared with AC participants. This was supported as there was a difference in overall use of persuasion techniques for online sexual purposes (i.e., to receive a sexual picture or engage in cybersex) between AC and YC participants ($\chi^2[1] =$

14.72, $p < .001$). YC participants had tried to persuade their contact more often than those with an AC (i.e., any persuasion), as we had expected (Figure 7). The same was true for offering money or gifts for the purpose of a sexual picture or cybersex ($\chi^2[1] = 17.41$, $p < .001$), as was using something as leverage (e.g., blackmailing the contact to comply to the activity with a previously sent picture portraying the contact) ($\chi^2[1] = 12.81$, $p < .001$). YC Participants had also appealed to the contact's positive feelings towards them (i.e., love) as a technique to receive a picture or to engage in cybersex ($\chi^2[1] = 5.74$, $p < .05$). The rest of the persuasion techniques were all equally seldom used by both groups of participants. Persuasion was, overall, reported by only a small proportion of participants in both groups, and these results are based on very small cell sizes (e.g., offering money or gifts in exchange for a sexual picture or cybersex was used by AC participants; $n = 1$, and YC participants; $n = 3$), especially within the group with a YC. The number of different persuasion techniques used by the two groups of participants did not differ ($t[50] = 1.08$, $p = .284$). See Figure 7 for the percentages of persuasion techniques used for online sexual purposes.
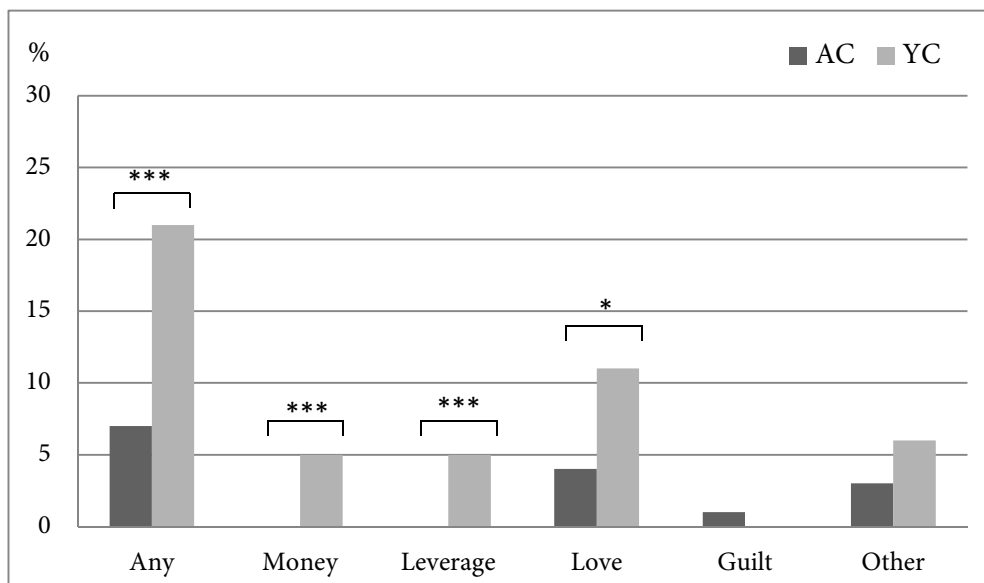
Figure 7. Percentages of persuasion techniques used for online sexual purposes by participants with an adult contact (AC) compared with participants with a youth contact (YC). ***$p < .001$, *$p < .05$.

YC participants had also used persuasion techniques for the purpose to get the contact to comply to an offline meeting more often than those with an AC (any persuasion; ($\chi^2[1] = 7.76$, $p < .05$). Money or gifts was also offered more often by YC

participants ($\chi^2[1] = 4.43$, $p < .05$), as was using something as leverage ($\chi^2[1] = 10.16$, $p < .005$). The proportion of the remaining persuasion techniques did not differ between the participant groups. However, as with the case of persuasion techniques for online sexual purposes, the frequency of use of persuasion for the purpose to meet offline was low in both groups of participants. See Figure 8 for the prevalence of persuasion techniques used for offline purposes.
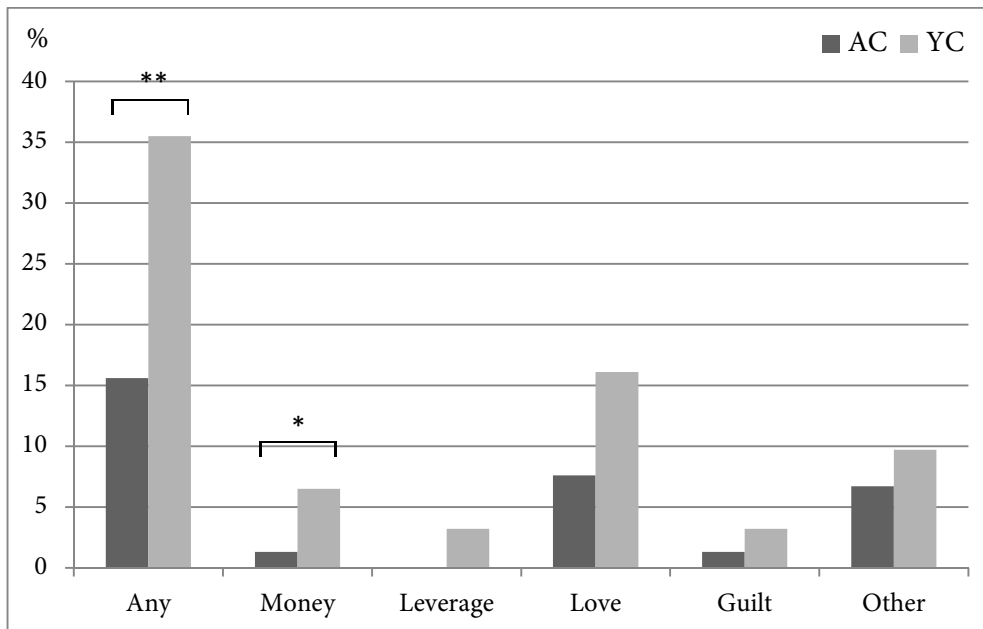
Figure 8. Percentages of persuasion techniques used by participants for the purpose of meeting the contact offline, separately for participants with an adult contact (AC) and those with a youth contact (YC). **$p < .005$, *$p < .05$.

Additionally, based on previous research (e.g., Berson, 2003; Craven et al., 2006), it has been reported that some adults who have solicited youth, have shared or sent the youth pornography depicting adults engaging in sexual activities with youth or pornography depicting only youth, as a method to normalize such sexual activities. We therefore explored whether YC participants had sent or shared pornography with their contact and whether AC participants also engaged in such behaviors with their contact. The results are presented in Table 5 (in Chapter 4.4). Sending pornography (independent of kind) was as common within AC participants ($n = 131$; 24.0%) as YC participants ($n = 20$; 30.8%), although the kind of pornography varied with YC participants more often sending child and adolescent pornography compared with AC participants ($\chi^2[1] = 1.43$, $p < .05$).

We did not expect a difference in the solicitation outcomes between AC and YC participants. This assumption was based on previous research that has found that, for example engaging in cybersex is relatively common among adults (Daneback et al., 2005) and youth (Subrahmanyam et al., 2006). When not taking into account possible associations between the participants' use of deception, suggesting secrecy or persuasion, the outcomes of the solicitation were with one exception as common among AC and YC participants. There was no difference in the prevalence of suggesting secrecy between participants that reported being in a relationship in either group of participants, compared to those who reported being single. Hence, suggesting secrecy seems to be common independent of the age of the contact, and unrelated to the relationship status. The only difference found was that YC participants received a sexual picture portraying the contact more often, compared to AC participants (Table 6).

Table 6

Prevalence of Different Solicitation Outcomes within Participants with an Adult Contact and Participants with a Youth Contact

Solicitation outcome	Adult contact n = yes/N (%)	Youth contact n = yes/N (%)	χ^2
Engaged in cybersex	155/505 (30.7)	20/60 (33.3)	0.175
Sent a sexual picture	137/361 (38.0)	16/18 (47.1)	1.086
Received a sexual picture	185/390 (47.4)	29/43 (67.4)	6.201*
Met offline	237/546 (43.4)	21/62 (33.9)	2.073
Sexual contact offline[a]	139/ 199 (69.8)	13/20 (65.0)	0.201

Note. [a] = Of those participants that replied in affirmative to having met their contact offline. *$p < .05$.

