

Laura F. Kuhle | Daniela Stelzmann [Eds.]

Sexual Online Grooming of Children

Challenges for Science and Practice



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Preface – Why Online Sexual Offenses Against Children Are One of the Most Important Challenges of Crime Prevention Today

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In the last few years, humanity was faced with an extraordinary and unprecedented public health crisis. The day this preface was written, the COVID-19 pandemic, also known as the coronavirus pandemic, had infected more than 687 million cases and had caused 6.87 million confirmed deaths, making it one of the deadliest in history (Statista, 2023, May 2). At the same time, a second pandemic is haunting most parts of the world, which, unfortunately for all victims and survivors, has been slightly more concealed and silent than COVID-19. However, COVID-19 has certainly served as a fire accelerant for this second pandemic, which is sexualized violence against children by using online communication technologies. For example, the German police statistics (orig.: *Polizeiliche Kriminalstatistik* [PKS]), which collects data of all registered offenses throughout the whole country, has indicated a substantial increase of online sexual offenses against children in the last few years (Bundeskriminalamt, 2021): Within the last ten years, the number of these offenses has tripled. Similarly, the *European Union Agency for Law Enforcement Cooperation*, better known under the name *Europol*, documented in its annually published *Internet Organized Crime Threat Assessment* (IOCTA) report also a substantial increase in sexual offending cases – particularly but not exclusively against children – in the area of social media and online gaming platforms (Euro-pol, 2021). Furthermore, empirical studies about the prevalence of online sexual victimization experiences as well as expert surveys indicated an ongoing large dark figure of crime (e.g., Hasebrink et al., 2019; Wachs et al., 2012). In a diverse collection of surveys, between 20% and 25% of all children and juveniles reported that they have faced already experiences with online sexual offending behaviors (De Santisteban & Gámez-Guadix, 2018; Wachs et al., 2012). These are numbers which are shocking and alarming

also for experienced experts who are working for quite a long time in the field of criminology and forensic sciences.

One reason of this pandemic progress of online sexual offending behaviors is directly related to the distinctive properties of the Internet. With recourse to Cooper (2002), Seto (2013) proposes the notion of a „Triple-A engine“ (p. 15), consisting of the following three As:

- *Accessibility*, i.e., the high availability of sexual content in general and sexual deviant stimuli in particular, which enables an individual to consume child sexual exploitation materials within a few clicks.
- *Affordability* means that there are virtually no financial or temporal costs; as Seto (2013) impressively described, “a person motivated to solicit minors can approach hundreds – or more – individuals for free if they use [...] e-mail or social networks” (p. 16).
- The *anonymity* of the Internet – compared to most contact sexual offending behaviors – is probably the most relevant problem for the law enforcement authorities and, at the same time, is maybe the most important motivator for individuals committing online sexual offenses – even if the actual anonymity might be lower than the perceived one.

These aspects lead inevitably to the question how we could contain this pandemic. With recourse to the tremendous increase of knowledge about contact sexual offending behaviors in the last decades, there is one obvious answer to this question: We need as much empirically based scientific knowledge about (potential) offenders, (potential) victims, and the offending behavior as possible. Only the understanding of offending behavior allows the development of effective crime prevention strategies. And only the rigorous evaluation of these developed crime prevention strategies, and the revision of these strategies based on the evaluation reports, enables improvements and adaptations. Given that crime never sleeps, science should not be sleepy as well and needs permanent movement and development. At first glance, this could be exhausting for clinicians, because they must permanently question and scrutinize their everyday working routine, as well as for researchers, because never reaching the aim is part of their mission.

However, there are also some enormous gratifications for these demanding and challenging efforts, and maybe the most important one is the conviction that our work is actually working, i.e., it is effective. As we expressed in a previous publication, one highly relevant precondition for the development of effective crime prevention strategies is the cumulation

and dissemination of knowledge by, for example, writing, editing, and publishing books like the present one, which is still a cornerstone of sharing knowledge (Rettenberger et al., 2020). Therefore, I would like to express my sincere gratitude to all authors who have contributed to this book, to the editors, and to the publisher to make this excellent and important piece of work possible. This sharing of knowledge contributes substantially to the implementation of evidence-based assessment and intervention efforts in many different countries all around the world. We have already strong empirical indicators that scientifically based assessment and intervention techniques have contributed to the effect of decreasing crime and recidivism rates in contact sexual offending behavior (e.g., Hanson et al., 2019; Rettenberger, 2018; Rettenberger & Eher, 2024). The present book contributes unquestionably to the effort to transfer this crime prevention success story from the contact (e.g., offline) sexual offending behavior area to the field of online sexual offending.

The book starts with a brief introduction of the main topic (e.g., definition aspects and characteristics of the phenomenon of sexual online grooming [SOG]) by Zeev Hill, Daniela Stelzmann, and Laura F. Kuhle. In the following three sections of the book, the authors are covering different aspects of the three most important perspectives of SOG: the perspective of children as victims and survivors of SOG (section 2), the perspective of the offenders (section 3), and the perspective of crime prevention (section 4).

In the first chapter of section 2, Julia von Weiler introduces a case study about being victimized during an SOG offense. Afterwards, Maria Ioannou and John Synnott review the current state of research about the risk factors and vulnerabilities of becoming a SOG victim. In chapter 2.3, Halina Schmid and Janina Neutze present results from a large-scale community-based research project, the so-called “MiKADO Project”, which systematically collected data about the online sexual experiences of German adolescents. In the last chapter of section 2, Jennifer Vogel describes prevention concepts for the most vulnerable and most relevant group of potential victims, primary school children.

In the first chapter of section 3, Miriam Schuler, and Klaus M. Beier present a case study of a hebephilic man with a history of SOG and discuss the treatment-related implications in this case. In chapter 3.2, Alexander F. Schmidt gives an overview about what we know so far about the offense- and offender-related characteristics. In chapter 3.3, Katharina Kärger and Frederic Vobbe introduce and discuss the concept of hedonistic utilitarianism in the context of SOG and show that offenders use digital media strate-

gically to initiate, threaten, exploit, and humiliate their victims. Following, Anja Schulz and Petya Schuhmann report in chapter 3.4 data from an adult community-based sample to scrutinize what exactly we know about online sexual solicitation of minors and whether this offense could be interpreted as a specific form of SOG. In the final chapter of section 3, again Laura F. Kuhle and Daniela Stelzmann approach the topic of SOG by using qualitative data from the German Dunkelfeld project of men with a sexual preference for children.

The last section 4 might be interpreted as the most important one because it gives answers to the following question: How can we prevent children from SOG? First, Sebastian Büchner describes the efforts of the German law enforcement authorities to combat the phenomenon of SOG and reports the chances and challenges of the criminal investigation work of the police forces in Berlin. In chapter 4.2, Birgit Kimmel and colleagues give an overview about different crime prevention strategies available for protecting children from SOG. In chapter 4.3, Laura F. Kuhle and Daniela Stelzmann report on prevention strategies for offenders. Finally, Jenny Felser and colleagues describe the perspective of technological strategies to detect SOG to contribute to an effective crime prevention system.

As this summary shows, the present book provides an impressive and highly relevant collection of the current state of knowledge about online sexual violence against children. Thus, it is an extraordinary source for everybody who is interested in preventing online sexual crimes against children. I would like to congratulate the editors and authors for this impressive piece of work – and the readers for being able to benefit from this excellent book.

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Table of Contents

1. Introduction

- 1.1 Definition and Characteristics of the Phenomenon of Sexual Online Grooming 17
Zeev Hille, Daniela Stelzmann & Laura F. Kuhle

2. Children as Victims of Sexual Online Grooming – Understanding Vulnerabilities in order to Prevent

- 2.1 Anna and her Family – Case Study of a Victim of Sexual Online Grooming 41
Julia von Weiler
- 2.2 Victim's Individual Risk Factors and Vulnerabilities to Sexual Online Grooming 57
Maria Ioannou & John Synnott
- 2.3 Online Sexual Experiences of German Adolescents – Results from the Community-Based MiKADO Project 75
Halina Schmid & Janina Neutze
- 2.4 Sexual Online Grooming – Prevention Concepts for the Protection of Primary School Children 93
Jennifer Vogel

3.	Analyzing the Offender's Perspective – Characteristics and Strategies of Sexual Online Grooming	
3.1	The Magician – Case Study of a Hebephilic Man with History of Sexual Online Grooming <i>Miriam Schuler & Klaus M. Beier</i>	115
3.2	Sexual Online Grooming of Children – A Short Overview of the Offender Literature <i>Alexander F. Schmidt</i>	135
3.3	Hedonistic Utilitarianism: The Strategic Use of Digital Media along the Online-Offline Continuum of Sexualized Violence <i>Frederic Vobbe & Katharina Kärger</i>	153
3.4	Online Sexual Solicitation of Minors as a Specific Form of Sexual Online Grooming – Offender Data from an Adult Community-Based Sample <i>Anja Schulz & Petya Schuhmann</i>	167
3.5	Undetected Sexual Online Grooming: A Qualitative Analysis of Help-seeking Men with a Pedophilic and/or Hebephilic Sexual Preference Disorder <i>Laura F. Kuhle & Daniela Stelzmann</i>	185
4.	Prevention of Sexual Online Grooming – Legal, Psychosocial and Technological	
4.1	Combating the Phenomenon of Sexual Online Grooming from the Point of View of the State Office of Criminal Investigation Berlin <i>Sebastian Büchner</i>	203
4.2	Protecting Children from Sexual Online Grooming <i>Birgit Kimmel, Stefanie Rack & Stefanie Fächner</i>	225

4.3	Prevention Strategies for Offenders of Sexual Online Grooming	243
	<i>Laura F. Kuhle & Daniela Stelzmann</i>	
4.4	Technical Perspectives of Sexual Online Grooming	263
	<i>Jenny Felser, Svenja Preuß, Dirk Labudde & Michael Spranger</i>	
	Acknowledgment	297
	Author biographies	299

1. Introduction

1.1 Definition and Characteristics of the Phenomenon of Sexual Online Grooming

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Sexual online grooming (SOG) constitutes a specific form of online child sexual exploitation that shares some characteristics with grooming in offline environments regarding the complexity and diversity of grooming behaviors as well as the goals that offenders seek to achieve by these behaviors. On the other hand, differences pertain to the means of victim selection, overcoming external barriers, and the temporal progression of the grooming process. Against the background of the SOG complexity, the current chapter gives an overview of the definition and characteristics of SOG in general, distinction of different facets of the phenomenon, prevalence, victim and offender characteristics, and preventive efforts. In summary, SOG is a notably complex phenomenon that warrants further empirical efforts on clarifying some of its key aspects in order to inform the design and implementation of useful preventive approaches.

Keywords: sexual online grooming, online child sexual exploitation, grooming offenders, grooming victims, grooming prevention

Definition and characteristics of the phenomenon of sexual online grooming

Sexual online grooming (SOG) is one major risk for youth online and a topic associated with heightened public concerns (Williams & Hudson, 2013). By the end of the last decade, the majority of European countries had established legislative instruments to define online grooming as a criminal offense (Klimek, 2020) while at the same time the scientific discourse delivered a multitude of different definitions in order to capture this relatively new construct. This introductory chapter aims to distinguish the concept of SOG from other related types of offenses (e.g., online sexual solicitation) by clarifying key aspects of SOG. Furthermore, studies regarding prevalence estimates of online grooming and their methodological challenges will be reviewed. Finally, this chapter highlights the main characteristics of online grooming offenders and victims as well as current preventive efforts.

Online child sexual exploitation – online sexual solicitation – sexual online grooming

Sexual offenses against children and adolescents have existed prior to the Internet; however, technological advances in the new millennium and their associated features (e.g., anonymity and accessibility) set the stage for new technology-mediated sexual crimes against youth, which pose challenges for law enforcement agencies, governments, and prevention systems alike (Kierkegaard, 2008; in this volume, see Büchner in Chapter 4.1). In this regard, *online child sexual exploitation* has been used as an umbrella term to subsume technology-mediated forms of abuse, such as the production, distribution, and possession of child sexual abuse material resulting from prior offline victimization vs. both online sexual solicitation and SOG as abusive and exploitative interactions taking place in online environments (Gottfried et al., 2020; Seto et al., 2012).

Online sexual solicitation refers to a specific kind of online interaction by which sexual activity or sexual conversations are requested from a minor or attempts are made to receive intimate sexual information from the victim (Mitchell et al., 2007). Notably, online sexual solicitation can be wanted or unwanted, and it can also occur when the solicitor is another minor (Madigan et al., 2018; Villacampa & Gómez, 2016). Being solicited by another under-aged individual can have negative consequences on the victim, although in many cases it can be conceived of as more or less developmentally appropriate (Gottfried et al., 2020; Ybarra et al., 2004). Adult solicitors, on the other hand, in any case display an abusive and sexually motivated behavior that in many jurisdictions can be prosecuted as soon as intentions are expressed to sexually interact with that minor in the context of offline meetings (Barber & Bettez, 2021; Klimek, 2020; van Gijn-Grosvenor & Lamb, 2016). Hitherto, there is no clear consensus on how to differentiate sexual solicitation in online environments from SOG, with some scholars using the terms interchangeably (e.g., Ospina et al., 2010), whereas others point out to the more complex nature of grooming online (e.g., Kloess et al., 2019). While solicitations can occur as a single event and do not require the minor to react or agree to the sexual desires or requests made by the adult offender, they can also be embedded in prolonged online interactions that require the victim to react or participate (Gámez-Guadix et al., 2018). In this view, soliciting behaviors can be indicative of a more dynamic grooming process, of which they can be initial steps, specific outcomes or elements within a set of strategies aimed at asserting influence

on the interaction (Aitken et al., 2018; Gámez-Guadix et al., 2021; Machimbarrena et al., 2018; Schulz et al., 2016). In addition to sexual solicitation, other strategies and techniques like harassment, threats or compliments are common characteristics of SOG associated with grooming behaviors in offline contexts (O’Leary et al., 2017; Wachs et al., 2016). However, although online and offline grooming share some common features, they are yet phenomenologically different (Ioannou et al., 2018). Hence, in addition to distinguishing SOG from other forms of online child sexual exploitation, delineating commonalities with, and differences to, offline grooming is essential in order to highlight novel aspects of grooming in online environments (Davidson & Gottschalk, 2011).

Commonalities and differences in defining grooming in online vs. offline environments

Since the contexts, offenders, victims, and specific kinds of behaviors involved in face-to-face grooming vary considerably, definitions for sexual grooming are highly heterogeneous, accordingly. In an attempt to provide an operational definition of sexual grooming offline, Winters and colleagues (2022) reviewed several past definitions of the construct in order to identify common aspects as well as limitations that became evident from both a theoretical and empirical point of view. As a result of their evaluation, the authors proposed the following conceptualization:

“Sexual grooming is the deceptive process used by sexual abusers to facilitate sexual contact with a minor while simultaneously avoiding detection. Prior to the commission of the sexual abuse, the would-be abuser may select a victim, gain access to and isolate the minor, develop trust with the minor and often their guardians, community, and youth-serving institutions, and desensitize the minor to sexual content and physical contact. Post-abuse, the offender may use maintenance strategies on the victim to facilitate future sexual abuse and/or to prevent disclosure” (Winters et al., 2022, p. 933).

This comprehensive definition of offline grooming proves to be beneficial in both clarifying key aspects of online grooming and highlighting its distinctiveness from in-person grooming. First, the view of the grooming interaction as a *dynamic and complex process* is pervasive in the literature on online grooming as well (Aitken et al., 2018; Hui et al., 2015; Lorenzo-

Dus et al., 2016). In fact, research has shown that depending on the victim's reaction the duration of the SOG process can vary between minutes to months (Webster et al., 2012). However, since interactions are not dependent on physical encounters or proximity, technology-mediated grooming processes can proceed faster and, in turn, lead to the offender's desired (sexual) outcomes more readily (Hui et al., 2015).

These outcomes can be conceived of as *specific goals* towards which the behaviors displayed in the grooming process are directed at. Amongst others, they might include desensitizing the minor to, and reducing resistance against, sexual content (Berson, 2003), facilitating sexual abuse (Tener et al., 2015), and minimizing the likelihood of disclosure (Whittle et al., 2014). Hence, the goals identified in SOG strongly overlap with those identified in offline contexts (Bennett & O'Donohue, 2014; Craven et al., 2007).

Nevertheless, *selection of and access to suitable victims* to arrive at these goals differ notably between contexts. In offline environments, intrafamilial offenders may simply select their victims based on proximity and availability, while extrafamilial perpetrators generally need to rely on grooming strategies since victim access is rather established by acquaintance or by working in institutional contexts (McAlinden, 2013). In chat rooms or social networking sites, on the other hand, offenders can capitalize on a pool of potential victims regardless of geographical distance and select those minors that seem to be most vulnerable and suitable based on personal information in profiles and posts (Berson, 2003; Eneman et al., 2010; Smith et al., 2014).

Additionally, SOG does not necessarily require offenders to display grooming behaviors targeting *significant others, the community or the institution*, which might be necessary means for offline offenders to overcome external inhibitors (Finkelhor, 1984; Plummer, 2018; Sullivan & Beech, 2004; A. Williams, 2015). Rather, online offenders can benefit from the anonymity provided by online environments and are, therefore, confronted with fewer obstacles (Briggs et al., 2011). Nevertheless, they still have to circumvent inhibitors unique to online sexual exploitation such as parental supervision of minors' online behavior (Dos Santos Lemos Fernandes, 2015). Hence, instead of grooming the environment, they need to assess potential obstacles in the evolving online interaction, e.g., by inquiring about parents' whereabouts or other individuals using the same computer (Williams et al., 2013).

Apart from risk assessment, *deceptive strategies* like flattery and compliments or expressions of love and trust are applied to manipulate the target by building rapport as is the case with face-to-face grooming (de Santisteban et al., 2018). However, only in online contexts offenders can make use of the potential anonymity in order to conceal their true identity by posing as another minor (Williams et al., 2013). Additionally, this fake online persona can be further embellished by making false statements about physical appearance, personality traits or interests in order to increase the likelihood of the victim participating in the (sexual) interaction (Quayle et al., 2014). However, research has shown that only a small amount of offenders present a fake persona, which means that most victims seem to be aware of the fact that they are interacting with an adult (Malesky, 2007; Wolak et al., 2008).

In the case of offline grooming processes, there seems to be a consensus that strategies like the ones outlined above are embedded in a *sequence of stages* (Winters et al., 2020), while the literature on online grooming does not unequivocally support this notion. In this regard, O'Connell (2003) proposed a model of SOG that specifies several stages of the online interaction, i.e., friendship-forming stage, relationship-forming stage, risk-assessment stage, exclusivity stage, sexual stage, and damage limitation, of which each is supposed to be associated with specific grooming techniques and goals. While in the cases of SOG studied by O'Connell (2003) these stages were found to occur more or less in the proposed sequence, other research revealed differing results. By analyzing transcripts of online interactions between offenders and victims, Williams and colleagues (2013) found evidence for three SOG themes (i.e., rapport-building, sexual content, and assessment) that strongly overlap with the assumed stages in the O'Connell model. Yet, they all occurred at a very early point of the conversation, and the sequencing varied considerably between offenders. These findings are also consistent with research conducted by Black et al. (2015), which revealed risk assessment and the subsequent introduction of sexual content, in particular, to be themes that occurred rather early and were highly prevalent throughout a given online interaction. Moreover, all stage-specific terms or phrases did not emerge significantly more frequently in the corresponding stage as proposed by O'Connell but instead were found to be distributed equally in all sections of the transcript. Hence, the SOG process does not seem to follow the suggested linear progression but seems to be more cyclical in nature and, thereby, different from the assumed sequencing of the offline grooming process as well (Aitken et al., 2018; Black et al., 2015; Elliott, 2017; Winters et al., 2020).