In Study IV, the different means suggested by the contacts to continue the sexual communication could be regarded as constituting different techniques varying in how contact or fantasy driven the contacts were (i.e., a direct contact driven approach; suggesting to meet offline, and a more fantasy driven or indirect approach; suggesting chatting again in the same chat room). What can be seen in Figure 9 was that the popular means of communication (i.e., chatting, using an instant messaging service [IM], and meeting offline were more often suggested to 16 and 18-year olds, compared with 10–14-year olds. We did find that the contacts that attempted to solicit younger youth had a proportionally higher preference for more indirect means of continued communication, compared with those that attempted to solicit older youth. However, there were interactions with the gender of the impersonated youth as well, presented in the original publication (see Study IV,

Table 4). Although, when interpreting the differences between solicitation attempts towards impersonated female and male youth, one needs to bear in mind the differences between the chat rooms (Table 3, Study IV). The chat room directed towards homosexual or bisexual men was explicitly sexual in content (i.e., an evident purpose of the chat room was for individuals to look for sexual contacts online and offline), compared to the two chat rooms that were not directed towards persons with any specific sexual orientation. Hence, the results probably reflect that sexualized chats differ from non-sexualized chats, rather than that male youth are more at risk of being solicited than female youth. The percentages of different means to continue the communication per portrayed age of youth are presented in Figure 9.
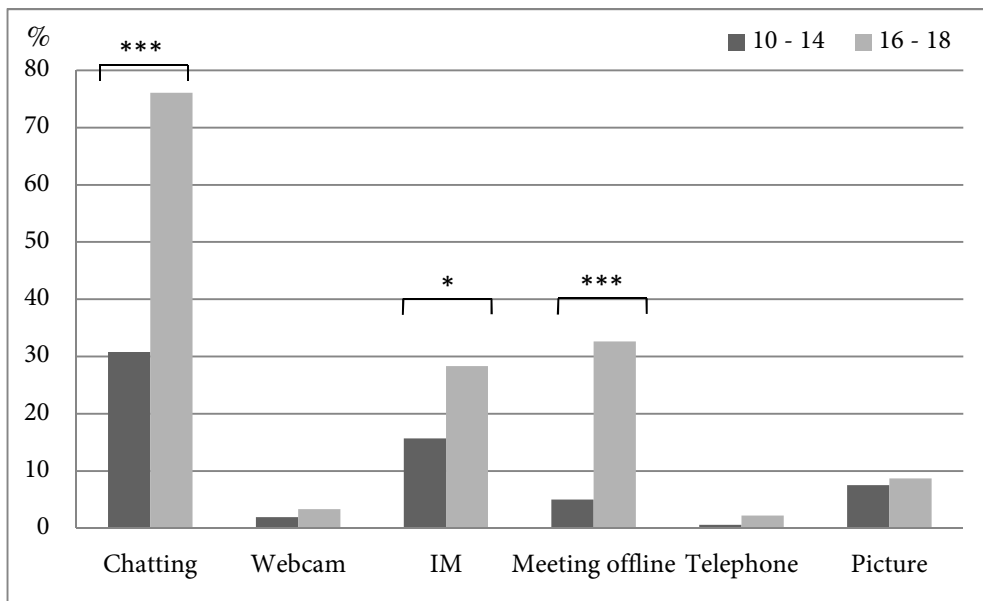
Figure 9. Percentages of sexual suggestions per communication modality separately for impersonated youth under and over the legal age of consent, $^*p < .05$, $^{***}p < .001$

4.6. Contact Age and Associations between Manipulative Behaviors and Solicitation Outcomes

We calculated odds ratios to explore the possible associations between manipulative behaviors and solicitation outcomes. Suggesting keeping the online interactions a secret was positively associated with receiving a sexual picture portraying the contact for those with an AC. Apparently, using identity deception was a popular strategy among adults with an AC who engage in cybersex. Using any deception, pretending to be younger, and pretending to be of another gender was positively associated with

cybersex within the AC group. Using other deception (than those given as options), was positively associated with having met the AC offline, while pretending to be more physically attractive, or of the opposite gender, was negatively associated with an offline meeting with the AC. No robust associations in either direction were found between deception, secrecy and having engaged in offline sexual contact within the AC participants.

No kind of identity deception or suggesting secrecy was associated with having received a sexual picture or not within the YC participants. However, using any deception and suggesting secrecy secret were positively associated with having engaged in cybersex with the YC.

There were no identity deceptions that were associated with having met the YC offline. Likewise, suggesting keeping the interactions a secret had no association with having met offline within YC participants. No kind of identity deception nor suggesting secrecy (online or offline) had an association with having engaged in sexual contact offline with a YC.

We could not explore whether sending or sharing pornography (child, adolescent and adult pornographic material) with the contact was associated with the solicitation outcomes because the cell sizes were too small to warrant further analyses.

Although the proportion of participants who used persuasion techniques was relatively low in both the AC and the YC group, we conducted Odds Ratio analyses to explore whether there would be different associations between having used persuasion and the solicitation outcomes (Table 7). No significant differences were found between the participant groups (i.e., the CI's overlapped or were missing due to small cell sizes). Using any persuasion was positively associated with having received a sexual picture and having engaged in cybersex within AC participants. Other persuasion was also positively associated with having received a sexual picture and having met the contact offline within AC participants. Love (i.e., appealing to the contacts positive feelings of love or affection for the participant) had a negative association with having engaged in cybersex within AC participants, as did using any persuasion for the purpose to meet offline.

Within YC participants no kind of persuasion was associated with having received a sexual picture portraying the contact. Using any persuasion for online sexual purposes was positively associated with engaging in cybersex. Also, "love" was positively associated with having engaged in cybersex with the contact, while the other persuasion techniques were used too infrequent to enable reliable analyses.

Table 7

Associations between Using Persuasion Techniques and Online and Offline Outcomes of the Solicitation, Separately for Participants with an Adult Contact and a Youth Contact

	Adult contact			Youth contact		
	OR	p	95% CI	OR	p	95% CI
			Received a sexual picture			
Any persuasion	**3.01**	**.001**	**[1.49, 6.10]**	6.84	.083	[.78, 60.12]
Money	-	-	[-]	-	-	[-]
Leverage	1.12	.939	[.07, 17.96]	-	-	[-]
Love	2.15	.111	[.84, 5.52]	-	-	[-]
Guilt	2.24	.511	[.02, 24.95]	-	-	[-]
Other persuasion	**16.82**	**.007**	**[2.19, 129.20]**	0.46	.598	[.03, 8.02]
			Engaged in cybersex			
Any persuasion	**4.03**	**.000**	**[2.07, 7.80]**	6.00	.010	[1.53, 23.53]
Money	-	-	[-]	-	-	[-]
Leverage	-	-	[-]	-	-	[-]
Love	**5.72**	**.000**	**[2.15, 15.18]**	6.33	.038	[1.11, 36.28]
Guilt	-	-	[-]	-	-	[-]
Other persuasion	**.11**	**.001**	**[.03, .41]**	1.00	1.00	[.09, 11.74]
			Met offline			
Any persuasion	2.14	.019	[1.14, 4.02]	1.33	.717	[.28, 6.33]
Money	0.80	.849	[.08, 7.81]	2.22	.587	[.13, 39.64]
Leverage	**0.77**	**.002**	[-]	-	-	[-]
Love	2.18	.069	[.94, 5.07]	-	-	[-]
Guilt	-	-	[-]	-	-	[-]
Other persuasion	1.88	.020	[1.00, 3.54]	-	-	[-]

Note. There were no associations between persuasion techniques and having engaged in sexual activities offline within either AC participants or YC participants.

In Table 8, the key findings of the present thesis are presented. The findings are presented according to the fivefold purpose of the present thesis as they appeared in Aims (p. 37). These were in short; 1) Self-reported and observed frequencies of solicitation of youth; 2) the effect of legal age of consent on solicitation frequency; 3) the role of traits and states on solicitation; 4) the prevalence of manipulative behaviors in solicitation based on the age of the target and; 5) the associations between manipulative behaviors and the solicitation outcome based on the age of the target.