Finally, the possibility that offenders may make use of *post-abuse strategies* (Bennett & O'Donohue, 2014) is one feature of offline grooming that does not become evident from the literature on SOG. In this regard, O'Connell (2003) found evidence of what she labeled a "hit-and-run" tactic, i.e., that most online offenders did not show interest in damage limitation, maintaining the online contact or even continuing it offline and instead simply abandon the interaction. Likewise, in cases where the online grooming process actually did lead to an offline meeting and a concomitant hands-on abuse, 71% of victims reported that the relationship ended post-abuse (Greene-Colozzi et al., 2020).

Prevalence of sexual online grooming

Reliable prevalence estimates of SOG are difficult to obtain. For instance, for minors to report grooming victimization they first need to identify online relationships with adults as exploitative, distinguish it from appropriate forms of sexual experimentation, and know about, and make use of, potential reporting structures in their social environment and respective country (Bryce, 2009). Reporting is further complicated by a minority of offenders posing as another minor and contacting multiple victims simultaneously (Schulz et al., 2016; Wolak et al., 2004). Therefore, both self-report data on grooming victimization and police reports are unlikely to represent reliable approximations (Wachs et al., 2016).

In addition, the prevalence estimates provided by the few quantitative studies at hand vary depending on methodological aspects like sample choice, means of data collection, or operational definition of the concept. In this regard, the body of literature rather delivered prevalence estimates for online solicitation due to either blurred conceptualizations of grooming or simply because operationalizing and assessing soliciting behaviors is more viable than finding appropriate methodological approaches for capturing the complexity of online grooming interactions.

Hence, research funded by the European Union (EU Kids Online) showed that 15% of minors received sexual messages online, 30% have communicated with someone unknown online, and 9% have met an online contact face-to-face (Livingstone et al., 2011). In addition, for all of these solicitations a follow-up project reports inclining numbers, albeit with substantial variability between minors from different age groups and countries (Smahel et al., 2020). For instance, in Germany a repeated data

collection period was conducted applying the same survey that was used in the multinational assessment (Hasebrink et al., 2019). Here, 35% of respondents aged between 12 to 17 reported having received sexualized messages within the year prior to data collection, while another 30% have been made sexual requests that they felt uncomfortable with. In both cases, higher prevalence rates have been found for older teenagers at the age of 15 to 17, of which more than a fourth (27%) reported at least one offline meeting with someone they had met online (vs. 12% of the whole sample).

Conversely to the rising numbers found in European samples, a consecutive US project with data collection periods in 2000, 2005, and 2010 found a decline in proportions of youth reporting online sexual solicitation from 19% to 13% and 9% in 2010, respectively (Finkelhor et al., 2000; Jones et al., 2012; Wolak et al., 2006). Meta-analytical prevalence estimates, on the other hand, range between 9.4% and 13.6% of minors experiencing any kind of online solicitation (Madigan et al., 2018). However, almost all of the studies included in this meta-analysis failed to assess and report separate prevalence rates for solicitation by peers vs. adults, which, in turn, makes it infeasible to draw conclusions regarding predatory and exploitative online behavior since it is very likely that most online sexual interactions occur between peers (Jones et al., 2012).

In an attempt to overcome this problem, a German study separately evaluated experiences of online solicitation by peers and adults (Sklénarova et al., 2018). Here, 22% of the sample had been victims of soliciting behavior displayed by adults, including sexual conversations, exchanging pictures, or engaging in cybersex. Although these kinds of behaviors can be elements of SOG, they do not necessarily have to indicate a more complex interplay between an online groomer and a victim. Yet, some researchers applied imprecise differentiations between solicitation and SOG using the two concepts interchangeably (e.g., Montiel et al., 2016). For instance, Villacampa and Gómez (2016) found that 10.4% of their sample experienced online grooming by an adult in the year prior to data collection. However, participants were classified as groomed when they had been requested by an adult to talk about sex, provide sexual information, or perform sexual behavior online, i.e., when they had been solicited.

Accordingly, the remaining number of studies utilizing acceptable approaches for estimating prevalence rates of SOG is rather limited. For example, Greene-Colozzi and colleagues (2020) made use of a comprehensive grooming inventory inquiring about long, ongoing conversations with adult strangers as well as assessing several dimensions of that online rela-

tionship such as amount of information shared, use of deceit, or manipulation in order to capture SOG more holistically. The authors found 23% of the sample to recall an online relationship that fit the conceptual profile of SOG; however, in the majority of cases the alleged age of the offender was between 18 and 22, whereas the victim's age was 16. Another approach applied by Wachs and colleagues (2016) was to present a description of SOG and its characteristic features and then ask participants to indicate the frequency of respective encounters. In this manner, 18.5% of the sample reported grooming victimization, albeit with great variability between subgroups based on nationality. Furthermore, a recent study from Spain assessed the grooming process in greater depth by analyzing the prevalence of different online grooming strategies applied by adult offenders (Gámez-Guadix et al., 2021). They found aggressive strategies (7.2%), gift giving (7.9%), and sexualization (11%) to be less prevalent, whereas the use of deceit (16.5%) and interest in the victim's environment (18.2%) occurred more frequently.

Finally, Schulz and colleagues (2016) assessed frequencies of different online and offline outcomes from an offender perspective. Results of their online survey showed that of those individuals reporting any kind of sexual online interaction with a minor, 10.9% indicated that the interaction took place over a prolonged period. Furthermore, 4.5% of their adult sample reported soliciting adolescents, whereas 1% solicited children. This difference in rates of victimization not only emerged due to older adolescents being accessible more readily in online environments (Wolak et al., 2008) but also are highly dependent on offenders' preferences and characteristics as well. Therefore, results from empirical investigations into victims' and offenders' characteristics will be reviewed in the next sections.

Characteristics of victims

The process of online grooming can be conceived of as resulting from a complex interaction; thus, victims' characteristics and behaviors contribute to the specific outcomes. Research has identified a set of factors that increase the likelihood of minors to be victimized in online environments. With regard to sociodemographic aspects, victim age consistently has been shown to be positively related to the experience of online victimization (Gámez-Guadix et al., 2021; Jones et al., 2012; Sklenarova et al., 2018; Smahel et al., 2020). Compared to younger adolescents or children, older youths use the

internet more frequently, are more likely to possess mobile devices, and, for developmental reasons, are more inclined to respond to romantic or sexual advances – all of which elevates the risk of being groomed and/or solicited (Livingstone & Smith, 2014; Wolak et al., 2008). Furthermore, studies frequently found female adolescents to suffer from higher rates of grooming victimization than their male counterparts (Baumgartner et al., 2010; de Santisteban et al., 2018; Jonsson et al., 2019; Wachs et al., 2016; Whittle et al., 2013b; Wolak et al., 2004). This difference might stem from both the sexual orientation of offenders and more risky online behaviors of girls. For instance, female adolescents have been found to disclose more personal and sexual information on their social media profiles, which might increase the likelihood of being targeted as a suitable victim (Pujazon-Zazik et al., 2012).

Male victims, however, still constitute a substantial proportion of victimized youth and are possibly less prone to disclose abusive experiences due to gender-specific ideals and differences in socialization (O’Leary & Barber, 2008). Therefore it might be the case that male youth’s experience of online victimization tends to be rather under-reported. In addition, research has shown increased vulnerability for a variety of different kinds of online sexual abuse of youth identifying as sexual minority (Gámez-Guadix et al., 2015; Sklenarova et al., 2018). Compared to heterosexual youth, queer minors use the internet more frequently in need for orientation and guidance regarding insecurities in the development of their evolving sexual orientation and identity (Park & Kwon, 2018). Thus, they are more willing to connect with like-minded others and, in turn, are exposed to elevated risks for exploitative relationships (Livingstone & Smith, 2014). In fact, Wolak and colleagues (Wolak et al., 2004) report that 25% of the chat room sex crimes they studied occurred between adolescent boys and adult men and were facilitated by the guise of supporting the teenage victims in terms of questions regarding their sexual identity.

Turning to social and environmental factors, research has emphasized the role of parental aspects. For instance, minors whose online behavior is monitored and supervised and whose caregivers show a rather privileged educational and socioeconomic profile report significantly less incidences of sexual online solicitation (Jonsson et al., 2019; Madigan et al., 2018; Noll et al., 2013). Moreover, qualitative aspects of the relationships to parents such as perception of the relationship as conflictual or non-supportive, separated living conditions, and illness all contribute to minor’s vulnerability to being victimized since these individuals are more likely to respond to the alleged interpersonal closeness presented by offenders’ deceptive grooming

strategies (Jonsson et al., 2019; Maas et al., 2018; Sklenarova et al., 2018; Whittle et al., 2014; Wright & Donnerstein, 2014). Furthermore, social deficits outside the familial context, such as lack of supportive and caring relationships with peers, constitute social vulnerabilities that are associated with risk for victimization (Whittle et al., 2013b).

In a similar vein, individual psychological factors pertaining to mental health are related to involvement in exploitative sexual online relationships. For instance, experiences of SOG were associated with symptoms of anxiety and depression, substance abuse, post-traumatic stress disorder, and compulsive internet use (Dönmez & Soylu, 2020; Gámez-Guadix et al., 2021; Jonsson et al., 2019; Wachs et al., 2016). However, due to the cross-sectional design of these studies inferences regarding the direction of effects remain hypothetical, although a reciprocal influence can be assumed as it is the case with other forms of online victimization, i.e., pronounced levels of psychopathology increase the risk of victimization, which, in turn, increases the burden of mental health problems (Gámez-Guadix et al., 2013).

Finally, on a behavioral level, potential risky online behaviors increase the likelihood of victimization. For instance, victimized youth significantly more often displayed specific behaviors such as extensive amount of time spent online, sharing personal or contact information, adding unknown strangers to one's list of friends or talking to strangers online (Baumgartner et al., 2010; Jonsson et al., 2019; Mitchell et al., 2007). In terms of sexualized online behavior, exchange of messages with sexualized content and nude pictures or videos or intentionally looking for someone to talk about sex or to have cybersex with were reported significantly more often by minors who experienced online sexual abuse (Jonsson et al., 2019).

Characteristics of offenders

Currently, there is debate on whether or not online offenders are a distinct offender group or whether they can be conceived of as not fundamentally different from their offline counterparts since they simply use technological advances to commit crimes similar to the ones committed in offline environments (Tener et al., 2015). In order to approach this question, Babchishin and colleagues (2011) carried out a meta-analysis of 27 studies describing characteristics of online offenders and differences in relation to both offline offenders and males in the general population. Compared to the latter group, online offenders were more likely to never been married

($d = .49$, $p < .001$), unemployed ($d = .67$, $p < .05$) and showed higher rates of childhood sexual ($d = .58$, $p < .05$) and physical abuse ($d = .66$, $p < .001$). When face-to-face offenders served as the reference group, the authors found online offenders to be younger ($d = -.28$, $p < .001$) and less likely to be of a racial minority ($d = .86$, $p < .05$). Furthermore, online offenders showed lower rates of childhood physical abuse ($d = .29$, $p < .05$), higher rates of victim empathy ($d = .56$, $p < .05$), and more sexual deviancy ($d = -.57$, $p < .05$), whereas they scored lower on measures for cognitive distortions ($d = .66$, $p < .001$) and emotional congruence with children ($d = .28$, $p < .05$). However, most of the studies included in this meta-analysis failed to provide information on whether their samples consisted solely of online offenders without any prior offline offence and offline offenders with no prior online offence, respectively. Due to the possibility of online offenders having a history of hands-on crimes (Malesky, 2007), or vice versa, the two groups compared here are rather mixed offender groups, which, in turn, leads to an overestimation of effect sizes. Moreover, the results are not conclusive regarding distinct characteristics of online groomers since the samples of online offenders consisted of different offender types.

In this regard, Seto and team (2012) separately compared offline offenders to both child sexual exploitation material (CSEM) offenders and online solicitation offenders on a variety of measures. Compared to CSEM offenders, solicitation offenders were less likely to report pedophilic ($d = -2.20$, $p < .001$) or hebephilic interests ($d = -.57$, $p < .001$) and scored lower on measures for sex drive and sexual preoccupation ($d = -.53$, $p < .001$). In relation to offline offenders, solicitation offenders reported significantly more consumption of CSEM ($d = -1.13$, $p < .05$) and less stable relationships ($d = -.68$, $p < .05$).

In terms of demographic and socioeconomic variables, the results of Seto and colleagues are consistent with findings from a large online survey (Schulz et al., 2016) revealing that those admitting to have solicited children or adolescents were rather young and report a high degree of formal education and very low rates of unemployment. Interestingly, however, approximately 28% of this sample comprised female offenders. Although these numbers are comparable to those derived from victimization surveys (Finkelhor et al., 2000), offender samples recruited for investigations into online solicitation and online grooming are generally exclusively male. Unfortunately, Schulz and colleagues did not compare female and male participants in greater depth, albeit they found female offenders to be more likely to target male minors and equally likely to target female minors

online. Apart from this, literature on female offenders is extremely scarce and refers mostly to CSEM offenses (Gottfried et al., 2020; Martellozzo et al., 2010) or offline grooming behaviors (Kaylor et al., 2021). However, Elliott and Ashfield (2011) provide some anecdotal evidence by describing case studies of female online groomers who, in their view, were primarily motivated by socialization deficits, deviant sexual arousal, and cognitive distortions about the sexual nature of both children and males (e.g., beliefs that children can initiate sexual contacts). Taken together, the paucity of information on female online groomers points to the fact that female-perpetrated online abuses seem to be highly under-detected, under-reported, and under-studied as is the case with contact sexual abuse committed by women (Cortoni et al., 2017).

Turning to psychopathological characteristics, online groomers are sometimes referred to as pedophilic individuals (e.g., Berson, 2003), although for several reasons it seems more reasonable to assume that they fit the clinical profile of a hebephilic disorder (Stelzmann et al., 2020). For instance, Seto and colleagues (2012) found solicitation offenders to report less pedophilic but more hebephilic sexual interests than did hands-on offenders. Additionally, phallometric assessments of convicted online groomers revealed no sexual arousal towards prepubescent children (Briggs et al., 2011). Finally, 99% of minors reporting sexual online victimization were between the ages of 13 and 17 (Wolak et al., 2004), which may also be due to the fact that prepubescent victims are simply not quite accessible online and, due to developmental reasons, not inclined to establish romantic or sexual relationships online (Wolak et al., 2008).

Instead of sexual arousal to children, Briggs and colleagues (2011) report further paraphilias in around 10% of offenders as well as clinically relevant sexual compulsivity, i.e., masturbation during the online communication, engaging in cybersex with the victim, sending nude photos, or exhibitionism on web cams. The authors' behavioral analysis revealed that these behaviors were not displayed equally frequent by all offenders, which led them to a dichotomized typology of online groomers based on their assumed primary offense motivation. The first group, so-called fantasy-driven offenders, showed a multitude of sexualized behaviors and are assumed to be motivated by sexual gratification during online interactions with minors. Contact-driven offenders, on the other hand, were less likely to show sexualized behaviors but instead keen to suggest or arrange face-to-face meetings, i.e., motivated by sexual gratification offline.

Notably, this typology has been subject to some criticism since it does not unambiguously categorize online groomers into two distinct entities. In this regard it is unlikely to assume that contact-driven offenders do not experience sexual gratification during the online interaction to some degree and that, foremost, some individuals classified by Briggs and colleagues engaged in specific behaviors that were ascribed to the opposite group (Broome et al., 2018).

As a consequence, DeHart and colleagues (2016) derived a typology of offenders using cluster analysis that is somewhat similar to the one proposed by Briggs and colleagues. However, besides what they labeled cybersex offenders and schedulers (which corresponds to fantasy-driven and contact-driven, respectively) they found support for a mixed group of offenders (cybersex/schedulers) that showed a significantly higher amount of sexualized behavior during the online interaction than did the schedulers-only group, while simultaneously making attempts to arrange hands-on offences as well.

Preventive efforts

In contrast to the substantial body of literature regarding the characteristics, offenders, and victims of SOG, only few scholars explicitly focused on prevention measures and suggested different means of prevention (Berson, 2003; Whittle et al., 2013a; Wurtele & Kenny, 2016).

In terms of legislative instruments, most European countries as well as legislations in the US, Canada, Australia, and New Zealand criminalized the use of communication technologies for the purpose of SOG (Gottfried et al., 2020; Gottschalk & Hamerton, 2022; Klimek, 2020). Furthermore, technological advances regarding software that filters, blocks, or monitors the online activity of minors is considered a useful measure (Whittle et al., 2013a), although simply restricting access to certain media does not always reduce the likelihood of being victimized online and, moreover, might reduce specific online opportunities for minors as well (Mitchell et al., 2008; Staksrud & Livingstone, 2009). However, there is a continuous progression in the development of software that can detect sexually exploitative interactions online (e.g., Anderson et al., 2019; Ashcroft et al., 2015; Miah et al., 2011; Villatoro-Tello et al., 2012; in this volume, see Felser et al. in Chapter 4.4).

Nevertheless, raising awareness among minors, parents, and educators is crucial. In this regard, several online-safety websites emerged in the last years that provide youth with safety information and messages as well as (class-room-based) educational programs (e.g., *Thinkuknow*) (Calvete et al., 2021; Davidson et al., 2009). These educational resources, however, have been criticized for not meeting necessary standards in terms of evidence-based validation or evaluation (Brennan et al., 2019; Quayle, 2020) and do not draw on the potential of integrating insights from victims' statements in the development of preventive programs (Redondo-Sama et al., 2014). In any case, open conversations with minors about online risks should be encouraged by caregivers and educators in order to help them identify grooming tactics, predators, and exploitative interactions as well as to make disclosure of abusive online relationships more likely (for recommendations and overview on parental and educational guidelines, cf. Wurtele & Kenny, 2016).

Finally, intervention programs like the Prevention Network “*Kein Täter werden*” (meaning: “Don’t offend”, <https://www.kein-taeter-werden.de>; Beier et al., 2014) have shown that self-identified individuals with a pedophilic and/or hebephilic sexual preference disorder can be motivated to take part in a preventative treatment program in order to enhance behavioral control and reduce offense-related risk factors with the aim of preventing sexual assaults towards minors both offline and online.