Table 8

Summary of Key Findings According to the Fivefold Purpose of the Present Thesis: Exploratory Research Questions (E) and Hypotheses-Based Research Questions (H) As Well As if They Received Support (S), Partial Support (P) or Were Not Supported (N)

1.	I	E		The self-reported solicitation frequency of youth in an online convenience sample of adults was ~ 10%.
	IV			Observations in chat rooms showed that ~ 32% of impersonated 10 to 14-year olds experienced solicitation attempts.
2.	IV	H	S	Older youth were more often solicited compared with younger youth.
	IV	H	P	There was a stronger increased amount in in solicitation attempts towards youth in chat rooms between illegal-legal (14 vs. 16-year-olds) than illegal-illegal (10 vs. 12-year-olds) but not between legal-legal age groups (16 vs. 18-year-olds).
3.	I	H	S	Participants requited through pedophilia-related websites self-reported having solicited youth more often (41.3%) than participants from general websites (10.2%) out of those with any sexual interactions with strangers.
	*	H	S	YC participants reported consumption of child- and adolescent pornography more often (48.8%) than AC participants (11.6%).
	III	H	P	YC participants, compared with AC participants reported higher levels of sexual arousal and shame before the online sexual interaction. No other differences were found on situational factors before the interaction.
	*	E		YC participants who self-reported consumption of child or adolescent pornography were more sexually aroused before their online sexual interaction with their contact compared with YC participants who did not report this consumption.
	III, *	E		There was no interaction between the age of the contact and alleviatory effects of the online sexual interaction on negative emotional states.
	III, *	H	S	There was an alleviatory effect of the online sexual interaction on perceived sadness, boredom, and stress.
4.	II, *	H	N	YC participants and AC participants equally often engaged in manipulative behaviors.
	II, III	H	P	YC participants and AC participants equally often engaged in cybersex, met the contact offline, and engaged in sexual activities offline with their contact. YC participants received a sexual picture from their contact more often than AC participants.
	*	E		YC participants and AC participants sent pornography to their

			contact as often but YC participants had more often sent pornography depicting children and adolescents than AC participants.
5.	II, *	E	Only minor differences in the associations between identity deception and suggesting secrecy on the solicitation outcome was found between YC and AC participants.
	II, *	E	There were differences in the associations between persuasion techniques and the solicitation outcomes depending on the age of the contact.

Note. I = Study I, II = Study II, III = Study III, * = Additional analyses for the purpose of the present thesis. E = Exploratory research question, H = Hypothesis-driven research question. S = Supported by the findings, P = Partially supported, N = Not supported. AC participants = Participants with adult contacts only, YC participants = Participants with a youth contact.

5 Discussion

Based on two data collections and four studies, we addressed questions concerning adults who had solicited youth online with a control group of adults who had solicited adults. The focus of the present thesis was on the adult who had solicited someone, and whether and to what extent there would be associations between solicitation-related behaviors and outcomes as a function of the age of their online contact. Parts of the procedure used in the present group of studies have, to the best of our knowledge, not been utilized previously in this context (self-reports by non-incarcerated adults who had solicited someone, and quantitative quasi-experimental approaches conducted online). Drawing on theoretical assumptions as well as studies from related research fields, we put forth hypotheses- as well as exploratory research questions.

5.1. Who Sexually Solicits Youth Online?

A central factor concerning solicitation of youth is the duration of the communication. There was no difference between AC and YC participants regarding the duration of communication. The most commonly reported duration was "a month or more" within both groups (participants were asked to respond to questions regarding the youngest contact that they kept in touch with for the longest duration). This duration is similar to findings of previous studies (e.g., Wolak et al., 2004). The relatively long duration of contact within the YC participants suggested that there was at least some responsive action from the youth. This also supported previous findings that youth are often active participants in the solicitation as well as in many of the cases of "statutory relationships" offline (Wolak et al., 2008; Hines & Finkelhor, 2007). Hence, the duration is a key factor in the understanding of the solicitation process as it highlights the presence of voluntary actions by many of the youth that have experienced solicitation. This also contributes to the understanding of why few youth report solicitations or attempts thereof, and why this phenomenon is difficult to combat. Of the YC participants, 34% met their contact offline, of which 22% reported that they had met the youth more than once, and additionally, 31% reported that the youth was the one who had suggested to meet offline in the first place (unpublished data). Also this finding was indicative of some voluntary action from the youth (although some participants may have lied about this as a way of e.g., attributing blame). Compared to Briggs et al.'s, (2011) sample where half were categorized as contact driven and the other half fantasy driven, the proportion of the former group in our sample was smaller. However, this difference is likely due to methodological differences as Briggs et al.'s, (2011) sample consisted of convicted offenders and these tend to include a high proportion of cases with offline contact

(e.g., Webster et al., 2012 [NP-R]). This is possibly the case as there is often more robust evidence of a crime such as a statutory offence in cases that include offline contact compared to online only (Shannon, 2013 [NP-R]).

Another central factor is whether the adults had solicited one or multiple age groups as this would be an indication of an inclusive or exclusive target age group. Of those in the survey sample who had solicited youth, more than 80% reported that they had also solicited (or attempted to solicit) adults. This could be seen as an indication that many adults who engage in solicitation of youth have an inclusive approach when it comes to online sexual contacts, supporting Briggs et al.'s (2011) findings. The age of the online contact from the perspective of the one soliciting someone, may not be relevant if the person is fantasy driven and not contact driven as called by Briggs et al. (2011). Two contacts in Study IV expressed an inclusive approach concerning target age, with an example below from a conversation with a Swedish man of 45 years.

"For your information, I like girls of all ages, from yours (14) *to 45. I'm not looking for only small girls."*

Corroborating findings from previous studies (e.g., Briggs et al. 2011; Wolak et al., 2006), men constituted the vast majority of the YC participants, making up approximately 75% of the YC participants in the survey study. However, there were approximately as many women (45%) as men in the group with an AC, which is in line with the findings from Daneback et al.'s (2005) study on adults who had engaged in cybersex.

Although we found that a majority of YC participants had also solicited adults, there were indications of pedophilic or hebephilic sexual interest on a group level, when YC participants were compared with AC participants. This assumption was based on the findings that the YC participants self-reported consumption of both child and adolescent pornography much more often than the AC participants. Important to keep in mind, however, was that a majority of the YC participants were recruited through pedophilia-related websites.

Our findings suggested that those who solicit youth may be more knowledgeable on how to protect their identity online. Although YC participants did not differ from AC participants on the use of basic identity protective measures online, such as limiting the kind of information they shared about themselves, we found that YC participants used more advanced/demanding identity protective measures. The YC participants reported using pre-paid mobile phone cards for the purpose of solicitation, as well as using encrypted chat channels for the same purpose more often than AC participants. This supports

findings reported by Webster et al. (2012 [NP-R]). Although our survey did not include questions on whether the participants had been accused or convicted for solicitation or any other crime, it may be that the non-incarcerated adults who solicit youth are more technologically savvy, compared to those who are incarcerated. This would indicate that the solicitation for many YC participants was premeditated and planned and not a behavior engaged in on pure impulse.

Although the focus of the present thesis was on behavioral and situational factors and not on psychosocial factors, there are indications that issues such as social anxiety are of interest in the understanding of adults' solicitation of youth. Social anxiety, loneliness and self-regulation deficits were reported more often within participants who had solicited youth, compared with those who had only solicited adults (using the survey sample as in Studies I-III in the present thesis; Schulz, Bergen, & Hoyer, manuscript in preparation). Other psychological factors of interest in understanding adults' solicitation of youth are sexual sensation seeking and "hypersexuality" (Krueger et al., 2009). For example, adults who solicited youth, compared to those who solicited adults, more often self-reported that they were unable to stop engaging in online sexual behaviors, although they wanted to (using the same survey sample as in Studies I-III; Bergen & Schulz, manuscript in preparation).

5.2. Self-reported Compared to Observed Frequency of Solicitation of Youth

One of the most interesting findings in the present thesis was the difference in frequencies of self-reported solicitations (Study I), compared to those attempted in chat rooms (Study IV). On closer inspection, there was not a single participant from Sweden (based on the language of the survey and the server access) who self-reported having solicited an unknown child or adolescent online during the last year (Study I). Also, no Finnish participants reported having solicited a child, and few respondents from Finland reported having solicited an adolescent. It could be compelling to interpret these results as an effect of legal deterrence, as both Sweden and Finland – but not Germany, have implemented legislation on solicitation in the national penal codes. Additionally, Sweden and Finland have a higher LAC (15 and 16 years, respectively), than Germany (14). The lower LAC in Germany meant that those in the survey sample with a YC that was between 14 to 17-years old, had not committed an offence according to the national legislation.