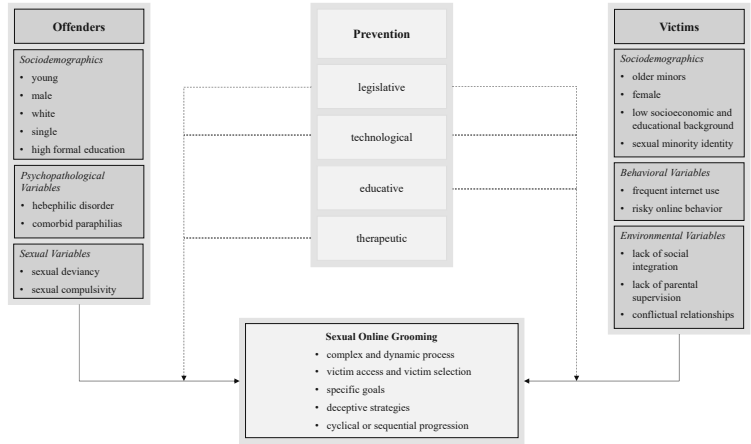


Figure 1: Key elements of sexual online grooming

Conclusion

This chapter documented the complexity and heterogeneous phenomenology of SOG (cf. figure 1) accompanied by a set of different (deceptive) strategies and techniques aimed at the facilitation and secrecy of deviant behavior. However, compared to offenders grooming offline, online offenders benefit from the unique features of the internet, which pose a facilitated environment to sexually offend against minors. Consequentially, these features also contribute to pronounced difficulties in estimating reliable numbers of offenders and victims as well as of the occurrence of online grooming interactions. In order to arrive at distinct types of SOG offenders, a multitude of typologies have been proposed that differ notably in the selection of variables and dimensions on which classification is based as well as in the methodology to derive specific offender types. Regarding SOG victims, research has provided less equivocal results and shown that older adolescents who display risky online activities and who suffer from enhanced emotional and social vulnerabilities are at heightened risk for being targeted by online predators. In order to prevent these minors from being victimized, several preventive efforts have been suggested, e.g. legislative, technological, therapeutic, and educative approaches. For all aspects of SOG outlined here more empirical efforts and clarification on some key issues are needed; however, this is especially true for the development of effective prevention measures.

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2. Children as Victims of Sexual Online Grooming

- Understanding Vulnerabilities in order to Prevent

2.1 Anna and her Family – Case Study of a Victim of Sexual Online Grooming

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Many children and juveniles experience unwanted sexual online grooming via digital media and the prevalence is increasing steadily. In contrast, the scientific knowledge of sexual online groomers, their typical strategies, the dynamic of the relation between the offender and the victim as well as the escalation of the offending process and the role of parents is scarce. Against this background, this chapter describes a typical case study of a young girl and her parents who contacted Innocence in Danger for help, after the girl was groomed sexually via the Internet and was sexually abused when meeting the offender.

Keywords: case study, sexual online grooming of children, child sexual abuse, trauma dynamic

Introduction

Prevalence of sexual online grooming among children and juveniles

Today, many children and juveniles experience different forms of unwanted sexual contact initiations in digital media (Hasebrink et al., 2019; Madigan et al., 2018; *Polizeiliche Kriminalstatistik (PKS)*, 2018; Sklenarova et al., 2018; Ybarra et al., 2004). A study by the *Internet Watch Foundation* (2018) on so-called “live-stream sexual abuse” (i.e., abuse via webcam) demonstrates that 98 percent of children who experienced unwanted sexual contact initiations are 13 years old or younger. In 96 percent of cases, they are digitally abused at home or in their own room. In connection therewith, the 2021 annual report of the Internet Watch Foundation reports that “self-generated” depictions of child sexual abuse found online (i.e., someone captures a recording via a phone or computer camera of children who are often alone in their bedrooms) is the predominant type of child sexual abuse depictions with being part in 70 percent of reports. About two thirds of actioned reports specifically show the sexual abuse of an 11–13-year-old girl who has been groomed, coerced, or encouraged into sexual activities via a webcam (Internet Watch Foundation, 2022). In this context, the so-called sexual online grooming (SOG) represents a prevalent

phenomenon, in which an adult offender aims to establish contact with a minor to sexually abuse him or her (Akhtar, 2014; Stelzmann et al., 2020).

Vulnerabilities of children and juveniles to become victims of sexual online grooming

Even though SOG is a phenomenon that also takes place in offline environments such as family or pedagogical institutions (Akhtar, 2014; Stelzmann et al., 2020), SOG poses an increasing danger through the widespread of digital media in general and social media in particular (Hasebrink et al., 2019; Madigan et al., 2018; *Polizeiliche Kriminalstatistik (PKS)*, 2018; Sklenarova et al., 2018; Ybarra et al., 2004). Online offenders benefit from the structures of digital media and can thus search for potential victims in order to build up contact with them (Berson, 2003; Eneman et al., 2010; Smith et al., 2014; Webster et al., 2012). Moreover, to fulfill their sexual gratification, offenders use different strategies to manipulate the child or adolescent (Black et al., 2015; de Santisteban et al., 2018, in this volume, see Schmidt in chapter 3.2; Kuhle & Stelzmann in chapter 3.5). Platforms like Instagram, WhatsApp, Snapchat, or TikTok invite everybody to present themselves, even demand it. The search for recognition seems to be a driving force in the digital self-presentation of children and young people. 40 percent of young people between the ages of 12 and 20 say they feel like a nobody if they do not get any likes for a selfie (Hackett, 2017). Jean Twenge (2017) describes these young people as the “iGeneration”, the first generation to spend all their adolescence on a smartphone. According to Twenge (2017), this leads to many wave movements regarding well-being, social interactions, and the way the “iGen” thinks about the world. Twenge (2017) also notes a measurably lower sense of well-being after more hours of screen time and correspondingly less time for analog interaction with friends.

The need of children and adolescents for recognition, their curiosity, their urge to try things out, and their communication behavior cause them to often expose themselves digitally to risks which they cannot recognize due to their development level (Baumgartner et al., 2010; Jonsson et al., 2015; Mitchell et al., 2007; Whittle et al., 2013, in this volume, see Ioannou & Synnott in chapter 2.2). Hence it is important not to confuse the high digital application competence of children and young people – i.e., the

speed at which they can use a smartphone, for example – with media or even digital literacy.

The ROBERT study (Quayle, Allegro, et al., 2012; Quayle, Jonsson, et al., 2012) interviewed young people (11 to 17 years) affected by SOG and sexual abuse as well as convicted sex offenders who had used SOG as a strategy. Results bring close that under challenging circumstances children are more susceptible to exploiting their need for affection and closeness. For the young people it is a “relief and joy” to have found a person to whom they feel intimately connected. Respondents perceived a person who understands them and is available to them as someone with whom to find a way out of a life where things that were important to them were missing. The interviewees’ reports showed how the perpetrators succeeded in conveying a promise of closeness, accompanied by the possibility of experiencing something exciting, already in the first contact. The youth’s openness to this offer was apparent and reciprocated. Respondents gave many explanations for their desire to get in contact with new people: longing for something new or the urge to become more visible. That included, among other things, sadness since the parents’ divorce, being a little out of school, or being left alone by parents who “felt they had no time for them” (Quayle, Jonsson, et al., 2012, p. 101).

For children and adolescents, seemingly unsuspecting communication can have serious consequences. For instance, experiences of sexual violence have been associated with symptoms of anxiety and depression, substance abuse, posttraumatic stress disorder, and compulsive Internet use. Due to the cross-sectional design of these studies, conclusions about the direction of the effect remain hypothetical, although a reciprocal influence can be assumed (Dönmez & Soylu, 2020; Gámez-Guadix et al., 2013; Jonsson et al., 2019).

Sexual offenders against children using digital media

The MiKADO study commissioned by the Federal Ministry of Family Affairs shows that approximately 5 percent of a German general population sample stated to have had at least one online sexual contact with children they do not know, and 2 percent reported to have met offline with children. The study goes on to state that online sexual contacts between adults and a child (under the age of 14) lead to sexual abuse of children in 100 percent of cases – if the children agree to meet offline (Neutze & Osterheider, 2015)

Offenders going online and using SOG strategies have a decisive digital advantage compared to offline: direct and completely undisturbed contact with the respective girl or boy to establish and exploit relationships. With the help of a smartphone, perpetrators are always directly connected to their victims. In case of sexual violence or sexual abuse this means that digital or analog sexual violence can no longer be separated. It is all interwoven.

The aforementioned ROBERT study (Quayle, Allegro, et al., 2012; Quayle, Jonsson, et al., 2012) found that chat rooms and instant messengers were the preferred platforms for sexual online groomers for communicating with minors and that there was often migration from one medium to another. The sex offenders interviewed also stated how important it is to have easy digital access to young people. Even if not all of those contacted reacted as desired, the sheer potential of the contacts alone is worthwhile: “It seems, however, that young people were targeted not only because of their profiles but also because of other observed weaknesses, including perceived poor relationships with parents and symptoms that could be considered depression” (Quayle, Allegro, et al., 2012, p. 73).

Case study “Anna”

The following case study aims at providing a more detailed understanding of the phenomenon of SOG from the perspective of the affected children. The case is about Anna (pseudonym) and her family who sought help and support with Innocence in Danger – Germany. This organization is part of an international network fighting against child sexual abuse, especially sexual exploitation through digital media. It develops a variety of educational and prevention programs for children, young people, parents, and professionals, and it is also active in the training and continuing education of teachers and professionals and conducts its own empirical studies. A key component of its work is crisis intervention in cases of sexualized violence involving digital media.

Background information

Anna is a 13-year-old girl. She has an older brother. Both children attend a private high school. Anna’s brother also spent a year abroad. Anna’s parents are both academics and work fulltime in finance. The family lives on the

outskirts of Berlin on their own property. The arts, music, and sports play an important role in their lives. In line with that, both children are being involved in extracurricular activities and lead busy lives. Anna plays music and does sports. At first sight she seems like a well-adjusted teenager, with a sharp intellect and great rhetoric. Digging a little deeper she relates how she was being bullied in school and felt like a total outsider. Anna's mother seems rigid and attaches great importance to her daughter's figure and emphasizes how much weight her daughter gained during the past couple of months. Anna's father is a soft-spoken man, emotionally supportive of his wife.

Anna's mother contacted Innocence in Danger on December 23rd in desperate need of support. She described in broad terms how her daughter had been sexually abused: The first contact that her daughter had with the man who sexually abused her was via a popular Massively Multiplayer Online Game (MMOG). Their online contact escalated quickly and resulted in severe sexual abuse (with oral, vaginal, and anal intercourse) twice at Anna's home in her room. Afterwards, Anna was looking for support and had already contacted various organizations. Anna's mother also reported that they had secured parts of the digital communication between her daughter and the offender. In this they required someone to help them make sense of what they had read and to keep their daughter safe over the next couple of weeks.

Anna's parents got a counselor for their daughter at a specialized counseling center concerning child sexual abuse. As they felt that they need more support they turned to Innocence in Danger for crisis intervention. Specifically, they were looking for emotional support for themselves and for support concerning the question of filing a criminal complaint. They were not yet decided and wanted to include Anna in their decision process. Above all, they asked for a moderated conversation with Anna to sort out details and bring them closer together.

Consultation – Anna's parents alone

On December 27th, both parents alone came to the office of Innocence in Danger to talk about their case in more detail. They brought and handed over the digitally secured chat between Anna and an adult man, Otto (pseudonym).

The parents reported how their daughter had met a young man online within an online game. At first, they said, he had been supportive of their daughter in the game. Helping her, praising her, and coaching her. Slowly, he had started chatting constantly using the in-game-chat and later had moved her to WhatsApp and “Line” to communicate more intimately. At that time, Anna was still 12 years old.

Anna and Otto had been in contact for months via messenger and telephone before he visited her at her home twice. Anna believed herself to be very much in love with the young man and had invited him to her house. The parents discovered the sexual abuse when they found a used condom in the trash. At first, they assumed it belonged to their son and confronted him about this sloppiness. Only when he vehemently denied having anything to do with the condom, they confronted Anna and learned about the adult man named Otto.

Immediately they took Anna’s phone and found parts of her chat with Otto on WhatsApp, which they secured by filming it. By doing so, they also read all the communication which shocked and traumatized them. They forbade Anna any further contact with Otto shortly before Christmas and – to be on the safe side – had also taken her smartphone. Both parents were highly agitated, angry, and helpless. Above all, they were very concerned about Anna’s safety as Otto had already been to their home and knew where Anna went to school.

The impression of the consultant was that Anna’s mother was carrying a traumatic life experience of her own. She was absolutely devastated by the perpetrator’s “break-in” into her safe home. She feared for Anna and at the same time was enormously angry with her daughter, who had invited the perpetrator home. During the discussions, it was important to explain the manipulative power of the perpetrator again and again and to make the mother aware that her child may be a smart aleck, but she is still inferior to a strategically acting online perpetrator. It quickly became clear that the mother needed special therapeutic support, which she gratefully accepted.

Anna’s father – also emotionally burdened – was the bridge between daughter and mother during the conflict-ridden time. He succeeded well in supporting both and was able to analyze the case rather rationally. How he is doing now after the verdict is beyond the counselors’ knowledge.

Consultation – Anna alone

Two days later, the then 13-year-old Anna and her parents came for another appointment. At first, Anna had the opportunity to speak privately to a consultant and talk freely and unaffected by her parents about the previous events.

Anna seemed relieved when her parents left. Asked if she could imagine talking about what she had experienced, Anna affirmed and said that she herself was quite at a loss as to how all this could have happened.

Anna reported that she started playing (the MMOG) during the summer of the same year and had met one of the players, Otto. He helped her a lot with the game, and so they communicated via different messenger services. At that time, she experienced a lot of emotional turbulence as she had been massively bullied in school and had felt sad and alone very often. She had enjoyed how attentive Otto had been towards her and that an already grown man was interested in her. Somehow, she had fallen for him, but in retrospect she reported that she was not so sure anymore whether she had been in love with him or with the idea of being in love with an adult.

Looking back, she felt extremely uncomfortable about how explicitly she had engaged in sexual conversations with him. To her, it felt like that had been her doing, but somehow at the same time she felt like this had nothing really to do with her at all. Anna described how she had felt flattered and seen, on the one hand, and disgusted at the same time. She felt connected to Otto, who actively supported her during the whole period in the game, and did not know how to fend off his sexual allusions. The sexual activities and penetrative intercourse had not been pleasurable to her in any way, even if she pretended otherwise when chatting with Otto afterward. On the contrary, she had been in pain. At the same time she felt like it had all happened to somebody else. This was the same dissociated feeling she had experienced during their conversation leading up to meeting in person. While she had been excited somehow, she felt pressured and uneasy at the same time. She simply had not known how to get out of any of it. To Anna, the whole experience seemed inevitable. Once the train started running, there was no stopping it. She felt incapable of talking to her parents or her brother. And she had not been able to turn to friends or other trusted adults as well.

Anna understood that her parents were worried and disappointed. She herself was also afraid that Otto could show up at school or at home to try and talk to her. She had no idea what he would do now that her

parents knew. Asked what form of support she needed, Anna said she was pleased with her counselor (from another child protection agency) but that she might have questions for the counselor in the event of criminal proceedings. Concerning the following conversation with her parents, she wished for support in reassuring her parents. She did not want to have any more contact with Otto. Her parents needn't worry that she would get back in touch with him again should they return her smartphone. On the contrary, she was relieved it was over now. Nevertheless, she stated that from her perspective smartphone can be used as a weapon. Therefore, she thought it is important to provide proper education about this danger.

Consultation – Anna and her parents

The consultation session alone with Anna (about 60 minutes) was then followed by a joint conversation with Anna, her parents, and a consultant of Innocence in Danger.

The focus of conversation was on finding binding agreements to guarantee Anna's safety, such as the way home from school, the use of social media, and with whom she interacted. It became clear how shaken all three of them were. The enormity of the abuse had rendered them all speechless in some way. Also, the possibility of filing criminal charges against Otto was discussed. The consultant advised the family to obtain specialized legal support for this decision to understand the course of criminal proceedings in advance and then to arrive at an informed decision. The family agreed to that, and a contact was handed over. Anna and her parents were able to work out some sort of contract concerning her smartphone use, how to get safely to and from school, the impending school trip, etc. It was agreed they would get back in touch if needed.

Analyzing the sexual online grooming process

Anna was twelve years old when she met Otto online within a gaming community. Through joint activities, they developed a relationship, which gained importance for Anna over some months. Both started chatting via WhatsApp when Anna was 13 years and three months old. At that point, the communication was already highly sexualized. Otto became increasingly explicit in expressing his sexual fantasies and preferences. Anna's answers

and interjections, some of which were also highly sexualized, read like an echo of his words. Due to her age, her cognitive immaturity, and sexual inexperience, she could not truly grasp what it means when Otto fantasized about “getting off in her hot ass” again and again. It is precisely this inexperience that Otto used to expand his sexual fantasies and to desensitize Anna systematically. Furthermore, he repeatedly implied that it was her who wanted this kind of communication and sexual interaction with him. He called her “hooker”, “bunny”, and “fuck girl”. Anna picked these terms up and repeated them. Also, she called him “stallion” once or twice. Otherwise, she chose words like “protector”, “sweetheart”, and “my life”.

It is crucial to bear in mind that communication took place daily and often throughout the day via chat and in time also by telephone. This highlights that smartphone offers offenders permanent unobserved access to their victims. The fact that Otto digitally interacted with Anna in such a highly sexualized way represents not only a preparation for the physical sexual abuse that will take place later but was already an act of sexual violence. A passage of the communication between Anna and Otto reads as follows:

ANNA: Did you dream anything... (unreadable)?

OTTO: Yes, but I'd instead write it to you tonight.

ANNA: Ahhh, something dirty. I dreamt how you played with our first child, I was pregnant, sitting on a chair watching.

OTTO: Yes, there was something hard this morning when I woke up. But your dream is more beautiful.

ANNA: Hihi, if I woke up next to you, I'd have taken care of him.

OTTO: Then I would have woken you up by rubbing the top of its head right against you.

ANNA: And then slipped into me.

OTTO: Blank into your wet hole :-*

ANNA: Nice and deep.

OTTO: Enough otherwise I massage him

OTTO: want to fuck you

ANNA: I want to ride you

OTTO: Then getting off deep into your pussy

Despite his continuous sexual manipulation over at least three months of their conversation, Anna clearly stated that she did not want to have sexual intercourse at their first meeting. Despite Otto's efforts to weaken her boundaries, Anna remained steadfast:

OTTO: Listen... I really don't know if I can keep my hands off you anymore. I have such a longing for you.

ANNA: You don't have to keep your hands off me, sweetie. I love you

ANNA: Only I don't want sex at the first real meeting.

OTTO: See if we both stick to it. I wouldn't think negatively of you; you don't have to worry about that.

ANNA: Thanks, 🙏. Nevertheless, I would like to avoid that

OTTO: I know. I just want you to know. Even if you came right at me right at the door, as we imagined. I'd just think you'd wish all the fantasies to be finally real. I love you more than anything, my dream girl.

OTTO: But I'll touch your ass 🍑

ANNA: Sure, 🍑. Let the fantasies (unreadable) come true (illegible). I love you, bunny. Forever and ever.

OTTO: Does licking count as sex :)

ANNA: Hihi, yeah

ANNA: So, sweetheart. I love you. See you later ❤️

OTTO: Too bad... I would love to taste you. See you in the afternoon. Love you

Further course

In March 2017 later I was contacted again by Anna's parents. They all had decided to press charges against Otto and had gotten in touch with the attorney recommended. They asked for support during their first meeting with the lawyer. The first meeting took place between Anna's parents, the attorney, and a counselor of Innocence in Danger. He explained different proceedings to them which they then took back to discuss with Anna. At this visit, it became apparent how deeply affected Anna's mother was by all of this. She was suffering from PTSD. The counselor recommended going to see a psychotherapist, which she gladly accepted.

In April 2017 later the family contacted Innocence in Danger, saying they had decided to go forward. They were hoping the counselor could accompany Anna to the attorney to make her first encounter easier on her. During this encounter, the attorney asked her in detail about what happened. On basis of her recollections and the chat communication at hand he filed the complaint directly with the public prosecutor's office.

In October 2018 the attorney got in touch with the counselor. The case was slowly moving forward at the court, but in the indictment the appoint-

ed female prosecutor deemed Anna complicit. He asked the counselor to write an expert opinion explaining the psychodynamics in a case like this.