A plausible explanation to the contradictory results from the quasi-experimental chat room study and the self-report survey was that the estimates of solicitation frequency vary greatly, depending on the research method used (as has been suggested; Seto, 2013). It may be that there was an effect of legal deterrence so

that it deterred self-reporting solicitation of youth, while not deterring attempting actual solicitations. This assumption was supported by the unpublished data from the Police College of Finland and Shannon's report (2013 [NP-R]) on solicitation cases in Sweden, as many cases have been reported to the police in both countries. Although the participants in the survey study were guaranteed full anonymity, many may have still questioned this. Hence, the perceived anonymity of chat rooms in Study IV may be the explanation to these findings with approximately one third of the contacts attempting to solicit supposed 10–14-year olds in Swedish and Finnish chat rooms. Of the participants in the survey study who reported communicating with unknown people online, 9.8% (n = 137) reported having solicited youth during the last year. Of these, 56.2% (n = 77) were more than five years older than the youth contact. We also found indications that those who solicited children, compared with those who had solicited adolescents may be more compulsive in their solicitation. This was the case as those reporting having solicited children more often reported soliciting or having attempted to solicit more than 20 children during the past year, compared with those with adolescent contacts. The ones with child contacts were also significantly older than the ones with adolescent contacts.

5.3. The Role of Legal Deterrence and Sexual Age Preferences

The second purpose of the present thesis was to investigate whether there would be a positive association between increased solicitation attempts towards youth of older ages compared to those of a younger age. As hypothesized, we found that the age of the youth was indeed positively associated with more solicitation attempts in chat rooms (so that the older the youth, the higher the number of solicitation attempts). We then continued exploring whether we would find an increase in solicitation attempts using the legal age of consent (LAC) as a cut-off. More specifically, we investigated whether an effect of legal deterrence through the LAC would be a more parsimonious explanation of the variation in solicitation attempts than the assumption of sexual age preferences as normally distributed. As we found that the increased solicitation attempts towards older impersonated youth was as plentiful between illegal and legal and legal–legal age groups of impersonated youth (14 compared to 16-year olds, and 16 compared to 18-year olds), we could not conclude that the effect of the increase was legal deterrence alone. However, we did find that the contacts expressed awareness and worry concerning the portrayed age of the impersonated youth (n = 10) when under the LAC. The worry expressed was for individual legal reprimands rather than a concern for the youth when the conversation had a sexual content, and the contacts typically wanted to continue the communication.

The assumption of a normally distributed sexual age preference dictates that men (who made up the entire sample in Study IV) should find females in their late adolescence up to their late 20's most attractive irrespective of their own age (Antfolk et al., 2014; Quinsey & Lalumière, 1995). This assumption is based on evolutionary theory and dictates this, as women of this age span are the most fertile (Kenrick & Keefe, 1992). The curvilinear increase in solicitation attempts from 21.6% towards 10 year olds to 91.1% towards 18 year olds did not contradict the assumption of a normally distributed sexual age preference. However, we were unable to draw definite conclusions regarding this theoretical assumption (i.e., that the solicitation attempts would have followed the assumed trend up to the late 20's and then declined), as the maximum portrayed age in the study was 18.

Although the focus on the findings from Study IV has been on the contacts attempting to solicit the youth, it is noteworthy that 67.9% (n = 108) did not interact in a sexual manner with impersonated 10–14 year olds and some (n = 16; 10.1%) told off the impersonated youth for being too young to visit the chat rooms (Study IV). However, as the contacts communicated with the impersonated youth on one single occasion, a non-sexual conversation may have turned into a sexual one if a second or several consequent encounters would have taken place. For example, the intimacy-seeking group of convicted adults in Webster et al.'s (2012 [NP-R]) study spent a lot of time on non-sexual conversations. O'Connell (2003 [NP-R]) stated that non-sexual conversations are almost always present in the beginning of the communication, as it is a part of the relationship-forming phase.

Also, noteworthy is that the chat rooms attempted to be self-regulatory, demanding an age of at least 16 of their visitors. In one of the three chat rooms the impersonated person (portrayed age of 12) was reported to an administrator by the contact and the IP address from which the researcher gathered data was blocked from the chat room.

5.4. Solicitation of Youth: An Underlying Paraphilia or Driven by the Situation?

From the findings in Study I, we learned that participants recruited from websites that were associated with a pedophilic sexual interest had solicited youth more often compared to the participants recruited from general websites (e.g., Facebook, Twitter and forums not related to any specific sexual interest). This result could be regarded as an indication that visitors of pedophilia-related websites could be relevant for targeted prevention efforts. These websites should include information and treatment also for Internet related problems, such as solicitation and compulsive sexual behaviors online. As mentioned in section 4.4, only one contact in Study IV expressed a pedo- or hebephilic sexual interest during the initial chat

room conversation. As we also found that YC participants reported consumption of both child and adolescent pornography much more often compared to AC participants, there was some evidence of an underlying sexual age preference on a group level within adults who had solicited youth.

Based on previous findings on situational factors (Ariely & Loewenstein, 2006; George & Stoner, 2000) we then explored the possible role of situational factors as self-perceived by the AC and YC participants. We hypothesized that YC participants would report being more affected by these prior to the online sexual interaction with the contact compared to AC participants. We found no difference between AC and YC participants on most of the situational factors that we explored (i.e., alcohol intoxication, and the negative emotional states sadness, boredom and stress). However, the YC participants reported a higher level of sexual arousal before the sexual interaction with the contact, compared with AC participants. As sexual arousal has been found to lower the normally accepted age range of objects found as sexually stimulating (e.g., Imhoff & Schmidt, 2014), we regarded this as a first indication that this may be the case also when it comes to solicitation of youth. When we analyzed if YC participants who did not report consuming child or adolescent pornography reported higher levels of arousal compared to those that did report such consumption (as would be expected if arousal would override otherwise non-preferred age groups), we did not find this to be the case. The YC participants who reported consuming child and adolescent pornography also reported higher levels of sexual arousal before the online interactions with the contact compared to those who did not consume this kind of pornographic material. Hence, we reasoned that an underlying sexual interest in children or adolescents probably laid the motivational base within most YC participants, and that sexual arousal may have disinhibited possible moral restrictions within these participants. However, the findings from Study III indicate that YC participants' also reported feeling ashamed by their behavior, and this even prior to engaging in the online sexual interaction. This would suggest some level of awareness and premeditation in the YC participants.

Seven contacts reported that they were sexually aroused prior to knowledge of the portrayed age in Study IV. However, judging from the explicitly sexual content of the conversations coded as "sexual" it was clear that many, if not most, of the contacts who engaged the impersonated youth in a sexual conversation were sexually aroused. Many of the conversations entailed descriptions of sexual activities, as well as physical/bodily descriptions of a sexual nature, and therefore it is likely that the seven mentioned contacts were not the only ones who were aroused in the sample. The only other situational factor that was mentioned was one contact who reported that he was somewhat alcohol intoxicated during the

conversation. No contact mentioned any other of the situational factors explored in Study III (i.e., sadness, boredom, stress, or shame).

In conclusion, YC participants reported more consumption of child and adolescent pornography compared with AC participants. YC participants also reported being more sexually aroused before the sexual interaction with the youth, and YC participants that reported consumption of child and adolescent pornography also reported being more aroused before the interaction, compared with YC participants who did not report consumption of child or adolescent pornography. Hence, utilizing Mischel and Shoda's (1995) model of CAPS, as well as Seto's (2013) motivation-facilitation model, there is some indication that the underlying motivator of many adults who solicit youth might be a lower than normal sexual age preference, and the situational factor of sexual arousal may disinhibit moral restrictions and make the individual more likely to act out their sexual interest online.

When we investigated whether there would be an alleviatory effect of engaging in online sexual interactions on negative emotional states we found this to be the case. There was no interaction between the age of the contact when we compared levels of negative emotions (i.e., sadness, boredom and stress) before the interaction and after the interaction. We found that the participants reported significantly lower levels of these emotions after the interaction, supporting previous assumptions and findings (Howells et al., 2004; Putnam, 2000; Quayle et al., 2006). We do not know of the participants' self-reported motivation to engage in online sexual interaction, however, we argue that these results give an indication that they did use online sexual interactions as a means of emotional avoidance or alleviation.

5.5. Prevalence of Manipulative Behaviors and Solicitation Outcomes among Adults with an Adult Contact Compared to Those with a Youth Contact

We hypothesized that YC participants would engage in more manipulative behaviors online, compared to AC participants. This assumption was based on the ideas that 1) YC participants would be motivated to hide their identity to avoid detection (Webster et al., 2012 [NP-R]); 2) adults who have solicited youth have been found to suggest keeping the communication a secret as both a method of isolating the youth, and as a risk management measure (Olson, Daggs, Ellevold, & Rogers, 2007); and 3) adults who have solicited youth have appealed to the reward-seeking behaviors of youth and have used targeted persuasion techniques, depending on what a specific youth is looking for online (Webster et al., 2012 [NP-R]).

However, our hypothesis was not entirely supported by our findings. We found that YC participants used a higher number of different identity deceptions, although responses to using any deception did not differ significantly between AC (33.5%) and YC participants (38.5%). Although, there were differences between the YC and AC groups in terms of what the participants lied about to their contacts. According to previous findings, 25–29% of adults convicted of having solicited youth had pretended to be younger than they were (Malesky, 2007; Wolak et al., 2004). Of the YC participants, 68% had pretended to be younger than they were, and 12% had pretended to be younger than 18. Additionally, 12% of the YC participants had used a picture portraying someone else. These three kinds of deception were considerably more common among YC participants than AC participants, and the question arises whether these deceptive behaviors may be more common among non-incarcerated adults who have solicited youth, compared to incarcerated ones. Masking their identity online may be a risk management measure that might play a role in the detection of these adults.

Pretending to be younger may also be motivated by youth being more comfortable in disclosing sexual information and engage in sexual interactions with someone close in age, as suggested in previous studies (e.g., Quayle et al., 2012). The only deception that was more common among AC than YC participants was the unspecified "other deception". This may be an indication that there were other deceptions that were common in the AC group, in addition to pretending to be younger and so forth. Additionally, the motivation to use identity deception probably differed between YC and AC participants. The YC participants may have been highly motivated to avoid detection for fear of social and legal reprimands. The AC participants on the other hand, may more often be motivated by giving an impression of a higher mate value than their actual one in an attempt to increase their chances of finding a romantic or sexual partner (Gallup & Frederick, 2010). This assumption is supported by Whitty (2002), who found that embellishing one's occupation, income and education were common deceptions among adults interacting with other adults online (which are highly valued traits, especially in men; Trivers, 1972).

Suggesting keeping the communication a secret from someone was a common behavior in both groups of participants, with AC participants suggesting online secrecy in 27% of the cases, and YC participants in 45% (the difference was not significant). Of the AC participants who met their contact offline, 41% suggested keeping the meeting(s) a secret, as did 45% of the YC participants. There was no difference in the prevalence of suggesting secrecy between participants that reported being in a relationship in either group of participants, compared to those who reported being single. Hence, this behavior seems to be common independent

of the age of the contact, and unrelated to the relationship status. We concluded that this finding was not in line with our hypothesis, that YC participants, compared with AC participants would more often suggest secrecy as a method of isolation and risk management.

Previous research (Webster et al., 2012 [NP-R]; Wolak et al., 2008) has suggested that adults who engage in solicitation of youth may appeal to youths' reward-seeking by offering money, gifts or love in exchange for sexual contact (Marcum, 2007; Wolak et al., 2004). Therefore, we expected YC participants to use persuasion more frequently than AC participants. This was also the case as YC participants had used any persuasion techniques both for online and offline purposes (e.g., engaging in cybersex, or meeting the contact offline) more often than AC participants. However, the number of different persuasion techniques used did not differ between participant groups, and the prevalence of using persuasion was very low overall in both groups. Nevertheless, YC participants had tried to persuade their contacts with money or gifts (4.6%), by appealing to the contact's feelings of love or affection (10.8%), and used leverage (4.6%) for online sexual purposes more often than AC participants (money or gifts = 0.2%; appealing to feelings of love or affection = 0.4%; used leverage = 4.1%). Although, appealing to feelings of love, or offering monetary support may play an equally big role in the AC group in the long run, using these as persuasions early on in the contact is likely not a successful solicitation strategy with most adult targets. In previous research on adults convicted for solicitation of youth, the prevalence of persuasion techniques used was much higher compared to our findings. Offering money or gifts in exchange for sexual access to youth was present in 17–47% of the police reports (Shannon, 2008; Wolak et al., 2004). Additionally, blackmail was found in 16% of the cases in Shannon's study (2008), which is similar to our item "use of leverage". Use of leverage was infrequently reported by participants in the present study. However, these differences may be explained by use of different study methodologies. In conclusion, identity deception was used often by both groups, as was suggesting secrecy, while persuasion techniques were not very common in either group of participants but slightly more prevalent within YC participants (compared with AC participants).

Additionally, YC participants reported sending pornography depicting both children and adolescents to their online contact more often compared with the AC participants (the participant groups reported sending adult pornography as often). This kind of behavior has been mentioned as a method to normalize sexual behavior, and may serve the purpose of preparing the youth for sexual activities with the adult (Berson, 2003). When we analyzed if YC participants had sent pornography (independent of kind) more often than AC participants, we found

this behavior to be equally common among the two groups. However, we could not draw any inferences on the motivation behind this behavior, as there were no data available to investigate this. Sending pornography, however, has previously only been mentioned as a feature of adult-youth solicitations (Berson, 2003), but according to our findings, it seems to be a behavior present in some adult-adult solicitations as well. Due to the very small cell sizes we did not conduct further analyses to see whether this behavior was associated with the different solicitation outcomes.

We did not expect a difference between YC an AC participants in the different solicitation outcomes. This was based on previous research which indicated that youth and adults engage as much in risky online sexual behaviors (e.g., sending a sexual picture of themselves; Baumgartner et al., 2010). The findings showed that the frequency of the solicitation outcomes was similar in both groups of participants. Both groups reported similar frequencies of engaging in cybersex, meeting offline, and engaging in sexual contact offline with their contacts. However, YC participants had more often received a sexual picture portraying the contact, compared to AC participants. One might presume that sending sexual pictures would be a more prevalent behavior in youth, as "sexting" among youth and its connection to child pornography has received widespread media and research attention (Mitchell et al., 2014; Drouin & Landgraff, 2012). However, a recent review suggested otherwise (Klettke, Hallford, & Mellor, 2014). The results of this review suggested that both sending and receiving sexual pictures was more prevalent among adults compared to adolescents (Klettke et al., 2014). Little is known about the effects on youth (or adults) of sending a sexual picture to unknown or online-only known persons, and the effects probably depend on several factors, for example, through which technology it is sent, and to whom. In youth victim studies, sending a sexual picture was rarely reported with 1% of youth self-reporting this behavior (e.g., Mitchell et al., 2007). In contrast, 67% of the YC participants in our study reported receiving a sexual picture from their contact.

The results from the chat room study indicated that most of the contacts who initiated a sexual conversation with impersonated youth under the LAC suggested continuing the conversation in the chat room on a later occasion or using IM, while few suggested offline meetings, compared to those who conversed with impersonated youth over the LAC. There are a few possible interpretations of these results. Firstly, it is likely that the contacts who had sexual conversations with youth under the LAC would never have suggested to meet the youth in person, and belonged to the group described by Briggs et al. (2011) as "fantasy driven" and not "contact driven". Secondly, meeting offline may also have been suggested as a part of the cybersex discourse in enhancing the fantasy without any real intentions to

meet, with fewer reporting this to youth under the LAC because of legal deterrence. Thirdly, the conversations between the impersonated youth and the contacts were restricted to one single interaction. In previous studies, the adults who have met a youth in person have usually spent months on preparatory solicitation before the offline meeting was even suggested (O'Connell, 2003 [NP-R]; Webster et al., 2012 [NP-R]). Fourthly, it may be a true effect of a normally distributed sexual age preference, which fits the results as most attempted solicitations were directed towards supposed youth in their late adolescence (here; 16 and 18 year olds) as the theory dictates (Kenrick & Keefe, 1992).

5.6. Contact Age and Associations between Manipulative Behaviors and Solicitation Outcomes

Overall, many of the manipulative behaviors had a positive association with the solicitation outcome, especially cybersex, in both groups of participants. Within the group of AC participants, identity play seemed to be common in those who engaged in cybersex, supporting previous findings (e.g., Attwood, 2009). Using any deception, and suggesting secrecy was associated with having engaged in cybersex also among YC participants. Using deception was overall not associated with an offline meeting within either group of participants, with one exception: AC participants reporting using some "other" deception had met their contact more often compared to those who had not used some "other" deception. No kind of deception or suggesting secrecy was associated with having engaged in sexual contact offline in either group of participants. Hence, although YC participants had used a higher number of different deceptions overall, meeting offline and engaging in sexual contact offline had not been affected by this.

Using persuasion techniques was uncommon in both groups. However, AC participants that reported using at least one kind of persuasion technique had also received a sexual picture and engaged in cybersex more often compared to those who had not used persuasion techniques. Using some "other" persuasion was also positively associated with having met the contact offline within AC participants. Using any persuasion was positively associated with having engaged in cybersex, as was appealing to the contacts feelings of love or affection for the participant in AC participants. Due to small cell sizes in the YC participant group, most of the analyses could not be conducted to elucidate associations between persuasion and solicitation outcomes. Using any persuasion as well as appealing to the contacts feelings of love or attachment was positively associated with having engaged the contact in cybersex within YC participants, supporting previous research (Marcum, 2007; Wolak et al., 2004).