In March 2021 the case was finally tried. By then Anna had turned 17 and was living a year abroad. The court summoned the counselor as an expert witness to establish Anna's psychological stress and possible long-term effects. The defendant was found guilty and sentenced to 3 years in prison and to damages for pain and suffering worth 10,000 Euro. The defendant appealed the verdict. The appeal hearing took place in June 2021 sending him to prison for 2,5 years and upholding the damages for pain and suffering.

Reflection and practical implications

The case of 13-year-old Anna depicts how easy it is for sexual offenders to contact children and adolescents digitally, to groom and sexually abuse them, and it highlights the dynamics and complexity of SOG. Furthermore, the case demonstrates the challenges that experienced sexual abuse implies for the entire family of the victim. Even though children and adolescents of the iGeneration endowed with digital media literacy with respect to usability functions, many do not recognize risks situation to which they are exposed using digital media. Accordingly, it is improper to assume that smart users automatically have a reflective ability and foresight in context of SOG. This assumption blurs the lines between responsibility and culpability even more. Something that everyone – especially prosecutors and courts, but also counselors and therapists – need to be aware of.

The fact that Anna responded in a sexualized way, sometimes seemingly approaching Otto in a sexualized manner on her initiative, is not to be seen as an invitation or consent to these sexual acts. Due to her age, her emotional and cognitive development, Anna was unable to assess the concrete consequences of her words. Due to being a victim of serious bullying at school, Anna had an increased demand for attention while being emotionally vulnerable to Otto's offer of commitment. Her emotional state and the nature of digital communication made it difficult for her to distinguish between a "good" and a "highly harmful" interaction with an unknown person or to perceive signals of imminent danger at an early stage. Even as the communication and then the meetings lead to painful experiences of abuse, Anna was not able to give up her relationship with Otto. It is precisely this ambivalence that many victims of childhood sexual

abuse describe (Independent Review Commission on the Review of Child Sexual Abuse, 2017, p. 34). The desire to maintain the positive parts of the relationship – recognition, affection – is so high that the negative aspects – abuse, exploitation of need – are accepted in order not to lose the person. Those affected do not intellectually weigh up the situation but act purely emotionally.

It is detrimental for counselors, therapists, law enforcement agents, district attorneys, and judges to understand the special dynamics of SOG. Digital media and communication channels are a good means for offenders to manipulate and, above all, to control their victims. Offenders make the most use of the direct digital connection to their victims. They search for victims digitally and/or use the media to intensify an existing contact. They build trust, use blackmail, and not infrequently threaten to disseminate intimate images or even depictions of abuse. In the process, the smartphone becomes their ultimate tool. With a smartphone, the offender can reach any child or adolescent at any time, directly and completely unobserved. No wonder that self-generated child sexual abuse material is on the rise (see Internet Watch Foundation, 2022).

Likewise, it is enormously important to consider the burden on parents and to install support here. In all cases where Innocence in Danger has been asked for help so far, the parents had – mostly – read the harmful chat communication between offender and victim in full. Accordingly, these parents are also highly stressed. They swing back and forth between disbelief, fear, traumatization through words and images, anger, powerlessness, anger at their child, anger at the perpetrator, etc. Therefore, it is important that caregivers are stabilized and receive treatment if necessary.

For the family, the final verdict was an important conclusion after five long years of waiting. Anna has now graduated from high school and is studying abroad. In order to reduce the likelihood of being sexually victimized in digital media, it seems important to raise awareness among minors, parents, and educators for risk situations (Calvete et al., 2021). In this context, several online safety websites have emerged in recent years, providing minors, their caregivers, and educators with safety information and messages and offering educational programs (Davidson et al., 2009). In general, it is recommended that parents, educators, and other caregivers have open conversations with children and adolescents about specific online risks to help them identify dangerous situations and to signal support in the event of sexual abuse – without condemning them for previous

behaviors in the SOG process (for recommendations and an overview of parental and educational handouts, see Wurtele & Kenny, 2016).

Ethical approval

This case study has been conducted in strict adherence to established ethical guidelines for scientific research. The ethical considerations and principles governing this research align with recognized standards and regulations to ensure the welfare and rights of all participants involved (informed consent, anonymity/ pseudonymity and confidentiality, voluntary participation, beneficence and non-maleficence, transparent communication).

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2.2 Victim's Individual Risk Factors and Vulnerabilities to Sexual Online Grooming

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Grooming involves a set of actions, ranging from flattery to intimidation, by an individual in order to gain access to another individual. Research has identified a number of risk factors that make an individual more vulnerable to this process. These include: age, gender, disability, socioeconomic status, personality and personal traits, risky and sexual behaviour, offline vulnerability, time spent online. These risk factors are explored in detail in the chapter below with particular emphasis on sexual online grooming.

Keywords: sexual online grooming, risk factors, vulnerability, victims, review

Introduction

Grooming has been defined in the UK by the National Society for the Prevention of Cruelty to Children (NSPCC) as: “when someone builds an emotional connection with a child to gain their trust for the purposes of sexual abuse, sexual exploitation or trafficking. Children and young people can be groomed online or face-to-face, by a stranger or by someone they know – for example a family member, friend or professional. Groomers may be male or female. They could be any age. Many children and young people don’t understand that they have been groomed or that what has happened is abuse” (Reeves et al., 2017).

Grooming involves a specific set of steps that an offender employs with the ultimate goal being gaining access to the individual (Black et al., 2015). Offenders will use a variety of strategies ranging from flattery to intimidation in order to achieve their goal. In order to understand offending behaviour, research on criminal narratives has had some success across other crime types (Ioannou et al., 2015; Ioannou et al., 2015; Ioannou, et al., 2017; Yaneva et al., 2018; Ioannou et al., 2018; Ioannou et al., 2018). This approach, specifically examining the “victim roles model”, which differentiates between offending styles through the premise that all sexual and violent crimes are an interpersonal transaction between the offender and victim, was applied to grooming characteristics of 103 victims targeted

online and offline (Ioannou et al., 2018). The research found support for the model and in general consistency across both groups for grooming characteristics where victims were assigned the role of vehicle, person or object. The role that the offender assigns to the victim is expressed through the control or characteristics of the transaction during the offence commission.

Research conducted by the Office of Communications in the UK (OF-COM, 2016), examining the nature of access and use of the Internet among a national sample of children aged five to 15, showed that the vast majority of children use the Internet, with over 88% having access to the Internet at home. Furthermore, the average 16- to 24-year-old spends just under nine hours a day with online media and communications. The increased use of the Internet has generated a virtual platform for sexual online grooming (SOG) and has afforded many opportunities to sexual offenders (McManus et al., 2016). The risk of SOG has increased with the increased access of young people to the Internet and social network sites (SNS; Schoeps et al., 2020) and with the rise of messaging apps like 'WhatsApp' and image sharing apps, like Snapchat and Instagram, adding the fact that it is socially acceptable for individuals to form friendly and intimate relationships with strangers online (Visser et al., 2013). It becomes apparent that many young people may be unknowingly forming bonds and sharing personal information with individuals whose goal is to exploit them sexually (Lenhart et al., 2010). Even as far back as 2001, research showed that approximately one in five youth were being solicited for sex online annually (Mitchell et al., 2001). In 2010, there were more than 700,000 registered online sex offenders in the United States alone (Black et al., 2015). In Europe, around 15% of adolescents indicated to have received a sexual message online (Livingstone et al., 2011). Whittle et al. (2014) found that 33% of 354 13- and 14-year-olds reported having been approached sexually online. As such, online activities, such as sexting, grooming, distribution of sexual imagery, child sexual abuse and so on, have become a serious concern for parents, teachers, and mental health professionals (Graciela et al., 2015) especially as the impact on a young person's cognitive, emotional, academic, and psychological development can be severe (Young & Widom, 2014).

Risk factors and vulnerabilities

Predators will always seek out the easiest prey (Pinizzotto & Davis, 1999). Research has extensively demonstrated that there are specific risk factors and vulnerabilities that may determine individuals' risk and harm online (Dixon et al., 2009) and has concluded that vulnerability to abuse is due to a complex interplay of multiple risk factors (Whittle et al., 2013). Although most young people are resilient online (Webster et al., 2012), there is a proportion that are vulnerable, and this vulnerability is exploited by offenders when they select their victims. However, offenders do not agree on what vulnerability is necessary, as it may be understood in terms of gender, personality, sexual orientation, and so on (Sullivan, 2009). Talking about sex online, appearing needy or submissive or using sexualized usernames have been found to be important factors in the SOG process and have an impact on the decision-making of a groomer. Furthermore, groomers claimed that they were seeking for young people whose profiles were revealing certain information, including images (Quayle et al., 2012).

Whittle and colleagues (2013) argue that any child could be vulnerable to seduction by any adult online, by simply being accessible to potential online offenders. Not all children are at risk of online sexual abuse, as argued by Livingstone et al. (2013): "the identification of online risk does not imply that harm will follow, nor that all users are equally affected; rather, it is a probabilistic judgment regarding an outcome that depends on the particular and contingent interaction between user and environment" (p. 3). Such risk factors include both personal individual characteristics (such as age, gender, personality) and behavioural and situational characteristics (such as risky and sexual behaviour, amount of time someone spends online). The risk factors that have mainly been researched and been associated with SOG victimization are detailed below.

Age

Most research findings point towards adolescence being the period where children and young people are more at risk of being targeted for SOG (Bebbington et al., 2011; Quayle et al., 2012). Specifically, the most common victims of SOG have been found to be adolescents aged 13–17 years (Katz, 2013). A number of explanations have been put forward for why this may be the case, with the most obvious being level and intensity of communication

as well as variety of access for adolescents (Livingstone et al., 2011). Another explanation is concerned with the fact that adolescence is a key developmental stage during which young people seek relationships, experiment sexually (Quayle et al., 2012), seek attention, validation, and acceptance (Dombrowski et al., 2004), take risks, and are impulsive (Pharo et al., 2011), which all may influence their online behaviour and make them vulnerable to SOG.

Gender

While boys use the Internet more than girls (Livingstone et al., 2011a), research has shown that girls are at a greater risk of being targeted online by groomers than boys (Bra, 2007; Baumgartner et al., 2010; Helweg-Larsen et al., 2011; Wolak et al., 2008). It has been found that 66% of girls and 34% of boys who used the Internet had been targeted for SOG (Finkelhor et al., 2000). Livingstone and Palmer (2012) found that the most common child victim of SOG was girls between the age of 13 and 14. When examining the reported data for SOG, Wolak and colleagues (2004) found that only 25% of children targeted online were male. Mitchell and colleagues (2011) showed that 82% of victims of Internet-initiated child sexual exploitation were females. This study though focused on the commercial exploitation of children, which may exclude cases involving boys and young men (Sunde, 2018), as female victims are found to be more common in commercial exploitation (Mitchell et al., 2011; Whittle et al., 2013).

However, Whittle and colleagues (2013) argue that despite the fact that females are more likely to be targeted online, males spend more time online, therefore increasing the likelihood of being targeted (Livingstone et al., 2011). Most of the findings above are based on self-reports, and it may be the case that males are less likely to report victimization due to a number of factors such as masculinity and societal stereotyping and stigma (O'Leary & Barber, 2008; Sunde, 2018). It has therefore been suggested that SOG of males is grossly under-reported (Aitken et al., 2018), especially when males are targeted in chat rooms catering for homosexual males making them more vulnerable due to the possible additional stigma attached to homosexuality (Teliti, 2015) as well as more likely to be exploited by offenders due to their possible sexual confusion and insecurities (Whittle et al., 2013; Wolak et al., 2004). A study found self-reported bisexuality or homosexuality to be the strongest risk factor in determining whether a

boy or a girl will be approached online for sexual purposes (Suseg et al., 2008, cited in Whittle et al., 2013). Males, in general, find it difficult to comprehend that they are also at risk of becoming victims of online sexual abuse (Davidson & Martellozzo, 2012). Some of the children that took part in the Child Exploitation and Online Protection Centre (CEOP) research believe that girls are more at risk than boys, and therefore boys behave with greater disinhibition when online (Davidson & Martellozzo, 2012).

Disability

Although research has shown an association between disability and vulnerability to SOG (Brunnberg et al., 2012), studies have shown conflicting results in terms of Internet use by disabled and non-disabled young people. On the one hand, it has been reported that young people with disabilities may be using the Internet slightly less than their non-disabled peers (Livingstone & Bober, 2005), and on the other a study comparing physically disabled young people with non-disabled reported very similar levels and type of Internet use between the two groups (Lathouwers et al., 2009). Livingstone et al. (2011) found that 6% of their participants had a mental, physical, or other disability and reported that the vulnerability of disabled young people to SOG is mainly due to their association with meeting these online contacts in the real world and the fact that their ability to cope with the online environment is reduced as are the chances that they will confide to someone if they think something does not seem right online. Another explanation for disabled young people being vulnerable to SOG is the fact that they trust unfamiliar adults at a greater extent in relation to their non-disabled peers (Whittle et al., 2013) and may be less cautious allowing online groomers to persuade them that they are trustful (Sorenson & Bodanovskaya, 2012).

Socioeconomic status

The relationship between socioeconomic status and vulnerability to SOG is controversial. Some researchers have implied that youths from higher socioeconomic status are more likely to receive sexual approaches online due to the fact that they are more likely to have Internet access at home as well as devices that enable the access to the Internet (Soo & Bodanovskaya,

2012). As such they have more opportunities to engage with individuals online and their potential for risk increases (Livingstone & Haddon, 2009). It has also been reported that due to their more extended contact and range of individuals they know they are vulnerable to online sexual solicitation (Livingstone et al., 2011). The same authors also reported that young people from low socioeconomic status are less likely to come across risks, but when they do, they feel more upset by them, contrary to those with higher socioeconomic status, who are more resilient. In contrast to previous research, Suseg and colleagues (2008) found that young people with financial difficulties were more likely to experience online sexual solicitations than young people with no financial difficulties. Finally, research has found that young people whose parents are well-educated are less likely to be victims of online grooming (Mitchell et al., 2007a, 2007b).

Personality and personal traits

Research has shown that a young person's offline social-psychological characteristics influence how they interact with others (Livingstone & Helsper, 2007), therefore potentially making them more vulnerable to SOG and to groomers who look for targets. A number of personality and personal traits have been associated with the risk of SOG victimization. Low self-esteem, susceptibility to persuasion, emotional disturbances, and psychological disorders have all been associated with at risk individuals of SOG (Soo & Bodanovskaya, 2012; Webster et al., 2012).

Livingstone and colleagues (2011) found that young people with psychological problems encounter more risks online and are more affected by the negative experience. Mental health problems are consistently associated with vulnerability to SOG (De Graaf & Vanwesenbeeck, 2006; Wolak et al., 2008). This can be explained by the fact that, for example, those young people with depression evidence use chat rooms and access the Internet longer (Sun et al., 2005). Therefore their vulnerability towards SOG is increased.

In regards to specific personality traits the following have been studied extensively in relation to child sexual abuse. Results showed that childhood sexual abuse was associated with personalities involving sensation seeking, unique hobbies, and non-conformity (Pickering et al., 2004). Contrary to this finding, research has found that offenders prefer quiet, withdrawn children (Conte et al., 1989) as opposed to extraverted, sensation-seeking

young people (Whittle et al., 2013). Olson and colleagues (2007) propose that personality traits are a key category of risk that makes a young person vulnerable to SOG. These personality traits include low self-esteem and low self-confidence.

Furthermore, seeking attention, affection, and empathy from an adult, especially if children do not fulfil these needs at home, may make them more vulnerable (Lanning, 2005). In addition, emotional loneliness can be exploited by groomers (Webster et al., 2012). Lonely individuals lack resilience in the face of negative events (Whittle et al., 2013) and are more likely to have few friends and face problems with social interactions, therefore increasing their vulnerability (Wells & Mitchell, 2008). In order to compensate for their problems with social interactions, lonely or shy individuals use chat rooms more frequently to communicate with others (Peter et al., 2005), and this puts them at risk of SOG (Wolak et al., 2008). As far as introversion is concerned, related research on social anxiety has shown that socially anxious adolescents communicate online more often with strangers (Gross et al., 2002). Because the Internet offers anonymity as well as less auditory and visual cues, it allows introverted individuals to overcome social inhibitions more easily than in face-to-face communication (McKenna & Bargh, 2000). This might be associated with the assumption that the introverted adolescents may, compared to extraverted adolescents, more often talk with strangers on the Internet.

Research has also shown that bullies may be at higher risk of falling victim to SOG (Wachs et al., 2015). The explanation for this may be that bullies report to start dating earlier, appear to be highly relationship-oriented and report more advanced pubertal development (Connolly et al., 2000). In addition, they tend to talk with strangers about sexual topics and are more willing to have sexual contacts and form relationships online (Wachs et al., 2015), all this being elements that favour the frequently applied strategy of online groomers who build rapport with their victims prior to sexual abuse (Whittle et al., 2013).

Risky and sexual behaviour

The Internet influences the manner in which people communicate and develop relationships (Jiang & Hancock, 2013). Because it offers anonymity, it can lead to both offenders and victims feeling less inhibited and cautious about sharing personal information. Anonymity also may result in individ-

uals becoming more intimate in a shorter time period (McKenna & Bargh, 2000) and revealing a lot of personal details about themselves to complete strangers (Jiang et al., 2011). Anonymity may also increase risk taking and sexual behaviour. Risk takers are more vulnerable to SOG through their risk-taking behaviour (Webster et al., 2012). Ybarra et al. (2007) identified a number of online risky behaviours that make young people susceptible to online victimization. Risk taking is also associated with low life satisfaction, which has been linked to victimization (Martin et al., 2008).

Recent studies have linked SOG with sexting (de Santisteban & Gamez-Guadix, 2018). Sexting has been defined as sharing sexually suggestive content (i.e., sexts) via Internet or smartphone (Morelli et al., 2020). According to the findings of previous studies, 10% of adolescents have sometimes sent material with sexual or intimate content to people whom they had met on Internet but not in person (Machimbarrena et al., 2018). Sexting has been associated with general victimization in relationships (Wood et al., 2015) as well as multiple online victimizations (Montiel et al., 2016) including their picture captured by pornographic networks (Ioannou et al., 2018). The relationship between sexting and SOG has been established in research as it has been shown that the more young people engage in sexting, the greater the risk of SOG (Gámez-Guadix & Mateos-Pérez, 2019).

In a study that examined polyvictimization, five possible adolescent risks in the digital media (cyberbullying victimization, cyber dating abuse victimization, sexting, online grooming, and problematic Internet use) and their relationship were explored (Machimbarrena et al., 2018) as research has shown that victimization in one context can make youth vulnerable to other types of victimization and thus extend their victim status over time. According to the “polyvictimization theory” (Finkelhor et al., 2007), victimization often does not occur in isolation but is frequently followed by other forms of abuse. In this study a relationship was found between cyberbullying and grooming victimization as well as SOG and sexting. A profile of sexual risk emerged from the study, which demonstrated a relationship between sexting and SOG.