5.7. Legislation and Law Enforcement Investigations Concerning Online Sexual Solicitation from the Perspective of our Findings

Finnish and Swedish legislation concerning solicitation demands that the adult's sexual intention is confirmed, and that an offline meeting has taken place, or that there is evidence of an attempt to arrange a meeting. Of the YC participants in the survey study, 34% had met their contact in person and of these, 65% reported sexual contact offline. In the chat rooms in Study IV, 5% of the contacts who attempted to solicit 10 to 14 year olds suggested a face-to-face meeting already during the initial encounter. Although national legislation on solicitation has been applicable to extremely few cases so far (e.g., Shannon, 2013 [NP-R]), it is difficult to suggest changes to the legislation without increasing the errors of false positives. As almost all of the adults convicted for a crime associated with the solicitation in Sweden were sentenced according to other sections of the penal code (with more severe punishments), a change of the solicitation legislation may not be warranted. Researchers (e.g., Fulda, 2002) and law enforcement agents (e.g., McLaughlin, 2004), may have different opinions on the subject (also depending on country of residence). Proactive investigations such as online sting operations, build on the premise that the perpetrator had a predisposition to commit the crime, independent of the involvement of the law enforcement agent (Peters, Lampinen, & Malesky, 2013). Opposing the idea of a predisposition demand, Peters et al. (2013) found that even in cases where the law enforcement agent (posing as a youth) had solicited the defendant repeatedly (without any initiation from the defendant), the guilty verdict was still significantly higher than zero using mock jury trials. It could be argued that defendants (depending on the presence of other evidence) were lured into action and would possibly never have acted the way they did were it not for the law enforcement agents, which sounds quite, if not exactly, like preventive detention.

By having researchers impersonate youth in chat rooms, the procedure in Study IV was similar to that used in online sting operations undertaken by law enforcement agents in the USA (Peters et al., 2013). However, in order to avoid portraying youth as initiators of sexual conversations with adults, the researchers always refrained from initiating sexual conversations and never used any sexual language during the conversations. For ethical and legal reasons (as proactive investigations were, and are, illegal in Sweden and Finland), we were careful not to portray the impersonated youth in a sexualized way. Portraying youths as sexual could also possibly create or awaken a sexual interest towards youth in some adults who may not have had such an interest before being solicited by an impersonated youth (Fulda, 2002), which is arguably the last wish of both law enforcement agents and researchers.

5.8. Limitations

Concerns have been raised about online non-probability sampling such as the procedure used in Studies I-III (e.g., Evans & Mathur, 2005; Meyer & Wilson, 2009). However, our intention was not to investigate the overall prevalence of solicitation in the population (in Finland, Germany or Sweden) but to target adults who interact with strangers online. Thus, we found this method of sampling appropriate. This sampling procedure also suited our goal of investigating the specific subsample of adults who were registered visitors of pedophilia-related websites, which would have been difficult with personal interviews. However, the participants recruited through pedophilia-related websites were all German-speaking. The reason for this was that we were unable to locate either Swedish or Finnish websites oriented towards persons with such sexual interests.

Krohn et al. (2010) discussed the limitations and advantages of self-reports on deviant and criminalized behaviors. The authors pointed out several advantages especially with self-administered computerized surveys, such as the possibility of privacy and anonymity as opposed to in-person interviews. As the questions in the survey touched upon highly sensitive and criminalized activities, we were keen to eliminate interviewer interaction which an online self-administered survey arguably does, compared to telephone surveys or in person administered surveys (Evans & Mathur, 2005; Krohn et al., 2010). Regarding the non-probability aspect of this procedure, it cannot be circumvented by utilizing data collection procedures such as the one used, and should be regarded as a limitation to the methodology of the present thesis. We could not account for the sampling frame (e.g., how many came across a link to the survey and chose to access it or not). It is possible that some individuals who read the information about the topic of the survey (i.e., that it concerned online behaviors, online contacts as well as sexual preferences and behaviors) opted not to participate specifically because of the study topic, possibly resulting in biased dropouts. However, we concluded that the benefits of the online non-probability sampling procedure outweighed the costs. The benefits, such as the ones mentioned by Mustanski (2001) were the possibility to sample from a wide variety of online forums, chat rooms and online social networks as well as e-mail distributions of the survey. Through this procedure we were able to gather a relatively big sample of the adult target population who engaged strangers in online interactions. Another benefit was cost- and time effectiveness (Shaughnessy, Zechmeister, & Zechmeister, 2006). Compared to the relatively slow procedure of traditional mail surveys, thousands of responses in an international sample could be gathered during the six-month data collection.

Studies I-III relied on a method of retrospective self-reports from AC and YC participants. It may well be that this crude separation into groups according to the age of the youngest contact accounted for some of the similarities between the two groups and reduced true differences. It may well be, for example, that a more specified separation of participants would have yielded more pronounced differences. Participants who had exclusively engaged in solicitation of children and/or adolescents may be very different both on individual and behavioral aspects compared to those who had also solicited adults. The cell sizes for these subgroups were, however, too small to be analyzed separately. This is also the case with female participants, whom would have been of high interest because women who solicit youth have not been extensively studied previously. The largest reason for the small cell sizes (e.g., frequencies of behaviors engaged in such as offering money or gifts for an online sexual purpose) was that these behaviors occurred relatively rarely in online communication patterns reported.

To reduce possible effects of recollection bias, participants were asked to report only interactions online that had taken place during the last year. As Robinson and Clore (2002) discussed, both systematic as well as random biases are probable in the case of retrospective self-reports of emotions. This is also true for sexual arousal and alcohol intoxication as it has been found that it is difficult to appreciate physical states retrospectively (Robinson & Clore 2002), suggesting that Study III may be especially vulnerable to recollection bias. However, as also suggested by Robinson and Clore (2002), the more situation-specific the question (such as the ones in Study III), the more it forces the individual to tap into his or her situation-specific beliefs (Robinson & Clore, 2002). It is also possible that individuals have a tendency to report different levels of immediate situational factors when asked to report these for different times (i.e., before the sexual interaction, during, and after it). However, we argue that this was the best method possible to begin studying the possible effect of situational factors on the proclivity to solicit YC compared with soliciting AC online. Utilizing experimental methods or a longitudinal design would probably have affected the experienced emotions, states as well as behaviors within the participants to an even higher extent.

As there is little available basic research on deceptive behaviors and persuasion techniques used during adult-adult solicitations, our variables did probably not cover all relevant kinds of behaviors associated with solicitation situations online. This was evident from our data, as for both deceptive behaviors and persuasive behaviors, we found that the option of other than the listed behaviors was popular among the AC group. The open submission responses to persuasion techniques used for online sexual purposes and for the purpose of an offline meeting indicated, however, that AC and YC participants were fairly similar in their use of

other persuasion as most were reported by both groups of participants (e.g., appealing to the contacts curiosity, and describing their own arousal).

Although not a limitation per se, there are some ethical aspects of Study IV that warrant further elaboration. We did not obtain informed consent from the contacts (i.e., the chat room visitors who served as study subjects), as we concluded that the behaviors of the contacts would have changed considerably had they received knowledge of the study in advance, thereby defeating the purpose of the study. Most of them were never informed that they had in fact participated in a scientific study. As we collected data continuously during three months in the chat rooms, we considered it to be too big of a risk to post continuous messages in the general discussion for de-briefing purposes without again, changing the participants' behaviors. We did, however, post such a notification in the chat rooms after the data collection phase was over, but we had no means to control how many, if any, of the contacts included in the study were reached by this announcement, or how many acknowledged it. After lengthy discussions in local ethical review seminars, we concluded that the benefits of the study outweighed the costs, because absolute anonymity was preserved throughout the study.

One of the limitations of Study IV is something that has been mentioned throughout the present thesis, namely, that it is possible that the researchers impersonating youth engaged in conversations with the same person more than once (i.e., if a contact used several different online identities). Additionally, in some cases the contacts described their sexual organs with anatomical measurements that are extremely unlikely when compared to international statistics, suggesting that the researchers were subjected to at least some level of deception.