One factor that relates to sexting is disinhibited personality, which involves different behavioural traits such as sensation seeking and impulsivity (Schoeps et al., 2020). Those individuals who seek sensation have a need for new and varied situations and are very impulsive and generally careless (Zuckerman, 2007). Adolescents with disinhibited traits use SNS to socialize and post various photos at a regular frequency, with no control and unaware of the impact and risks (Schoeps et al., 2020). This impulsivity

and carelessness come from a desire to connect, enter SNS, and go through other people's profiles all at a very fast pace. Research has shown that those young people who engage and seek high risk activities are also engaged in sexting (Delevi & Weisskirch, 2013). When mediated by erotic or pornographic sexting, such risk behaviors, especially disinhibition, increase the probability of being a victim of SOG. Exhibitionist behaviors have been therefore considered as elicitors of SOG (Peris, 2017, cited in Schoeps et al., 2020). Stanley and colleagues (2016) report that disinhibited adolescents use SNS daringly, clicking and sending erotic pictures without any kind of cognitive or emotional regulation regarding the consequences. Similar results were found by Delevi and Weisskirch (2013), affirming that disinhibited teenagers are impulsive and perform more sexting behaviour.

It is concluded then that disinhibited personality may therefore be linked to sexting and grooming (Peris, 2017). In another study it was found that disinhibition is indirectly associated with SOG through erotic sexting and direct sexual initiation strategies (Schoeps et al., 2020). Body self-esteem, disinhibition as well as sexting are factors that have an important impact on SOG (Cruz & Soriano, 2014). Furthermore, disinhibited adolescents who use direct and coercive sexual strategies and more often engage in pornographic sexting (involves publishing photographs with total or partial nudity) are more likely to suffer from SOG (Wachs et al., 2012).

Offline vulnerability

Children who are 'vulnerable' and risk-takers offline are more likely to be susceptible to SOG (Martellozzo & Jane, 2017). A number of risk factors that have been identified to increase someone's vulnerability to offline abuse have also been identified for SOG (Livingstone, 2010). For example, a history of past child sexual abuse is considered a risk factor for SOG victimization (Wolak et al., 2008), and those who have been abused offline appear to be more vulnerable to SOG. Mitchell and colleagues (2011) found in their study that 96% of participants who reported SOG by any individual also reported offline sexual victimization by any individual within the same period. Not everybody who has been a victim of SOG, though, is also a victim of offline sexual abuse, as for some young people the online environment and the anonymity it offers may transform their personality, and they behave in a disinhibited way they wouldn't do offline, thus making them more vulnerable.

Time spent online

Research reports that young people who access the Internet frequently have an increased likelihood of experiencing SOG (Baumgartner et al., 2010). Rice et al. (2012) found that American adolescents with daily access to the Internet through a mobile phone are more likely to report being solicited for online sex, being sexually active, and having sex with partners that they met online. Nonetheless, high levels of access alone are not a necessary, or sufficient, cause of SOG. Research has shown that, if adolescents engage in long chat sessions, they tend to talk with strangers on the Internet more often (Peter, Valkenburg & Schouten, 2006). Motives of entertainment, meeting new people, and social compensation increased adolescents' online communication with strangers. Chat rooms are particularly favoured by groomers with up to 76% of initial encounters taking place there (Wolak et al., 2004). After the initial approach through a chat room, offenders will try to switch to instant messaging in order to establish more privacy and decrease the risk of detection. Therefore, the more time spent in chat rooms, the more likely it is for a young person to be victimized.

Conclusion

The current chapter has reviewed the literature in order to identify those individual factors and vulnerabilities that make a child or adolescent susceptible to SOG. As research has shown, a single risk factor is not sufficient to result in SOG. The relationship is complicated and the factors interconnected (Soo & Bodanovskaya, 2012), and each one may reduce a young person's resilience and make them vulnerable to online groomers. In summary, adolescents, females, those who question their sexuality (both males and females), those with a disability, who spend more time frequently online, who are risk-takers, engage in sexting, have low self-esteem, are lonely, seek attention, exhibit disinhibited personality and various psychological problems as well as mental health problems are more vulnerable to SOG. However, findings should be interpreted with caution due to the limited volume of research. While research has shown that there are a wide range of risk factors and vulnerabilities associated with SOG, it should be noted that they are not necessarily direct causes in themselves: "A major problem of the risk factor paradigm is to determine which risk factors are causes and which are merely markers or correlated with causes" (Farrington,

2000). This means that risk factors are correlational, not causational, and correlation does not prove causation.

In addition to the above observations, it has to be noted that offenders may not always be looking for vulnerabilities online. For example, in 2018 the Child Exploitation and Online Protection Command (CEOP; cited in Whittle et al., 2013) reports that, when their investigators create fake online profiles of young people in order to entice offenders, these profiles do not conform to any assumptions of a vulnerable individual. They found that offenders approach these fake profiles and attempt to sexually groom what they think is a young person without vulnerabilities being obvious from the profile. Therefore, it may be the case that offenders or a proportion of offenders just target everyone who is available online without having any victim selection strategy, attempting to sexually groom anyone who is online. Nevertheless: "It is likely though that only the vulnerable respond, while the resilient remain unaffected" (Whittle et al., 2013, p. 142).

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2.3 Online Sexual Experiences of German Adolescents – Results from the Community-Based MiKADO Project

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The Internet has affected how young people experience sexuality nowadays. Even though this development might have positive effects, it also increases the risk of victimization. For the purpose of providing an overview of online sexual interactions of German adolescents, results of a cross-sectional online survey undertaken as a sub-survey in the context of the multicentric research project MiKADO are presented in this chapter. We analyzed data of 2,207 adolescent Internet users (14–17 years old), which were representative for the German population concerning gender and education. The data demonstrated that nearly a third of the surveyed girls and boys (29%, $n = 634$) experienced at least one online sexual interaction within the last year prior to the investigation. Approximately a half of them (51.7%, $n = 328$) did not know the online contacts with whom they engaged in sexual activities at all. Into the bargain, a quarter of all adolescents (24.6%, $n = 543$) reported meeting someone whom they only knew online also in real life; every tenth of such meetings included sexual interactions. Given the fact that there is the risk of victimization on the Internet, our findings clearly underline the need for prevention measures.

Keywords: online sexual solicitation, sexual victimization, sexual experience, adolescent

Introduction

Internet and Sexuality

The currently unlimited access to the Internet has affected how young people experience sexuality. They can gain any information about sexual health and sexual practices, flirt and attract the attention of others, search for pornographic material, engage in sexting or cybersex, experiment with their own sexuality or interact with other people without having to be afraid of social rejection (Ballester-Arnal et al., 2016; A. Cooper et al., 2000; Mitchell et al., 2013). Therefore, sexual interactions on the Internet became a substantial part of the usual sexual development of young people.

Problematic online sexual interactions

Some studies have looked into the consequences of young people's Internet use for sexual purposes and found evidence for positive effects such as recreation, acceptance of sexual minorities and enhanced sexual knowledge (Ballester-Arnal et al., 2016; Hesse & Pedersen, 2017; Hill, 2011; Martyniuk et al., 2013; Rasmussen et al., 2016). However, this increases the risk of victimization of young people too (Guan & Subrahmanyam, 2009). Problematic online sexual interactions which have received substantial scientific interest are an unwanted exposure to the mainstream, violent and/or paraphilia-related pornographic material, online sexual solicitation, sexting and sexual online grooming (SOG; Cameron et al., 2005; Chang et al., 2016; Jones et al., 2012; Livingstone et al., 2011; Madden et al., 2013; Ospina et al., 2010; Owens et al., 2012; Wolak et al., 2006; Ybarra et al., 2007). Even though sexual interactions are common between acquainted peers (Madigan et al., 2018; Mori et al., 2020), they also often occur between individuals who know each other exclusively online (Sklendarova et al., 2018; Warner & Bartels, 2015). This increases the risk for adolescents and children to interact with adults who pretend to be minors and aim for SOG and online sexual solicitation which results in child sexual abuse (Seto et al., 2012).

Choosing an accurate definition

A common problem in estimating prevalence rates of different (problematic) online sexual interactions seems to be the inconsistency of the used definitions. *Sexting* for example usually refers to the production and distribution of images and/or text messages with sexual or erotic content (Ahern & Mechling, 2013; K. Cooper et al., 2016; Dake et al., 2012; Galovan et al., 2018; Houck et al., 2014; Temple et al., 2014). Some authors additionally limit their definition to self-generated materials (Döring, 2012) or specify the relation between the individuals who have exchanged messages (Stanley et al., 2018). *Online sexual solicitation* has been defined by Wolak and colleagues (2006) as “requests to engage in sexual activities or sexual talk or give personal information that were unwanted or, whether wanted or not, were made by an adult” (p. 18). Later, the term of *unwanted* online sexual solicitation has been defined by Ybarra and colleagues (2007) as “the act of encouraging someone to talk about sex, to do something sexual, or to share personal sexual information even when that person does not want to” (p. 32). Thus, any online sexual interaction, provided that one

party does not want to be involved, can be considered as an online sexual solicitation or, once it takes place between an adult and a minor, as online sexual abuse. Sexual conversation, exchanging sexual or erotic pictures or engaging in cybersex counts as typical interactions for online sexual solicitation (Bergen et al., 2014; Mitchell et al., 2013; Schulz et al., 2016; Sklenarova et al., 2018b). Online sexual solicitation can also become the antecedent of an offline meeting including sexual activities and can even result in sexual abuse (Dombrowski et al., 2004; Finkelhor et al., 2000; Wolak et al., 2010). In contrast to online sexual solicitation, SOG puts emphasis on the relationship between the offender and the victim and is therefore defined as “establishing a trust-based relationship between minors and usually adults using information and communication technologies to systematically solicit and exploit the minors for sexual purposes” (Wachs et al., 2012, p. 628). It is seen as a goal-driven non-linear process which involves a variety of online behaviors such as, among others, relationship formation, establishing exclusivity as well as sexual conversation, and sending sexually explicit material, up to sexual interaction online or in real life (Berson, 2003). Some offenders of SOG exclusively aim to collect (sexual) pictures, others strive for further kinds of sexual interaction (Webster et al., 2012). In addition to this, it is important to note that, despite it being defined as either sexting, online sexual solicitation or SOG, legal definitions of the age of consent, age of criminal responsibility and child sexual abuse vary considerably among jurisdiction of the European countries. Furthermore, only few legislations address online sexual solicitation explicitly (Davidson et al., 2011).

In summary, online sexual interactions comprise different concepts with an obvious overlap between the definitions of sexting, online sexual solicitation and SOG. The concept of SOG entails not only non-sexual behaviors but also behaviors considered sexual, which are equally included in the definition of sexting and online sexual solicitation. Therefore, the interpretations and comparisons of study results among studies focusing on online sexual interactions call for carefulness (Ainsaar & Lööf, 2011; Bennett & O'Donohue, 2014; Gillespie, 2002; Ospina et al., 2010; Wachs et al., 2012).

Voluntary nature

Most of the research on online sexual interactions has focused on unwanted sexual experiences and ignored those that appeared to have happened

under consent (Finkelhor et al., 2000; Jones et al., 2012; Ospina et al., 2010; Wolak et al., 2006; Ybarra et al., 2004). Quayle (2017) has found evidence that most adolescents engage in online sexual activities willingly. This seems to be a very complex problem, because an initially consent-related sexual interaction which appears to happen voluntarily may later turn out as a distressing sexual experience (Green & Masson, 2002) which affects the victims substantially. Moreover, the sequelae for victims of child sexual abuse have been shown to include substance misuse, risky sexual behavior, post-traumatic stress disorder or self-harm behaviors (Andrews et al., 2000; Gilbert et al., 2009; Yates et al., 2008). In summary, Internet sexual interactions can have, besides their positive effects on young peoples' sexuality, also considerable negative consequences. While the research body on this topic grew in the last century, there are still substantial inconsistencies in definitions for certain phenomena such as sexting, online sexual solicitation and SOG as well as concerning legal definitions of the age of consent and the age of criminal responsibility.

The present study

This chapter provides a brief overview of the findings of the adolescent survey, which is a sub-survey of the multicentric research project MiKADO, that addressed frequency, etiological models and consequences of child sexual abuse. The project was funded by the German Federal Ministry of Family Affairs, Senior Citizens, Women and Youth (MIKADO; Osterheider et al., 2012). The data on the online sexual behavior of German individuals were collected between the years 2013 and 2014 and the results were published in several peer-reviewed journals so far (e.g., Bergen et al., 2014; Dombert et al., 2016; Schulz et al., 2016; Sklenarova et al., 2018). Additional analyses of the MiKADO data were conducted in 2018 (Neutze et al., 2018) and funded by the federal government office of the Independent Commissioner for Child Sexual Abuse Issues.

Method

Procedure

For the adolescent survey of MiKADO, 17,107 girls and boys were sampled and asked to participate via German institutes Panelbiz, Respondi and

LineQuest (see Sklenarova et al., 2018), of whom 3,308 have actually participated in the study. The overall response rate was 19.3%.

As explicit descriptions of sexual behavior were suggested to increase feelings of shame and guilt and as explicit confrontation of minors with sexual topics to some adults was problematic, we have taken actions that were necessary to protect the young participants: (1) Anonymity and voluntariness were guaranteed. All answer formats were given, and participants did not have to reveal their names; in addition, the server used for the online-survey guaranteed compliance with data protection. (2) Information on offers of help were given to all participants repeatedly throughout the survey. In case an adolescent reported a stressful experience, a pop-up window opened immediately and informed about offers of help by specialized advice centers. Alternatively, adolescents could use an anonymous contact form to contact employees of the MiKADO project.

Participants

The subjects of the MiKADO project consisted of German individuals aged between 14 and 80 years, subdivided into several different subsamples and sub-surveys. The results of our contribution to this book are based on the community-based sample of German adolescents (14–17 years).

In total, 1,101 of the 3,308 participants had to be excluded from further analyses because of missing information about their Internet use, the overall higher percentage of missing data, questionable quality of the data or double participation. The final sample included in the data analyses consisted of 2,207 adolescent Internet users (14–17 years, $n = 1,196$ girls and $n = 1,011$ boys) and was representative for the German population concerning gender and education. Regarding the confrontation with pornographic contents within the last year, data from 2,116 adolescents (14–17 years, $n = 1,161$ girls and $n = 955$ boys) were analyzed ($n = 1,192$ excluded).

Measures

The data regarding online sexual behavior were collected via online questionnaires in a cross-sectional study design. As mentioned above, it is difficult to differentiate whether a certain online interaction (e.g., online sexual conversation) is “limited” to online sexual solicitation or if there

was a gradual transition from SOG or online sexual solicitation to offline sexual abuse. To avoid this definition-related problem, we decided to report different online sexual interaction frequencies in a descriptive manner, without assigning them to pre-defined phenomena such as (unwanted) online sexual solicitation, sexting or SOG.

For the purpose of the survey, engaging in one or more of the following online sexual interactions within one year prior to the participation was questioned: any conversation about sexual topics, any exchange of commercially generated pornographic images or records, any exchange of self-generated nude, erotic and/or sexual images, engagement in cybersex, and offline-meeting either including or not including sexual activities.

Conversations about sexual topics were defined as a description of physical appearance, sexual needs, fantasies, activities or pornographic contents. Pornographic material was defined as records or images that depicted sexual activity between at least two individuals (vaginal, oral or anal penetration) and/or focused on the explicit display of genitalia or masturbation of a single person and/or other particular sexual methods (e.g., fetishes, bondage, rape or sex with animals). Cybersex was specified as engaging in virtual sexual activity, for instance masturbating in front of a webcam.

Furthermore, we wanted to avoid the restriction by only focusing on the “unwanted” approach and legally defined delinquent interactions. Therefore, none of the surveyed online sexual interactions was limited to unwanted experiences or experiences between minors and adults. Instead, gender and age of the online contacts with whom the adolescents engaged in sexual interactions were assessed. The age was categorized according to the German age of consent (14 years) and age of legal majority (18 years) into three age-related groups: child (≤ 13 years), adolescent = peer (14–17 years) and adult (≥ 18 years). We addressed the voluntary nature by asking about each interaction whether it happened voluntarily = wanted (e.g., “I asked for those images”), involuntarily = unwanted (e.g., “The other person sent me those images without me requesting them”) or of both kinds (e.g., “Sometimes I received those pictures unasked, sometimes I asked for them”). Additionally, it was surveyed whether the adolescents knew their online contacts before only online, both online and in real life or not at all. Also, the subjective emotional evaluation of each online experience on a 5-point Likert scale ranging from 1 = “very disagreeable” to 5 = “very agreeable” and the reaction to the interaction (cancelling the contact or keeping in touch) were assessed for each experience.

For two interactions, online sex and meeting offline, additional questions were included in the survey, namely the reasons for engaging in those behavioral activities, such as receiving presents, falling in love, being threatened and – in addition to meeting offline – having interests and hobbies in common or the intention to have sex.

Results and discussion

Online sexual interactions of German adolescents

The results showed that 28.7% ($n = 634$) of the surveyed girls and boys experienced at least one online sexual interaction within the last year prior to the survey, independent of whether they happened wanted or unwanted, among peers or between adults and minors. Of these online sexual interactions, 13.7% ($n = 87$) happened exclusively unwanted and 3% ($n = 19$) exclusively wanted. The remaining interactions were characterized by an ambivalent perception of the online sexual interaction. Approximately half of the adolescents (51.7%, $n = 328$) were meeting in real life with the unacquainted online contacts and engaged with them in sexual activities.

Online sexual conversation

Online sexual conversation was the most frequently reported online sexual interaction: 24.7% ($n = 545$) of the assessed German girls and boys engaged in such a conversation at least once within the year prior to the investigation. Of these interactions, 6.4%, ($n = 35$) were perceived as burdening. Overall, 9.5% ($n = 52$) of the adolescents cancelled the contact after the initial interaction. As the reason for that, 53.8% ($n = 28$) of them reported their awareness of the dangerousness of such interactions. Table 1 shows the characteristics of online sexual conversation with respect to age and gender of the online contacts, acquaintance to the online contacts and the nature of the interaction (wanted vs. unwanted).

Table 1: Characteristics of online sexual conversation reported by $n = 545$ adolescents

		<i>n</i>	%
Age of the online contacts	adult	109	20.0
	peer	293	53.8
	child	2	0.4
	mixed	141	25.8
Gender of the online contacts	female	171	31.4
	male	212	38.9
	both	162	29.7
Acquaintance to the online contacts in real life	yes	324	59.4
	no	221	40.6
Nature of the interaction	wanted	76	13.9
	unwanted	31	5.7
	both	438	80.4

Exchanging nude and erotic images

Furthermore, we have found that 8.4% ($n = 186$) of German girls and boys received erotic or nude images within the year prior to the investigation. Of these interactions, 8.1% ($n = 15$) were perceived as burdening. Overall, 8.6% ($n = 16$) adolescents cancelled the contact after receiving such images. Being asked about the reason, 18.8% ($n = 3$ girls) of them reported cancelling the contact because of their awareness of the dangerousness of such online interactions. German adolescents also reported having sent nude or erotic images of themselves to others (6.2%, $n = 137$). Table 2 shows the characteristics of receiving and sending nude and erotic images with respect to age and gender of the online contacts, acquaintance to the online contacts and the nature of the interactions (wanted vs. unwanted).