A second possible limitation was how convincingly the researchers were able to impersonate youth. Although we studied the conduct and language of youth in chat rooms directed towards youth before the data collection, and closely followed an agreed-upon script, we could not exclude the possibility that the contacts realized that the impersonated youth were, in fact, adults. In one case, the contact's disbelief was voiced as "*go home and take your medicine, grandpa*" (translated from Finnish by the author), as a response to receiving knowledge of the portrayed age (in this case 12 years). However, this case was the only one in which such disbelief was explicitly expressed. Also, concerning the believability of the researchers, it is possible that technology savvy contacts looked up, and found the IP addresses of the researchers. In a majority of the discussions, computers belonging to Åbo Akademi University were used, and in a minority, the researchers' private computers. Especially the cases of the IP address belonging to the university; the portrayed identity of 10 to 16-year-olds would probably have been questioned by

the contact. This could be a possible limitation as we had no means to investigate if or to what extent this occurred.

5.9. Summary and Conclusions

The present thesis investigated adults who had solicited youth (YC participants) with a comparison to adults who had solicited only adults (AC participants). A summary of the findings and conclusions are briefly outlined below according to the aims presented in section 2.

1. Self-reported Compared to Observed Frequency of Adults' Solicitation of Youth (Study I & IV)

The self-reported frequency of having solicited youth in an online non-probability sample was approximately 10%. This figure however, included a subsample of registered members of websites related to pedophilic sexual interest and should not be regarded as a prevalence estimate. When quasi-experimentally studied, approximately 32% of chat room visitors (contacts) attempted to solicit impersonated 10–14 year olds. Hence, there is a possibility that legal deterrence decreased the amount of self-reported solicitations, while not affecting actual solicitation of youth.

2. The Role of Legal Deterrence and Sexual Age Preferences (Study IV)

As hypothesized, the increased age of the impersonated youth was positively associated with more frequent solicitation attempts by the contacts, and the increase followed a curvilinear trend. Our second hypothesis within this research purpose was, however, not supported. We had stipulated that the solicitation attempts towards impersonated youth would be markedly more numerous towards youth over the legal age of consent (LAC) compared to under. This was also the case as the increase in solicitation attempts towards 16 compared to 14 year olds was significant, but so was the increase from 16 to 18 year olds, which was not in line with our hypothesis about the effect of legal deterrence through the LAC.

3. Solicitation of Youth: An Underlying Paraphilia or Driven by the Situation? (Study I, III & *)

We found that registered members of pedophilia-related websites more often reported having solicited youth, compared with the sample gathered through general websites. Hence, the subsample of participants from the pedophilia-related websites may be an important target population for directed prevention efforts.

Our hypothesis that YC participants would also more often report consumption of child- and adolescent pornography, compared with AC participants was supported. This would imply at least some prior sexual interest in youth within the YC participants. Our second hypothesis within this research purpose was not entirely supported. We had expected to find that YC participants would report higher levels of all situational factors investigated (alcohol intoxication, sexual arousal, sadness, boredom, stress and shame) before the online sexual interactions, compared with AC participants. We found that YC participants reported higher levels of sexual arousal and shame before the sexual interaction, compared with AC participants. These were the only situational factors in which the two groups differed. Hence, sexual arousal may increase the likelihood of soliciting youth, yet shame was a simultaneous feeling reported before the interaction, indicating some kind of premeditation in solicitation of youth. In favor of the assumption that an underlying paraphilia may drive some adults to solicit youth, we found that the YC participants who reported consumption of child- and adolescent pornography reported being more sexually aroused before the interaction, compared to the YC participants who did not report consumption of these kinds of pornography. Hence, sexual arousal may disinhibit adults with some level of sexual interest in youth to act out the interest online.

We found no interaction with the age of the contact and the change in negative emotional states. However, when all participants were analyzed as one group, we found clear indications that the online sexual interaction had an alleviatory effect on reported sadness, boredom and stress.

4. Prevalence of Manipulative Behaviors and Solicitation Outcomes among Adults with an Adult Contact Compared to Those with a Youth Contact

We had expected that YC participants would have been more deceitful about their identity with their contact, more secretive, and use more persuasion techniques, compared with AC participants. However, we found that the two groups equally often deceived their contact overall about their identity, as well as suggested keeping the communication a secret from someone as often. YC participants, however, used a higher number of different deceptions, meaning that they overall changed more aspects of their identity, compared with AC participants. We also found that YC participants tried to persuade their contact to engage in sexual behaviors online, as well as for the purpose of an offline meeting, more often than AC participants. This may be an indication that adults who solicit youth were trying to allure to the reward-seeking side of the youth to gain sexual access. Hence, this hypothesis was only in part supported by our findings. With an exploratory approach, we found that sending and sharing pornography to an

online contact was as prevalent within AC and YC participants, although the reason for doing this could arguably be quite different, depending on the age of the contact.

We had also assumed that AC participants would have received a sexual picture, engaged in cybersex, met offline and engaged in sexual contact offline as often as YC participants. The solicitation outcomes were similar in the two groups, except for a sexual picture, which was received more often by YC participants.

More indirect means (e.g., chatting) for future sexual communication was suggested by contacts in the chat rooms with impersonated youth between 10 to 14 compared with more direct means (e.g., meeting offline). This could be regarded as cautiousness and risk management in adults who wanted to continue a sexual conversation with someone under the LAC.

5. Contact Age and Associations between Manipulative Behaviors and Solicitation Outcomes

The last purpose of the present thesis was to explore whether there would be associations between the manipulative behaviors used and the solicitation outcomes. We also wanted to explore whether these associations would be different depending on the age of the contact. We found a positive association between deception, secrecy and having engaged in cybersex within the YC group. Additionally, appealing to the youths feelings of love for the participant increased the odds of having engaged in cybersex. There were, however, no associations between manipulative behaviors and having met the contact offline or engaged in sexual contact offline within YC participants.

5.10. Future Research and Preventive Efforts

There are many areas of solicitation that are not yet fully understood. One which has not to our knowledge been investigated extensively is what kind of behaviors (e.g., engaging in a sexual interaction through a webcam) during the solicitation that has negative consequences for the youth, and why. Although it has been reported that youth who have been victims of "online sexual exploitation" have reported PTSD more often than youth who have had other Internet related problems (Wells & Mitchell, 2007), it is unclear what kind of experiences associated with the exploitation have caused this. For example, it may be that the potential long life of an uploaded revealing picture portraying the youth could be much more detrimental compared to a brief sexual conversation in a chat room. The effects are to date not completely understood and researchers have mentioned this as an important area to investigate further (Klettke et al., 2014). Being able to

pin-point the exact behaviors and other factors that have negative effects for youth would aid the development of more exact preventive information, and would also be useful in terms of development of supporting interventions for victims.

We would also argue that replicating the method of Studies I-III would be of value, preferably in additional languages to enable the collection of large samples that vary in geographic location. Important additions to the survey would be to check for current country of residence, possible criminal history, antisocial tendencies, and psychosocial problems. A larger sample would also enable analyzing the possible effect of recruitment channel. Although we created unique links for different kinds of recruitment channel (e.g., university e-mail lists, online social networks, chat forums etc.), the cell sizes were too small to enable analyses specific to the different recruitment channels other than between pedophilia-related websites and general websites.

Another subject that should be further examined is which kind of preventive efforts produce the most effective results concerning adults' solicitation of youth. Jones, Mitchell, & Walsh (2013 [NP-R]) at the CCRC are the first, to our knowledge, to produce empirically based recommendations concerning prevention of online risks and harm for youth (e.g., sexting and solicitation). Jones, Mitchell, and Walsh (2013 [NP-R]) conducted a systematic review of prevention programs concerning, for example, drug use and child abuse from which they created a checklist of the components in the prevention programs that produced the most positive results (e.g., role-play and having multiple learning sessions). The researchers continued by analyzing the four most frequently used Internet safety prevention programs for youth in the USA based on their findings. Their analyses yielded results that indicated there is room for improvement of the Internet prevention programs. One of their key findings was that the programs need to employ different educational strategies depending on which specific online risk is to be prevented. The checklist that was created (Jones, Mitchell, & Walsh, 2013 [NP-R]) includes a section specific for solicitation that can be used by school professionals who evaluate existing programs or for researchers who wish to develop a new prevention program. Other researchers as well have questioned the effectiveness of information-only prevention programs directed towards youth about risky behaviors, such as marijuana and alcohol use (Lemstra et al., 2010). In Lemstra et al.'s (2010) review, the prevention programs that had a comprehensive approach, training cognitive and social skills additionally to giving information about the risks had a positive effect, while the effectiveness of information-only prevention, could not be proven (Lemstra et al., 2010). This finding is in line with the above mentioned investigation by Jones, Mitchell and Walsh (2013 [NP-R]) concerning online safety prevention programs. The comprehensive approach was

also supported in a review of prevention programs on child sexual abuse (Topping & Barron, 2009). If the assumption that youth are generally as proficient as adults at risk-appraisal is correct, yet still engage in more risky behaviors because of a higher sensitivity to reward (compared to adults), alternative strategies may need to be developed to ensure successful prevention. Greene et al. (2000) stressed the importance of including developmental aspects in prevention programs concerning youths' risk-taking. Greene et al. (2000), and Topping and Barron (2009) pointed out that there are examples of prevention programs that have in fact had a negative effect, in part because they had not taken developmental factors into account. Information about online risks to children and younger youth which takes the youths' level of development into account is important, as well as continuous information on solicitation distributed to teachers, health care professionals who work with youth, and to parents. Parental involvement in the youths online life has been found to be a key protective factor (Whittle, Hamilton-Giachritsis, Beech, & Collings, 2013b) However, the information distributed to parents needs to include ways of handling the issue with their youth, as it has been shown that youth who risk suffering from reprimands themselves (such as limited Internet use) are considerably less likely to report having been solicited to their parents (Priebe et al., 2013).

For the purpose to increase the validity in research on the effects of situational factors, a possible method could be an online immediate self-report with targeted sampling of online populations. This could be conducted through an app or a pop-up webpage, asking participants how affected they are at that instance by situational factors, and questions about their immediate behaviors and possible interactions online. In the context of situational factors, it could also be of value to develop a self-screening instrument that would help prevent individuals with a self-identified pedophilic or hebephilic sexual interest from acting out their interest online, for example, due to a state of sexual arousal.

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Appendix A

Behavioral items used in Studies I-III and additional analyses for the present thesis

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Any online interactions with an unknown person

Did you have contact with anyone online whom you did not know offline beforehand (e.g., on social networks or in chat rooms) during the past YEAR? *This question refers only to personal or private contacts. Please do not consider contacts who are only work or study-related.*

> With whom did you engage in online conversations that you did not know offline beforehand?
>
> > Female person: 13 or younger, 14-17-year old, 18 or older
> > Male person: 13 or younger, 14-17-year old, 18 or older

Online sexual solicitation

Did you have a conversation about something sexual with the person you discussed with? *A sexual conversation refers to dialogues during which you flirted, made sexual advances, discussed pornography or sexual activities.*

If not replied to the question above in affirmative yet responded to in affirmative in any of the below mentioned questions, the participants were still included in the solicitation group.

> Did you engage in cybersex?
> Did you send or share sexual pictures?
> Did you send or share pornography?

Reminder throughout the questionnaire: You replied that you had a conversation about a sexual topic with someone who was (depending on the earlier response: 13 or younger/ 14-17-years old/ 18 or older). Please keep in mind the person from this age group with whom you kept in touch for the longest duration when you reply to the following questions.

Identity deception

Did you change any aspect of yourself during your contact?

What aspects of yourself did you change?

I described myself as younger
I described myself as older
I described myself as physically more attractive
I described myself as younger than 18
I sent a picture of someone else, but said it was a picture of me
I said I was of another gender
I told the other person I was famous or influential
I said I knew the person, although I was a stranger
Other deception

Suggested secrecy

Did you ever ask this person to keep your online discussions a secret from somebody else?
Did you ever want or try to keep your offline meeting a secret?

Persuasion techniques for online purposes

Did you ever try to persuade this person to engage in cybersex with you or to send a sexual picture of themselves to you if they declined to do so when you first asked them to?

No
With money or gifts
I used something as leverage (e.g., previously sent pictures of that person)
By appealing to their positive feelings towards me (e.g., love or affection)
By appealing to their negative feelings (e.g., guilt or shame)
Other persuasion

Persuasion techniques for an offline purpose:

Did you ever try to persuade this person to meet up with you offline? (With the same alternatives as mentioned in the question for persuasion techniques for online purposes)

Online security measures

Do you use any measures to protect your anonymity online?
Which measures do you use to protect your anonymity online?

> I don't give away true personal information
> I configure my software to leave as little traces as possible (e.g. through using a proxy server)
> I secure my interface/modem that I use to go online
> I use a separate mobile phone as a modem or pre-paid mobile phone cards to go online
> I use encrypted chat channels (e.g., jagger, torproject.org etc.).
> Other anonymity measure

Situational factors

Please indicate how well the following statements MOST OFTEN applied to the situation when you had online contact with this person

> I was drunk
> I was sexually aroused
> I was sad
> I was bored
> I was stressed
> I was ashamed

The response alternatives were: Not at all (1), somewhat (2), pretty well (3), and very well (4). Each statement was answered for three different time phases of the interaction: Before the contact began, during the contact, and after the contact.

Appendix B

Examples of chat room discussions and how they were coded can be found below. The conversations were all in either Finnish or Swedish. The translations to English were made by the author. Apparent spelling mistakes were corrected but the use of abbreviations and such were used as directly translated as possible. The nicknames of the chat room visitors have been erased to mask their online identities for the purpose of their anonymity.

Example 1

Chat room: Non-specified in regards to sexual orientation
Impersonated: Female, 10 years
Contact: Male, 27 years
Coded as: Stopped sexual tone

Contact:	Hello! From where r u writing?
Impersonated:	xx-area
Contact:	how old are you?
Impersonated:	u 1!
Contact:	naah!
Contact:	ok ok, 27
Contact:	u??????????
Impersonated:	10
Contact:	Ok. Very young then ☺
Impersonated:	well… kinda dpds
Impersonated:	Why r u here?
Contact:	Just hangin'
Contact:	U?
Impersonated:	Yup, m 2
Contact:	Yes well let's just talk then, no funny stuff
Contact:	Isn't there an age limit like 17 or smth???
Impersonated:	Oh, sorry, dinner time, have 2 go, bye!

xx-area is short for the area surrounding a city in Finland. This location was chosen on the basis of the contacts Nickname which indicated where the contact lived.

Example 2
Chat room: Non-specified in regards to sexual orientation
Impersonated: Female, 14 years
Contact: Male, 52 years
Coded as: IM

Contact:	Hi there
Impersonated:	hi
Contact:	how young?
Impersonated:	u1st
Contact:	that's the 52 ;)
Impersonated:	ah, yes makes sense*
Contact:	;)
Impersonated:	I'm 14
Contact:	oooooh nice!
Contact:	am I 2 old?
Impersonated:	dpds
Contact:	for you I mean?
Impersonated:	what r u here 4?
Contact:	to meet a curious girl ;)
Impersonated:	I'm quite new with chatting
Contact:	It's going really well ;)
Impersonated:	ok…
Contact:	what R u looking 4?
Impersonated:	Dpds on what there's 2 find
Contact:	I'm in the south of (name of city), where d u live?
Impersonated:	(name of same city)
Contact:	really? Which part?
Impersonated:	Western
Contact:	nice! describe what u look like ;)
Impersonated:	like most my age
Contact:	c'mon, don't b shy!
Impersonated:	u 1st!
Contact:	like most older men, sexy :D
Impersonated:	and what r u looking 4?
Contact:	already told u, a curious girl
Impersonated:	curious about what?
Contact:	or a girl who's lookin' for a kind and helpful man who she can show her appreciation to…

Impersonated:	R u married?
Contact:	yes
Contact:	;)
Contact:	does it bother u?
Impersonated:	I'm not u'r wife
Contact:	:D
Contact:	R u experienced?
Impersonated:	in what?
Contact:	with boys? what have u tried? I like a girl who knows how to use her mouth
Impersonated:	shit I have to go and eat…
Contact:	ok
Contact:	that's a shame
Contact:	my IM is xxxxxxxxxxx PLEASE write!
Contact:	go eat now ;)

Example 3

Chat room:	Directed towards homo/bisexual men
Impersonated:	Male, 18 years
Contact:	Male, 18 years
Coded as:	Chatting

Contact:	age?
Impersonated:	guess
Contact:	56? :D
Impersonated:	haha no
Contact:	I'm 18
Impersonated:	Me 2!!
Contact:	describe u'rself!
Impersonated:	c'mon u 1st!
Contact:	cheeky! I'm sporty, 182 cm, 58 kg
Impersonated:	from?
Contact:	(name of city)
Impersonated:	I'm in (name of close by city)
Contact:	cool
Impersonated:	work? school?
Contact:	Vocational, u?
Impersonated:	last yr in gymnasium
Contact:	bi r homo?

Impersonated:	u?
Contact:	homo, ve u been with many guys?
Contact:	R u wanking?
Contact:	I am, all the time
Impersonated:	rly morning, ve got 2 go
Contact:	back tomorrow?
Impersonated:	d u mean here?
Contact:	yeh, lets continue then ;)

Original Publications