Table 2: Characteristics of receiving and sending nude or erotic images reported by $n = 186$ and $n = 137$ adolescents respectively

		Receiving nude or erotic images $n = 186$		Sending nude or erotic images $n = 137$	
		n	%	n	%
Age of the online contacts	adult	39	21.0	41	29.9
	peer	87	46.8	61	44.5
	child	0	0	0	0
	mixed	60	32.2	35	25.6
Gender of the online contacts	female	55	29.6	36	26.3
	male	64	34.4	65	47.4
	both	67	36.0	36	26.3
Acquaintance to the online contacts in real life	yes	107	57.5	76	55.5
	no	79	42.5	61	44.5
Nature of the interaction	wanted	79	42.5	30	21.9
	unwanted	10	5.4	35	25.5
	both	97	52.1	72	52.6

Digression: Confrontation with pornographic contents

More than one third of the 2.116 girls and boys who provided information about their experiences with pornography within the last year in more detail (39.6%, $n = 838$) has reported being confronted with online pornography. Considering the aspect of voluntariness, 51.6% of the youths ($n = 432$) reported to have been confronted at least once unwanted, 29.5% ($n = 247$) of the adolescents came upon pornographic images coincidentally. Receiving self-made online pornography from someone else ("Selfies") reported 16% ($n = 134$), "commercial" pornographic images, in contrast, received only 4% ($n = 85$). Overall, a quarter (24.6%; $n = 206$) spoke of reception of pornographic images within the last year, and 21.4% of them stated that receiving pornography was burdening to them. Regarding the content of pornography, those adolescents who reported intentional search and/or reception of pornographic images have been asked for further details ($n = 591$): Of those, more than a quarter (26.2%; $n = 155$) reported reception of images focusing genitalia or masturbation of a single person,

and 18.3% ($n = 108$) mentioned records or images of particular sexual methods such as various fetishes, bondage, rape or sex with animals.

Online sex

The least frequently reported online sexual interaction among German adolescents was online sex (6.2%, $n = 137$). Of those adolescents who reported online sex, 16.1% ($n = 22$) described this experience as burdening. Being asked about the reasons why they engaged in online sex, more than half of the girls and boys (54%, $n = 74$) said that they were just interested in it. On the other hand, 3.6% ($n = 5$) reported being threatened by their online contacts. Other stated reasons specifically for engaging in online sex were, for example, love, intimacy or receiving presents. In sum, 13.9% ($n = 19$) of the adolescents reported that they have cancelled the contact after having online sex, a half of them (52.6%, $n = 10$) because they were aware of the dangers potentially resulting from such online interactions. Table 3 shows the characteristics of online sex with respect to age and gender of the online contacts, acquaintance to the online contacts and the nature of the interaction (wanted vs. unwanted).

Table 3: Characteristics of online sex reported by $n = 137$ adolescents

		<i>n</i>	%
Age of the online contacts	adult	60	43.8
	peer	46	33.6
	child	2	1.4
	mixed	29	21.2
Gender of the online contacts	female	46	33.6
	male	71	51.8
	both	20	14.6
Acquaintance to the online contacts in real life	yes	45	32.8
	no	92	67.2
Nature of the interaction	wanted	50	36.5
	unwanted	11	8.0
	both	76	55.5

Meeting offline

From all adolescents, 24.6% ($n = 543$) reported meeting someone whom they only knew online also in real life at least once. Of such meetings 10.5% ($n = 57$) included sexual interactions. Asking the adolescents what motivated them to meet individuals they never met in real life before, we found out that the most reported reason was having interests and hobbies in common (52.3%, $n = 284$). Apart from this, 12.5% ($n = 68$) of the girls and boys fell in love with their online contact, 5.3% ($n = 29$) wanted to meet the online contact for sexual purposes explicitly and 2.4% ($n = 13$) reported that they met their online contacts because of receiving presents and feeling intimate with them. There were also adolescents who met their online contacts offline because they were threatened by them (0.7%, $n = 4$). Lastly, those meetings that turned sexual were perceived by 7% ($n = 4$) of the adolescents as burdening, whereas 1.6% ($n = 8$) of the offline meetings without sexual interactions were described in this way. Table 4 shows the characteristic of meeting unacquainted online contacts in real life with respect to their age and gender and the nature of the interaction (wanted vs. unwanted).

Table 4: Characteristics of meeting unacquainted online contacts in real life reported by $n = 543$ adolescents

		<i>n</i>	%
Age of the online contacts	adult	126	23.2
	peer	316	58.2
	child	12	2.2
	mixed	89	16.4
Gender of the online contacts	female	154	28.4
	male	212	39.0
	both	177	32.6
Nature of the interaction	wanted	129	23.8
	unwanted	74	13.6
	both	340	62.6

Discussion

The presented results give an overview of the online sexual interactions of German adolescents and yielded some interesting findings. We deliberately did not assign our findings to certain online phenomena such as online sexual solicitation, SOG or sexting to avoid the above-mentioned problems with the definitions of these phenomena as well as with the legal definition of the age of consent and the age of criminal responsibility. International readers are encouraged to decide for themselves which phenomena are represented by our results.

The general picture emerging from the analysis is that the Internet became a part of young peoples' sexuality as already reported by Bianchi et al. (2017) or Burén and Lunde (2018). A relatively high amount of Internet experiences appeared to happen voluntarily. This finding would suggest that most of the experiences do not imply an exploitative nature. On the other hand, what was initially perceived as wanted interaction might turn into burdening or unwanted experiences later, for example when the adolescents were confronted with disturbing pornographic images or realize that they could become or, in fact, became victims of online sexual abuse. Livingstone and Smith (2014) already pointed out the fact that adolescents are not aware of the potential (emotional) consequences of sexual exposure online. Similarly, adolescents might underestimate the consequences of one specific online interaction for further interactions or even offline meetings with sexual purposes. In this context, the use of exchanged pictures to blackmail victims, for example, into sexual exploitation has been identified as a part of the diverse range of online offenders' strategies (Bergen et al., 2014; Briggs et al., 2011; Malesky Jr, 2007; O'Connell, 2003; Shannon, 2008). In sum, differentiating between sexually appropriate experimentation, sexually inappropriate experiences and the antecedent of sexual victimization or its taking place appears as very difficult at this point.

A very important finding was that approximately half of the online sexual interactions took place with individuals who have known each other only online. Even if it seems that a considerable amount of online sexual interactions was peer to peer interactions, there is still some doubt as to whether the reported details about age and gender of the online acquaintances were true or false. Therefore, the adolescents might be unaware of being victims of adults when engaging in online sexual activities with unknown peers. What's more, some adolescents reported that they engaged in sexual inter-

actions with children and therefore possibly became unaware perpetrators of online sexual abuse.

In conclusion, our data provide crucial information about necessary prevention measures. It is important to raise the adolescents' awareness of the diverse motivations, suspicious behavior and possible criminal intentions of their Internet acquaintances. Special focus should address the issue of minimizing circumstances of victimization in the course of indirect or direct online communication with others (e.g., avoiding posting publicly or sending erotic or nude pictures either to acquainted or unacquainted online contacts). Also, the awareness of the possible resulting consequences for adolescents themselves and the awareness of the possibility of becoming an offender of child sexual abuse (e.g., when engaging in online sexual interactions with children) should be raised simultaneously. However, not only the adolescents' awareness but also the awareness of their parents, caregivers, significant others or teachers should be addressed to the same extent to make them more sensitive to suspicious behavior on the adolescents' side. Beyond this, it is important to note that adolescents are sometimes not accessible for teachers' or parental advices. Possibly, a stronger focus on the theme in relevant public events, advertisements or anonymous professional counselling at schools, centers or directly in the online platforms could minimize the shame of disclosure. An open dialogue could represent a particular form of behavior control and, at the same time, would help the adolescents think about online sexual interaction critically, as it can, but do not necessarily have to, lead to victimization of themselves.

Limitations

Given the fact that the presented data were collected in the previous decade, our findings should not be over-interpreted. As the Internet and especially social media tend to undergo a very fast dynamic development, our findings might not be generalizable to all, especially the recent, online trends. In contrary to 2013, nowadays almost every German adolescent accesses the Internet via smartphone and uses diverse social media apps (e.g., Snapchat, TikTok, Twitter or Instagram) daily (according to [statista.de](https://www.statista.de)). With this development, public awareness of negative consequences of online social interactions, such as the risk of victimization, has also grown at the same time. Both facts could affect the prevalence rates of online sexual victimization substantially. Therefore, future research will have to meet the challenge

of this permanent dynamic process and continue to explore new trends and phenomena to shed light on up-to-date prevalence rates.

Ethical approval

This study has been conducted in strict adherence to established ethical guidelines for scientific research. The ethical considerations and principles governing this research align with recognized standards and regulations to ensure the welfare and rights of all participants involved (informed consent, anonymity/ pseudonymity and confidentiality, voluntary participation, beneficence and non-maleficence, transparent communication).

Note: Readers who are interested in more differentiated results for each age category (14, 15, 16 and 17 years) are encouraged to see: Neutze, J., Schuhmann, P., Petry, F., Osterheider, M., & Sklenarova, H. (2018). *Sexualisierte Gewalt in den digitalen Medien* [report]. Unabhängiger Beauftragter für Fragen des sexuellen Kindesmissbrauchs. https://beauftragte-missbrauch.de/fileadmin/user_upload/Materialien/Publikationen/Expertisen_und_Studien/Sexualisierte-Gewalt-in-den-digitalen-Medien.pdf

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2.4 Sexual Online Grooming – Prevention Concepts for the Protection of Primary School Children

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This article provides insights into the strategies of primary school children when confronted with sexual online grooming. Based on these insights, prevention measures that can be implemented in schools are to be designed to ensure the competent use of digital media and protect children from sexual online grooming. To approach the research gap of sexual online grooming, six fourth-graders were questioned about their media use and their behaviors on the Internet, using a qualitative guided interview and a supporting short questionnaire. The study revealed that explicit knowledge about sexual online grooming was not present. Furthermore, variation of individual behaviors in risky online communication settings became apparent. Because of the intensive use of digital media and uncertain strategies in online communication settings, comprehensive media education in school contexts seems to be essential.

Keywords: primary school, media use, high-risk communication settings, prevention measure

Introduction¹

“I know with 100% certainty that you’ve probably played around with yourself ... it’s nature ... you see or hear something that makes you horny, you get wet, and you want to masturbate” (Enders, 2004, p. 7, translated by the author).

Some people would probably not believe that the cited statement was made in a chat room for children. In 2004, the employees of “Zartbitter”² conducted undercover research in chat rooms that are intended for minors (Enders, 2004). They discovered that sexually influenced statements (as the quote above) are apparently common (Enders, 2004).

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- 1 This article presents the shortened version of the author’s bachelor thesis and was first published in *Ludwigsburger Beiträge zur Medienpädagogik*. Reference: Vogel, J. (2019). Online-Grooming. Präventionskonzepte zum Schutz von Grundschüler*innen. In Online-Magazin *Ludwigsburger Beiträge zur Medienpädagogik*, 20/2019. <https://www.medienpaed-ludwigsburg.de/article/view/361/356>
 - 2 Link for further information: https://www.zartbitter.de/gegen_sexuellen_missbrauch/Aktuell/Wir_ueber_uns.php

Children and adolescents live in a world in which digital media and the using opportunities have a decisive influence on their daily life (Roll, 2017). In addition to common chat rooms, communication is also possible through social networks like Facebook, Instagram, and Co. (Roll, 2017). Even primary school children seem to maintain friendships or socialize easily with the help of digital media.

Considering the introductory statement, it is obvious that not all communication partners on the Internet strive for harmless everyday conversations. For this reason, the dangers and risks to which children may be exposed when using online communication must not be trivialized (Roll, 2017). In addition to forms of sexual harassment appearing randomly and isolated, there is a more manipulative way offenders use to satisfy their sexual desires at the expense of minors.

This phenomenon is called sexual online grooming (SOG). Adults build up trust in online communication settings over a longer period of time to abuse children and adolescents for their sexual intentions (Craven et al., 2006). With the increasing possibilities of virtual communication, there are countless ways of communicating with each other anonymously and (maybe) uninhibitedly (Katzer, 2014). Childrens and adolescents' intensified use of digital media increases the risk of getting in touch with potential offenders (Gottschalk, 2011).

School-based institutions are suitable to create appropriate prevention measures and offer protection against victimization of potentially affected children (Bustamante et al., 2019; Fryda & Hulme, 2014). Basic skills in the field of media education can be promoted as early as in primary school (Cheung, 2005). One approach for targeted prevention concepts is the examination and the assessment of how children react being exposed to SOG and what kind of existing strategies they use in dangerous and high-risk communication settings on the Internet. In this way, deficits can be detected and specifically compensated.

Research work on children's strategies and prevention concepts to protect against SOG has so far only existed in isolated cases (Vogelsang, 2017). Particularly primary school children have hardly been taken into consideration. Because of this deficit, the research question of the present article is:

How can prevention concepts be designed to protect primary school children from SOG based on their strategies in high-risk communication situations online?

With the help of this research question, practical measures for prevention concepts related to SOG will be derived to contribute to the protection of primary school children.

Strategies of children

In the past, strategies of primary school children in high-risk online communication settings concerning SOG have only been examined sporadically (Vogelsang, 2017). Nevertheless, it is possible to draw conclusions based on existing research on related topics. Part of this research is presented in this section.

Intending to uncover strategies when confronted with SOG, Wachs et al. (2012) interviewed a total of 518 fifth to tenth graders in four different schools. The survey made it possible to identify three dimensions of different strategies in online communication settings. Based on the cited research, the behavior patterns in sexual online harassment situations can be divided into *cognitive-technical behavior*, *aggressive self-assertive behavior* and *helpless behavior* (Wachs et al., 2012).

The *cognitive-technical behavior* is characterized by the questioning of the offenders' intentions. In this dimension, the children question the intention of the online communication. They try to break off the contact with the offender by asking him or her to end the communication. They also use technological help such as shutting down the computer or changing various settings on their accounts (Wachs et al., 2012). Grimm et al. (2008) were able to reveal similar children's strategies when experiencing harassment on the Internet. In their survey, young people between the ages of 13 and 21 stated that they reacted to sexual online harassment with ignorance or used the blocking function. Especially the use of the blocking function can be integrated as a technical behavior into the cognitive-technical dimension of Wachs et al. (2012). In addition, the results of Vogelsang's research (2017) can be classified into this heading. The online study with selection options investigated strategies in sexual online victimization situations of a total of 302 adolescents aged 14 to 17 years. Over 70% of the sample stated that they block communication partners when experiencing sexual harassment on the Internet. Besides, 60% of the respondents considered leaving the chat as an option.

Another dimension of action is the *aggressive self-assertive behavior* (Wachs et al., 2012). This dimension includes actions such as clearly stat-

ing that the communication is not wanted. Insults and threats are also expressed. Grimm et al. (2008) were also able to determine strategies in their study that show insulting the communication partner. A comparable selection option at Vogelsang's study (2017) that included insults and aggressive behavior was not given. However, 46% of the surveyed adolescents stated that they would clearly communicate if no further communication was wanted (Vogelsang, 2017).

The *helpless behavior* dimension explored by Wachs et al. (2012) can be assigned to strategies that solve unpleasant online situations only in a limited expedient way. Desperate requests to end the communication were made to the offender or (as a result of a lack of knowledge) no strategies were used. Also, in the study of Vogelsang (2017), 5% of the adolescents stated they would not take any further steps when experiencing sexual online victimization.

Overall, experiences of sexual online harassment are predominantly classified as unpleasant (Grimm et al., 2008). For this reason, strategies to end the communication are applied in the majority of cases. It is also worth mentioning that about 10% of the adolescents stated they had no knowledge of possible prevention and protection strategies against sexual online victimization (Vogelsang, 2017). Considering the research results, it must be noted that the surveys focused mainly on children in grades 5 to 12. Due to the age differences, the results cannot claim representativeness for primary school children.

Prevention

When considering the strategies of primary school children in high-risk communication settings (concerning SOG), it became clear that prevention measures are necessary to ensure appropriate protection. In the present section, insights into theoretical knowledge of prevention work, particularly with regard to school institutions, are given.

The term 'prevention' refers to measurements that can help to protect against hazards and risks. It ensures the physical and mental health of potentially vulnerable persons (Wachs, 2017). In principle, approaches of modern prevention concepts concentrate on "education, information and empowerment of risk groups" (Wachs, 2017, p. 172). Pure deterrence as well as prevention measures based exclusively on prohibitions are not effective and should therefore be avoided (Wachs, 2017; UBSKM, 2019). To enable

the competent use of digital media by children and adolescents, prevention work must focus aspects as “stimulation, support, encouragement [and] strengthening one’s own strengths” (Braun, 2001, p. 123). Nevertheless, it must be noted that prevention measures can never guarantee full protection against victimization (Buskotte, 2001).

The small amount of the current researches on strategies of primary school children when confronted with SOG showed that further research is necessary, especially to develop corresponding prevention concepts. For this reason, further research was conducted with the help of an own empirical study.

The present study

The present study aims to identify strategies of primary school children when experiencing high-risk online communication. Based on these results, conclusions can be drawn on how to design prevention concepts to protect children against SOG.

The guiding research questions were as follows:

1. *How do primary school children use digital media, especially social media?*
2. *How do primary school children (possibly) behave in high-risk online situations, especially situations concerning SOG?*
3. *How can prevention concepts (to protect primary school children from SOG) be designed for the use in school contexts (based on the research findings)?*

Primary school children can encounter different dangers and risks in on-line communication settings. In addition to considering strategies when confronted with SOG, the qualitative survey also addressed aspects of anonymity and identity manipulation as well as the handling of sensitive data. The qualitative approach was particularly appropriate because the field of SOG is considered to be researched only sporadically. Therefore, the present study does not aim to measure objective data but to reconstruct and understand the subjective view of the participants of the interviews (Helfferich, 2009; Flick, 2012).

Methods

Participants

The participants of the study consisted of four male and two female primary school children in fourth grade. Therefore, a total of six children ($N = 6$) were interviewed. The average age of the children was 10.5 years. All interviewed pupils live together with their parents. Five of the children have at least one sibling. A detailed insight into the short profiles of the interviewed primary school children (which could be created with the help of a short questionnaire) can be requested from the author of this article.

Procedure

In total, three qualitative interviews were conducted with a total of six primary school children (two children per interview) in May 2019. To find volunteers for the qualitative interviews, a call for participants was made. Therefore, 25 flyers describing the aims and procedure of the study were distributed in a selected primary school class. Six positive responses for voluntary participation were given.

The interviews took place at the primary school of the children. For this reason, the setting was familiar to the interviewed children. The provision of a separate room made it possible to conduct the interviews in an undisturbed atmosphere without external distractions. At the beginning of the interviews all participants were briefed on background information and research procedures.

Due to organizational constraints from the primary school, a limited time period (90 minutes) was available to conduct the interviews. Additionally, the interviews were designed as group surveys with two children per interview. However, the subjective view of each child remained the focus of attention, so that group dynamics were not examined (Schreier, 2004).

To answer the research question, a guided interview was embedded in a theatre script. With the help of a hand puppet named “Clara”, a chat situation could be simulated. The theatre game made it possible to introduce the topic of SOG in a playful way. Therefore, the primary school children were not confronted with any insensitive content (Gläser & Laudel, 2010).

In the theatre situation, the hand puppet comes across an unknown user profile (Lena2010, profile picture of a girl with brown hair and a red dress)

in a chat room for children. During the communication, more personal details and intimate images were requested. To support the children's narrative flow, maintenance questions and control questions were used (Helferich, 2009). The interviews were recorded and transcribed afterwards.

Measures

To capture the views and action strategies regarding SOG of the interviewed primary school children, a qualitative approach using a guided interview was implemented.

In the course of the guided interview, the following topics were addressed: the anonymity of chat partners, handling personal data on the Internet, action strategies for ending online communication, help and contact points for support. Moreover, an accompanying short questionnaire provided insights into biographical data (age, family constellation), the media equipment (technical equipment) and media use (access to the Internet, use of social media) of the interviewed children. The questionnaire was presented to the students after the interview and completed together.

Analysis

The collected data material was evaluated and analyzed using qualitative content analysis according to Mayring (2015). In terms of the qualitative content analysis, parts of the interviews were coded and categorized.

Results

Media use of the interviewed primary school children

With the help of the short questionnaire, it was possible to gain insights into the media equipment as well as the media use of the interviewed children. A shortened overview is presented in the following table 1.

Table 1: Media use and equipment

Stu- dent	Gen- der	Age	Media equipment	Use of social media
1	female	10	smartphone, computer/laptop, tablet-pc	WhatsApp, Instagram, Snapchat, YouTube
2	male	11	computer/laptop, gaming console, tablet-pc	YouTube
3	female	11	smartphone, computer/laptop, tablet-pc, TV	WhatsApp, Instagram, Snapchat, YouTube
4	male	11	smartphone, computer/laptop, gaming console, tablet-pc, TV	WhatsApp, Instagram, Snapchat, YouTube
5	male	10	smartphone, computer/laptop, gaming console, tablet-pc, TV	WhatsApp, Facebook, Instagram, Snapchat, YouTube
6	male	10	smartphone, computer/laptop, gaming console	WhatsApp, Instagram, Snapchat, YouTube

All of the respondents have access to the Internet at home. Two children can use this access without any restriction. All smartphone owners can also go online with their smartphones, and two children have also access to the Internet whilst on the move. According to their statements, all participants are online every day, most of them without being accompanied by other people. Only one student uses the Internet mainly together with siblings.

Strategies when confronted with sexual online grooming

With the help of the theatre play, behavioral patterns and strategies in online communication settings of the interviewed primary school children could be identified. They are presented in the following section.

Dangers and risks in online communication

The majority of the interviewed children reflect possible intentions of unknown chat partners. The potential (fraudulent) intention of the communication partner is already critically examined at the beginning of the chat situation. Although the unknown user account asks the hand puppet at the beginning only about its well-being, some primary school children are critical and suspect malicious intentions.

In the setting of the theatre play, the primary school children consider the exchange and subsequent theft of their personal data as dangerous. It

is suspected that the communication partner wants to steal information such as telephone numbers or addresses. When being asked explicitly for their home addresses, one student assumes that the communication partner wants to commit a burglary. Also the danger of a hacker attack is taken into consideration.

Student 1 (*Line 50*): Hm, that someone just wants to fool her?

Student 6 (*Line 419*): Maybe if you don't know the (.) uh, well, the chatter.

Student 6 (Line 421): And (.) and he contacts you just like that, for no reason.

Student 3 (*Line 264*): Because (.) um, that might be for example a stranger. And he breaks into the house and (.) yeah, it is not safe.

Student 3 (Line 251): Maybe it is a hacker.

Some children also suspect that the communication partner intends a meeting in the offline world. The students realize that malicious intentions of communication partners on the Internet do not always solely concern online communication but may also aim for personal meetings. Above all, media-influenced ideas of kidnapping (for example a transport in a van) are expressed. A sexual intention is not mentioned at any time during the interview. Even when explicitly requested to send a picture dressed in underwear, the children do not mention that the communication partner could pursue sexual intentions.

One student suggests the targeted search by adults for younger children as a possible intention. However, the student does not address an explicit danger such as SOG.

Student 1 (*Line 79*): Hm. If (.) uh for example he or she asks if you live here, then (.) he wants to meet Clara.

Student 1 (*Line 84*): Um, because he wants to meet her. And (2s) then (2s) yes, (3s) for example, takes her with him.

Student 4 (Line 269): Um. The strange ma//man or woman could (.) come into your house and (2s) take you away.

Student 5 (Line 469): And, and (.) um, it can also be (.) that he just comes with a car and just rings the bell and pretends that he wants to deliver you//something and then//

Student 5 (*Line 473*): He grabs you and then he puts you in the back of a van.

Student 5 (Line 392): Maybe someone who is also just looking for children.

Anonymity and identity on the Internet

Anonymity and identity play an important role in online communication. Not only the concealment of one's personality but also the manipulation of Internet profiles is possible in online settings (Wachs, 2017).

When the hand puppet is confronted with the unknown user account, half of the interviewed primary school children are skeptical about it. The true identity, which is suspected behind the user profile, is characterized as negative. The information of the profile is stated as deception and the children do not trust them.

The counterpart to these children trusts the information. Although these children also recognize that it is never possible to draw conclusions about true identities from Internet profiles, they nevertheless trust the information of the profile and use it to determine the identity of the communication partner. Gender, age, and appearance are derived from the provided profile information.

Student 1 (Line 45): Um (3s) maybe he is someone who just wrote this name down (.) but is someone else.

Student 2 (Line 54): Someone pretends to be different and then um (.) um (.) writes *I want your number*. And then um (.) there is a bad guy.

Student 5 (Line 413): False identity, especially with those numbers.

Student 5 (Line 425): Because it says 2010. Maybe he or she is just pretending (2s) he is born in 2010?

Student 2 (Line 48): Or 2010 could be her birth date.

Student 3 (Line 213): Hm, she might have brown hair? (5s) Red dress?

Student 4 (Line 217): Because (.) on the picture, it looks like this.

Handling sensitive data

The interviewed primary school children are critical of the passing on of personal data. Three children state they are handling sensitive contact data such as addresses or telephone numbers with reflection and would not reveal them in online communication settings. The passing on of sensitive picture material is also viewed critically. One student clarifies this statement and emphasizes that he would not send his pictures, even if they cannot be traced back to the identity of the children (for example, pictures without a face).

Some children consider the indication of their name and age to be harmless. Also the exchange about everyday school topics or meeting point arrangements with friends is not considered risky. One student considers the passing on of sensitive picture material to be harmless if it happens within the circle of friends.

When looking at the results, it is important to note that the behaviors mentioned by the children in the interview setting may not correlate with real behaviors when confronted with SOG. This assumption can be justi-

fied in particular by the fact that some children are critical of the disclosure of their own personal data but give contradictory advice to the hand puppet in the interview setting.

Student 2 (Line 94): Not where you live or the phone number, the address.

Student 3 (Line 262): And you are neither allowed to say your last name.

Student 5 (Line 550): Because even without a face, she'll know what you look like.

Student 4 (Line 261): But you can say what your name is. And how old you are.

Student 5 (Line 475): You are allowed to talk about things like: Oh look, this homework was hard! or (.) Look, um (.) can you come down for a moment? Like with my brother, because he lives above me (.) and just things like that.

Student 6 (Line 500): You could send it to a friend, when you are in underwear.

Blocking the chat partner

To end the online communication and break off contact with the chat partner, one of the interviewed students mentions the blocking button. This possibility of breaking off contact is already brought up by this student when being asked about his living place. He is aware of the blocking function and (presumably) has the courage to use it.

Student 5 (Line 441): You can also//you can simply (.) if someone writes to you, you can also block him immediately.

Student 5 (Line 546): Actually I know such situations. I would have blocked him already at the first question.

Deleting the chat

In addition to the function of blocking the communication partner, the deletion of the chat is also considered by two interviewed children. In contrast to the blocking function, the delete function does not have a permanent character on most platforms. It removes the message history only temporarily. Often the communication partner still has the opportunity to contact the person. It could not be determined in detail whether the interviewed children are aware of the difference between the blocking and deleting function.

Student 2 (Line 111): Hm. (2s) Delete her from the Chat for Kids list?

Student 3 (Line 291): Hm, she can (.) still delete the number.

Keeping up the contact

The majority of the interviewed children name behavior patterns that keep up the online communication by asking or answering questions. By asking questions, the primary school children try to determine the identity or the intention of the chat partner. These strategies do not lead to the termination of the communication. It must be mentioned that the maintenance of contact does not need to be desired by the children. Those behaviors can result from the fact that the primary school children do not consider the contact to be risky or do not have any alternative action strategies.

There are also obfuscating behaviors that encourage the communication partner to provide further answers. Identical to the strategy of asking questions, there is also no interruption of communication. When being asked about their home addresses, the interviewed children respond by mentioning it being a secret. Statements like this may encourage the communication partner to ask further questions. One student expressed the naming of a wrong address. In this way, he tries to avoid concrete statements, but the communication is not explicitly stopped.

A further form of maintaining contact is the initiation of a personal meeting. When asked to indicate their home address, one student suggests a personal meeting in a park. The contact is not only maintained by suggesting this meeting in the offline world but also even intensified if the suggestion is implemented. In principle it is necessary to consider if the children may be applying a previously learned strategy (in online communication settings) that recommends meeting Internet acquaintances only in public places.

Student 1 (Line 113): Um (.) why? You can write: *Why do you want to know this?*

Student 3 (Line 291): And (2s) uh (.) and she can write: *Who are you?*

Student 2 (Line 74): Tell her: *This is a secret.*

Student 6 (Line 458): Or just give her the wrong address.

Student 2 (Line 88): They should meet in the park.

Student 2 (Line 91): So that they get to know each other better.

Defense

Two of the interviewed primary school children responded to the request of sending a sensitive picture (in underwear) by rejecting it. The fourth graders clearly stated that this request of the chat partner will not be followed up. However, only one student mentions a subsequent action strategy

which leads to the termination of the contact (blocking the communication partner).

Student 3 (Line 294): And she can say: I don't send photos with underwear.

Student 5 (Line 456): Or maybe say: No.

Help from outside

The support of external reference persons can help primary school children to act appropriately in unpleasant online situations and end communication settings in a goal-oriented manner. The following section describes which contact persons the interviewed primary school children mentioned, if assistance was needed.

Close relatives and friends

During the interview, four of the children name their parents as the first point of contact in unpleasant online situations. One student specifies this information and explicitly names his mother. All primary school children who have an older brother would also ask him for help. Other siblings are not mentioned. The primary school children also state they would turn to friends they trust. The children do not consider asking a third person for help during the interview situation by themselves. Only when the interview leader gives them an impulse, the fourth-graders name the above-mentioned contact persons.

Student 4 (Line 306): My parents.

Student 5 (Line 510): She can just (1s) she can tell her mother.

Student 5 (Line 528): Um (.) maybe, tell her brother or (.) family.

Discussion

The results of the study underline the frequent and mostly autonomous use of digital media for communication. The focus of the present research was to analyze the children's strategies in high-risk online communication settings, especially when confronted with SOG.

In principle, it can be said all the interviewed children are at least informed about single dangers and risks of online communication. However,

neither the term SOG nor possible offender strategies for building up trust were discussed in the interview setting. The displayed strategies of the primary school children in high-risk online situations differ. Nonetheless, the majority of the children do not react appropriately in high-risk communication settings. The study results highlight the necessity to sensitize society and children especially to the dangers of SOG. Based on these insights, conclusions on preventive measures to protect children against SOG can be drawn.

Limitations

According to the qualitative procedure, the present study cannot claim to be representative. Since the evaluation of the data was always carried out in terms of the described aspects, this standardization made it possible to at least ensure partial objectivity. Moreover, the simulation of the theatre play merely represents “What if ...?” situations. The primary school children indicated that they *would* react in certain cases in a certain way. Therefore, the transferability of the present study results are limited since the analyzed advice about how to deal with SOG was given to a hand puppet.

Implications and outlook

The results showed that no homogeneous level of knowledge and action can be expected when pupils are confronted with dangers and risks on the Internet. Therefore, preventive measures to protect against SOG must be implemented to support primary school children when dealing with dangerous and risky situations online.

It is indispensable to familiarize primary school children with the dangers and risks of digital media (Rauh, 2016). The interviewed children did not mention any SOG experience during the interview setting. Thus, it is necessary to do preventive awareness-raising work (in primary schools) so children can recognize the danger of SOG and, depending on their initial situation, apply appropriate strategies. In particular, the awareness-raising work in school settings must focus on the manipulative procedures of offenders but should not generate fear or panic. The aim is to help children to use digital media confidently and fearlessly.

Furthermore, children must develop awareness that they can never be sure about who is hiding behind Internet profiles (Weißer Ring e. V.,

2019). Therefore, it is important to discuss anonymity and identity on the Internet with children. The available results have shown that the majority of children are generally critical of anonymous profiles. Nevertheless, some primary school children rely on profile information and trust them. The possible manipulation of profile pictures and information must therefore be addressed in appropriate prevention units. Communication with unknown chat partners should be handled with caution and reflection.

Considering the available results, the handling of personal data in chat situations must be trained in preventive work. Teachers must make clear that sensitive information such as telephone numbers or addresses should never be passed on. Even if the chat partner assures secrecy of the data, the children must be aware that the passing on of information bears risks and should be avoided. Anonymity on the Internet can also be used advantageously for one's protection. Since SOG offenders use children's personal information for selection or manipulation, sensitive data must be treated with caution, both when published on social networks and when passed on in online communication settings. Children must internalize the importance of handling their own private information carefully (Weißer Ring e. V., 2019).

Since it seems only partially realistic to completely prohibit uploading images (due to the frequent use of social media applications), prevention measures should include at least familiarize children with appropriate privacy and profile settings. With the help of these settings, the publicity of information can be restricted and a first hurdle for SOG offenders can be created.

In addition to awareness-raising work, it is essential to suggest suitable strategies to the children with which they can ward off contact attempts by offenders (Katzner, 2014). The results of the study showed that not all children have strategies that lead to the termination of communication. To end the contact in a targeted manner, it makes sense to block the chat partner (Weißer Ring e. V., 2019). Therefore, on one hand, the technical function must be presented and explained to the children, and on the other, it must be made clear that blocking a communication partner is allowed at any time. When looking at the results, it is also important to note that deleting the chat partner (as mentioned by the primary school children) may not be as effective as blocking. In general, it is relevant to encourage children to break off the contact completely. Sexual online grooming offenders should not be given the opportunity to influence the children by manipulation and continue with involving them in the conversation.

It is also important to offer contact points to which children can turn should they be uncertain. Contact persons can also provide help if the offenders make contact again. The person of trust must offer the primary school children appropriate help in all possible phases of SOG. Children should not be given the feeling that they may only turn to outsiders when they are victimized (Vogelsang, 2017). The results show that primary school children prefer to contact people within the family. In principle, this behavior is appropriate if the family members have sufficient media competence to help the children effectively; therefore it should be encouraged. At the same time it is important to also suggest non-family contact points such as aid organizations or teachers who can be contacted.

If preventive measures are taken, the peer-to-peer method, which is currently still rarely implemented, can be considered (Katzner, 2014). Peer-to-peer education refers to the educational and preventive work of children by their peers (Katzner, 2014). Advantages are not only the relationship of trust that children have for the so-called “scouts” but also the relief of teachers if media education support is provided by scouts (Katzner, 2014). Since the “generational-logical process” (Friedrichs & Sander, 2010, p. 284) of passing on knowledge from older to younger generations is no longer consistently implemented in the case of media literacy, but rather competencies and instructions of media use are also exchanged within the peers (Friedrichs & Sander, 2010), it would make sense to support this process. Whether or not this concept can already be integrated in primary schools requires further research.

Strengthening one’s self-confidence is important in prevention measures. Younger children in particular must be made aware that they can trust their feelings when a situation seems strange to them (Freelance, 2018). Prevention should therefore also include the strengthening of self-confidence and encourage the children to make their limits clear (Wachs, 2017). Despite the implementation of prevention concepts, it cannot be ignored that even children who are experienced and self-confident in dealing with digital media are inferior to the strategies of offenders. There is an imbalance of power between offenders and those affected (Wachs, 2017). It must be made clear, both in awareness-raising work and in the discussion of how to act in online communication situations, that the children are not to blame if the contact continues or if offenders contact them again (Buskotte, 2001). It must also be emphasized that, even if preventive measures are disregarded, the blame always lies with the offenders and never with the children affected (UBSKM, 2019). Identical to other prevention concepts,

prevention in schools must therefore not be expected to completely prevent children from being affected (Marquardt-Mau, 2002).

Nevertheless, primary schools are able to enabling comprehensive prevention against SOG (in this volume, see Kimmel et al. in chapter 4.2). Not only explicit subjects such as SOG but also general media education is important and therefore should be taken into consideration. Teachers can use media education to help primary school children acting self-confidently and critically when using the Internet. For the future, it would therefore be desirable to implement a sustainable media education starting as early as in primary school.

Ethical approval

This study has been conducted in strict adherence to established ethical guidelines for scientific research. The ethical considerations and principles governing this research align with recognized standards and regulations to ensure the welfare and rights of all participants involved (informed consent, anonymity/ pseudonymity and confidentiality, voluntary participation, beneficence and non-maleficence, transparent communication).

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3. Analyzing the Offender's Perspective

- Characteristics and Strategies of Sexual Online Grooming

3.1 The Magician – Case Study of a Hebephilic Man with History of Sexual Online Grooming

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The rapid growth of new technology led to an increase of sexual online grooming. Since studies have suggested an association between the sexual preference for early pubescent children (i.e., hebephilia) and sexual online grooming, adolescence has been identified as a key risk factor to being sexually groomed online. Nevertheless, knowledge about motives, therapeutic implications, and preventive strategies of sexual online grooming is still scarce. Therefore, this case study presents the diagnostic procedure and course of therapy of a young man with hebephilic sexual interest and sexual online grooming behavior.

Keywords: case study, sexual online grooming of early pubescent children, hebephilia, treatment course

Introduction

Sexual online grooming

Sexual online grooming (SOG) constitutes a serious problem. A cross-sectional US-American telephone survey of 1,500 Internet users, aged 10 to 17 years, revealed that 9% of those questioned received an unwanted sexual solicitation in recent years. An aggressive solicitation in which offline contact was attempted or took place was experienced by 4% (Jones et al., 2012). A comprehensive definition of sexual grooming is lacking. It is regarded as an online or offline (face-to-face) process by which a child and the surroundings are prepared for the abuse by gaining access and building trust to the child (Craven et al., 2006). Most common methods for SOG are Internet chat rooms (especially chat rooms for children), online profiles, and bulletin boards (DeHart et al., 2017; Malesky, 2007). Briggs and colleagues (2010) conducted a study of 51 men convicted of online sexual solicitation offenses via Internet chat rooms and suggested two subgroups of offenders: (1) the fantasy-driven offenders, who want to engage in cybersex without intent to meet offline, and (2) the contact-driven offenders, who want to

engage in offline sexual behavior. This classification has been extended by means of an in-depth examination of offender chat logs, email threads, and social network posts of 200 offender case files (DeHart et al., 2017). The authors proposed four different offender types: (1) those that engage in, or encourage, real-time masturbation (cybersex-only offenders), (2) those who attempt to schedule but do not engage in real-time masturbation (schedulers), (3) those who both do masturbate online and schedule (cybersex/schedulers), and (4) those that chat with a third party for purposes of child sex trafficking (ibid.)

Hebephilia

The term “hebephilia” denotes the sexual interest toward early pubescent children. Hebephilia is considered as independent sexual preference and is not to be conflated with pedophilia, the sexual interest toward pre-pubescent minors (Beier et al., 2015a; Blanchard et al., 2009; Seto, 2017; Stephens et al., 2017). Valid prevalence rates of hebephilia are lacking and can only be roughly estimated. Research suggests that hebephilia is more common than pedophilia and less common than teleiophilia (i.e., sexual preference toward adults; Grundmann et al., 2016; Seto, 2017; Stephens et al., 2017). This is consistent with evaluations of the Prevention Project Dunkelfeld (PPD; Beier et al., 2015b). Out of 222 self-identified men who presented themselves at the PPD in Berlin, 69% reported sexual fantasies involving early pubertal minors. Thereof, 16% reported being solely attracted toward early pubertal minors. In comparison, pedophilic sexual interest was reported by 58% (Beier et al., 2015b).

Hebephilia is no prerequisite for engaging in sexual offending behavior, and sexual offending against early pubescent children may not necessarily come along with hebephilia. Seto (2018) concluded that 50–60% of men with child victims did not have a sexual interest toward children. This suggests that sexual offenders exist that abuse children for reasons other than a sexual preference toward children (e.g., antisociality, cognitive impairments, lacking social skills). Hebephilia can still be regarded as major risk factor for committing child sexual abuse (CSA; e.g., Hanson & Morton-Bourgon, 2005; Mann et al., 2010; Neutze et al., 2012) and for the consumption of child sexual abuse images (CSAI; e.g., Seto et al., 2015). As hebephilia is expected to manifest itself during adolescence and to remain relatively stable throughout life (Grundmann et al., 2016; Spitzer, 2012),

hebephilia is additionally associated with an elevated lifetime risk for sexual offending.

In Germany, it has been possible to establish a network of outpatient treatment services for self-identified adolescents and adults with sexual interest toward prepubescent and early pubescent children (Beier et al., 2015b, 2016) that aim to prevent initial or repeated CSA and the consumption of CSAI. The services have been made possible by the anonymity afforded under German law. Unlike many other countries, Germany does not have a mandatory reporting policy, meaning that professionals are not obliged to report actual or suspected past offenses due to therapist-patient confidentiality (in line with § 203 StGB, in English: German penal code). This way, therapeutic offers are also made to individuals who voluntarily seek help concerning their sexual attraction to children, even if they have offended in the past. In many other countries there are mandatory reporting laws. Mandatory reporting laws require certain occupational groups to report actual and/or suspected cases of CSA and the consumption of CSAI to government authorities. Occupational groups that are mandated to report are, *inter alia*, medical/therapeutic personnel or those who commonly deal with children in their work routine (e.g., teacher, police). Everyone who does not report actual and/or suspected cases will be liable to prosecution (Liu & Vaughn, 2019). Outside Germany, mandatory reporting laws therefore resulted in the establishment of treatment services that primarily address hebephilic individuals without history of CSA or the consumption of CSAI. Hebephilic individuals with history of offending behavior can only take up therapy if the offense(s) is (are) kept secret. However, non-disclosure of past offense behavior impedes therapeutic work and development of behavioral control (e.g., Yates, 2013). For example, behavioral chains that led to past offending behavior could not be identified. In doing so, it would be difficult to assist individuals to identify, anticipate, and prevent risk situations that could lead to re-offending.

It should be noted that not everyone with hebephilic sexual interest requires professional support and that a sexual preference for children is distinct from a hebephilic sexual preference disorder (DSM-5, 2013). As such, there are hebephilic individuals who restrict their desire for sexual contact with children to fantasies only and do not experience distress with regard to their sexual interest toward children (Tenbergen et al., 2015). Nevertheless, hebephilia has to be regarded as an internationally relevant phenomenon. For instance, the first extensive evaluation of *Troubled Desire*, an online self-management tool for individuals with sexual interest in

children, has revealed more than 4,000 users from more than 70 countries within the first 30 months of existence (Schuler et al., 2021). There is only little awareness of the link between hebephilia and SOG. First results indeed suggest an association between the sexual interest in early pubescent children and SOG (e.g., Schulz et al., 2015). Therefore, adolescence has yet been identified as key risk factor to being sexually groomed online (Whittle et al., 2013). This is in line with Wolak and colleagues (2008) who propose that sexual groomers display rather hebephilic than pedophilic sexual interest – first of all because prepubescent children are less likely accessible online as adolescents. Considering the rapid growth of new technology, attention has thus to be paid to SOG. A better understanding of SOG, its motives, and its courses of action has the potential to derive both treatment implications and preventive strategies to protect children and adolescents online. Accordingly, this case study illustrates the course of therapy for a young man with hebephilic sexual interest and SOG. The client gave written informed consent for the publication of this case study. Details irrelevant to the clinical case were altered in order to protect the client's confidentiality. Quotations have been literally translated.

Background information

Boris is a German 22-year-old man who was accompanied by his parents on the first visit at the Institute of Sexology and Sexual Medicine, at Charité – Universitätsmedizin Berlin. Motives for consultation were a suspected hebephilic sexual interest and suspected SOG behavior, as Boris' parents discovered a collection of pictures of “boys in their early puberty” on Boris' smartphone. Upon detection, Boris' parents deleted the whole collection of pictures.

The initial intake assessment (T0) comprised a clinical interview, interview with parents, and a psychometric test battery including self-report questionnaires and a viewing-time paradigm (Abel et al., 1994), which unobtrusively measures response times while target images have to be evaluated according to their perceived sexual attractiveness. The second assessment (T1) comprised the same psychometric test battery and was conducted 13 months after the intake assessment and 12 months after therapy start.

Assessment (T0)

Clinical interview

Social and psychiatric anamnesis

Boris reported that he grew up in a town in northern Germany with his two older sisters (+2y, +5y) and married parents in a loving and supportive atmosphere. He still lived at home with his parents. His sisters moved away some years ago. He indicated having some loose social contacts. Close friends were negated. Except the connection to his family, he felt socially isolated. He did have a school-leaving qualification but had no vocational training and no job. He had no plan for the future. He felt highly pressurized that he did not have any future plan, especially because his sisters were already (financially) independent. He also had the impression that his parents did not have to worry that much about his sisters. He, in turn, knew that he caused many concerns to his parents. For instance, unlike his sisters, he needed private lessons from early on. He additionally suffered from depression and anxieties and was already in a psychiatric hospital twice. Sometimes he therefore felt inferior and a burden to his family. The clinical picture confirmed a previously assessed below-average intelligence score (IQ: 70–85).

Sexual interest

Since puberty, Boris indicated to exclusively have had sexually arousing fantasies, impulses, and behavior in relation to early pubescent boys. He did not report sexual fantasies with adults or prepubescent minors. He indicated that he felt burdened by his sexual fantasies and sincerely wished for a shift in sexual interest to adult men. There were no indications for any additional paraphilic sexual interests.

Sexual behavior

Boris has not had direct sexual contacts. He reported he had a “huge collection” of pictures of naked early pubescent boys. Pictures were not downloaded from peer-to-peer file-sharing networks. Instead, he contacted unknown boys via social media, groomed and – under false pretenses – requested nude pictures. He mainly used online photo- and video-shar-

ing platforms that are popular with young people, including Instagram, Snapchat, and Facebook. He usually spent seven to nine hours online a day. Most of the time he was on social media and scrolled through other people's profiles. Besides that, he watched videos on YouTube of magic shows and of magicians that reveal magic tricks. Occasionally he used WhatsApp to communicate rather superficially with former acquaintances from school. Online gaming was negated. He always went online with his smartphone. He did not have a laptop, computer, or any other Internet device. To obtain pictures of early pubescent boys, he proceeded as follows: First, he scanned social media profiles of boys for certain characteristics that indicate their higher susceptibility to manipulation. Also he was driven to profiles that allowed him to gain insight into the target's everyday life, hobbies, and area of interests. To him, boys seemed more receptive to SOG strategies if their social media profile had no privacy settings in place and if their profile was rather unfrequented, with few followers, and few likes for postings. Second, if there was enough information available on the target's profile, he sent a friend request and (after acceptance of his request) built online contact by using a false identity. He pretended being a magician who was able to perform magic tricks and was preparing for a huge magic show. On his profile there were no personal pictures available. Instead he uploaded pictures of equipment and accessories for magic tricks such as decks, magic wands, or top hats. Additionally he showed interest in the target's life to build an emotional connection with the boy. He asked several questions, pretended having similar interests, and paid compliments for their appearance and online content. Third, once he felt that he had gained enough trust, he encouraged them to send nude pictures. He used two tactics to ask for sexual images: (1) As a magician, he was looking for assistants for a large-scale magic show. To look good on stage, all assistants should wear comprehensive costumes. To commission costumes, he needed a naked full body picture. (2) He offered magic tricks online. Either as basis or in return for a trick, he was asking for naked full body pictures. The magic trick then comprised an estimation of body size. Time frame varied from minutes to days until he requested nude pictures. Usually, he kept several conversations going at once. As soon as he received the preferred picture, he usually deleted the chat record and blocked the contact. Pictures were collected and used for masturbation.

Boris was able to collect almost 400 pictures of boy victims with a *rate of success* of almost 100%. Hitherto, he had not been reported. Picture 1 (see below) illustrates a typical (Instagram) chat. At the end of the depicted

conversation, the boy sent a naked full-body picture. Upon receipt, Boris blocked the boy, which means that he was not able to find Boris' Instagram profile and therefore was not able to contact Boris anymore.

<p>Boris: Hi, whats up? 😊</p> <p>Response: Hi</p> <p>Boris: Nice pics</p> <p>Boris: WYD?</p> <p>Response: Nothin much u?</p> <p>Response: Thanks 😊</p> <p>Boris: Performing magic tricks</p> <p>Boris: Cant wait for my upcoming show</p> <p>Response: Waw thats cool</p> <p>Boris: Wanne come to my show 😊</p> <p>Boris: Will be throughout Germany</p> <p>Response: yea</p> <p>Boris: 🤩</p> <p>Response: What do u conjure?</p> <p>Boris: Come to my show 😊</p> <p>Boris: Mostly card tricks. And many other things</p> <p>Boris: I ll send you a vid when I am ready</p> <p>[...]</p> <p>Boris: Btw your pretty good-looking</p> <p>Boris: You exercise a lot, huh?</p> <p>Response: Thanks</p> <p>Response: Playing soccer</p> <p>Boris: No way, its my fav sport!!</p> <p>Boris: Position?</p> <p>Boris: Im defence</p> <p>Boris: Always nr 5 😊</p> <p>Response: Goalkeeper</p> <p>Boris: Nice. Lets play together soon</p> <p>[...]</p> <p>Boris: What youre doing today?</p> <p>Response: Homework</p> <p>Boris: Aw 🥰</p> <p>Boris: 😊</p> <p>[...]</p>	<p>Boris: Your cool</p> <p>Response: 😊</p> <p>Boris: 😊</p> <p>[...]</p> <p>Boris: Just got a call by my assistant.</p> <p>Boris: He's sick</p> <p>Boris: Cannot join me on my show</p> <p>Boris: Wanne do it?</p> <p>Response: What do you mean?</p> <p>Boris: Do you wanne be my assistant on stage?</p> <p>Boris: I bed you would do great</p> <p>Response: What do I have to do for it?</p> <p>Response: Haven't performed any tricks</p> <p>Boris: Haha no worries</p> <p>Boris: I'll show you everything</p> <p>Boris: It will be so cool</p> <p>Response: ok</p> <p>Boris: Awesome!!</p> <p>Boris: You need a costume on stage</p> <p>Boris: You gotta pic?</p> <p>Response: What do you mean?</p> <p>Boris: No selfie</p> <p>Boris: I need to know how tall you are for the costume</p> <p>Response: What should I wear?</p> <p>Boris: You ll look great. No worries. Promise.</p> <p>Victim: Ok what pic?</p> <p>Boris: Naked. Not just ur face. Lol</p> <p>Victim: What do you want to see?</p> <p>Boris: Full body. Need ur size.</p> <p>Victim: Im a 60</p> <p>Boris: Lol need to see by myself</p> <p>Boris: The costume must fit perfectly</p> <p>Boris: Ill delete after seeing</p> <p>Victim: ok</p>
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Figure 1: Instagram excerpt from Boris sexual online grooming after his friend request has been accepted

Upon detection, Boris' parents confiscated the smartphone and deleted the whole collection of pictures. In return, he received a replacement phone without Internet access. Three times Boris managed to evade parental rules in order to get a smartphone. Once he stole the credit card of his parents out of their wallet and bought a new smartphone online. The phone arrived a few days after the purchase without anyone's knowledge. After

the parents have discovered the loss of their credit card (roughly a week after the purchase and three days upon arrival of the smartphone) they have their card blocked. As the purchase was retraceable, suspicion quickly fell upon Boris, who promptly admitted the theft and the online purchase and handed in the smartphone. Another two times he saved his pocket money until he had enough money to buy a phone at a local shop. He was caught by his parents as he spent an unusual amount of time alone in his room. Boris' parents checked on him, discovered the phone and collected it. With the three smartphones, Boris had started new Instagram chats with boys at early puberty towards the goal of asking for nude pictures.

Boris indicated having an "intensive urge" he "cannot resist" to reach out to early pubescent boys online. Furthermore, during the clinical interview, Boris' cognitive distortions in relation to his SOG behavior became clear. He did not particularly report feelings of guilt, as he did "not use force" and "boys sent pictures voluntarily".

According to the proposed offender typology (DeHart et al., 2017), Boris would be classified as *cybersex-only offender*. As it was described by the literature (and conducted by Boris), cybersex offenders mostly request sexual photos of the victims, express interest in child-specific themes and have rather protracted conversations with victims. Meetings with victims are hinted without specification of time and place. The only difference is that Boris did not expose himself sexually to the victim, which has additionally been found to be associated with *cybersex-only offenders*.

Interview with parents

The mother had devolved asthma during Boris' pregnancy. Complications during delivery required a Cesarean section. After a burdensome pregnancy, Boris additionally required a high level of support from early childhood on. From age three (until age 11) Boris went to ergotherapy and logopedics because of impaired fine and gross motor skills and difficulties with speech production. Due to undescended testicles and cholesteatoma he additionally had to undergo surgery. After elementary school, he went to a school for children with special needs. He did not connect with peers and was bullied at times. He usually spent his leisure time with his parents. His parents tried to make him interested in several hobbies to get to know age-mates (e.g., theater group, music lesson, soccer). He had started a few things and quickly lost interest. Solely his enthusiasm for magic tricks remained. Since

adolescence he had consistently been in psychotherapy due to a recurrent depressive disorder (tenth version of the International Statistical Classification of Mental and Behavioral Disorders [ICD-10]: F33) and a generalized anxiety disorder (ICD-10: F41.1; Weltgesundheitsorganisation, 2015). A high risk of self-endangerment had led to an in-patient stay for six weeks at a child and adolescent psychiatry at the age of 17 and for four weeks at an adult psychiatry at the age of 20.

At the age of 16, Boris received his first smartphone and directly spent several hours a day with the device. The parents knew about his profiles on Instagram, Snapchat, and Facebook. At the age of 17, they monitored Boris' social media profiles for the first time and noticed that their son was solely chatting with younger boys and not with same-aged peers, as stated previously. They did not find any nude pictures. Boris told his parents that he was only making fun of the boys, without serious intentions. From then on, Boris' parents regularly checked his phone. As the parents did not observe any peculiarities on the phone, the regular checks ended when Boris turned 18. His smartphone consumption had increased continuously up to nine hours a day. At the age of 21, Boris' parents controlled the phone again and discovered hundreds of nude pictures of early pubescent boys. The parents directly deleted both the pictures and Boris' social media profiles. He received a replacement phone without Internet access. Boris did not give reasons for the collection of pictures. He apologized for his behavior and promised that he would never do something like that again. The parents felt highly overburdened by the situation and hoped that without smartphone Boris might lose interest in early pubescent boys. However, as they caught their son three more times with a smartphone, they arranged an assessment at the Institute of Sexology and Sexual Medicine in the hope of finding a quick solution for his behavior. In order to prevent that Boris secretly gets access to a smartphone, they paid close attention that no money was left and locked the wallet away at home. Furthermore he was only given pocket money if he exactly told his parents about the things he wanted to buy. The parents then either controlled the receipt or looked at the purchase.

Overall, the parents indicted that they felt in despair and blamed themselves for the SOG behavior of their son. They were deeply worried about his future and had great fear that he either had already been reported to the police or will be reported when boys confide in their parents.

Psychometric test battery

Results of the viewing-time paradigm and self-report questionnaires confirmed the existence of a hebephilic sexual interest (exclusive type). He indicated that he felt burdened by both his sexual fantasies involving early pubescent boys and the “urge to reach out to boys” in order to request sexual images. Sexual impulses were experienced as “uncontrollable”. History of direct offline CSA was negated.

Compared to values of standardization samples (see table 1), Boris showed clinically relevant values of loneliness (UCLA-LS-R; Russell et al., 1980), offense-supportive attitudes (BMS; Bumby, 1996; IBAQa; O’Brien & Webster, 2007), hypersexuality (HBI; Reid et al., 2011), impulsivity (BIS; Reise et al., 2013), and a reduced quality of life (EUROHIS-QOL; Schmidt et al., 2006).

Case conceptualization and treatment planning

Boris’ SOG behavior was contextualized as a dysfunctional attempt to self-regulate negative and aversive emotions by means of sexualized coping (Cortoni & Marshall, 2001). As Boris indicated that he felt as an outsider, a burden to his family, and even inferior to others, it has been assumed that he suffered from frustrated basic needs for appreciation and confirmation (Beier et al., 2005). Also he was socially isolated and had no plan for the future. Boris did not learn to deal with these adverse emotions in a functional way. Instead, in order to escape negative emotional states he used sexualized coping strategies and impersonated a magician in order to attract attention and feel valued.

Treatment planning was aligned according to the Good Lives Model (GLM; Ward & Gannon, 2006). The GLM assumes that individuals seek out primary goods (e.g., connection to wider social groups or intimate, romantic, and familial relationships). Secondary goods (e.g., joining a sports club), in turn, provide concrete means of securing primary goods. Within the GLM framework, sexual offending is conceptualized as an inappropriate attempt to satisfy primary goods. Treatment is therefore proposed to aim at satisfying offender’s primary goods in socially acceptable ways. Accordingly, therapy focused on Boris’ frustrated primary goods (i.e., lack of appreciation, inferiority, lack of connection) and his inappropriate way to fulfill his goods (i.e., SOG). Moreover, based on the risk-need-responsivity

Table 1: Outcome data on psychometric testing

Measure/Scale	Boris		Comparison sample		
	Pretreatment (T0)	During therapy (T1)	Mean (SD)	Cronbach's alpha	Reliable change index
<i>Quality of Life</i>					
EUROHIS-QOL (Schmidt et al., 2006)	15	25	32.64 ^a (4.37)	0.85	6.12*
<i>Loneliness</i>					
UCLA-LS-R (Russel et al., 1980)	54	43	37.06 ^b (10.91)	0.94	2.91*
<i>Cognitive distortions</i>					
BMS (Bumby, 1996)	99	79	51.80 ^a (10.93)	0.97	7.47*
IBAQA (O'Brien et al., 2007)	107	89	64.0 ^c (17.7)	0.70	1.31
<i>Impulsivity</i>					
HBI (Reid et al., 2011)	72	48	66.3 ^d (13.8)	0.95	5.50*
BIS (Reise et al., 2013)	78	59	62.8 ^a (9.2)	0.83	3.54*

Notes. To determine whether the magnitude of change for the included questionnaires is statistically reliable, reliable change indices were calculated according to Jacobson and Truax (1991). For each questionnaire, scores of Pretreatment (T0) and during therapy (T1), standard deviations, and alpha coefficients of standardized sample were used. Standardized sample refers to: ^a community sample, ^b college students, ^c males convicted of CSAI offenses, ^d participants of outpatient clinics who sought help for issues associated with hypersexual behavior. *Reliable change.

(RNR) principle (Bonta & Andrews, 2016), that proposes that interventions must be tailored to the individual risk factors, the following risk factors were derived that seemed to be relevant for Boris: criminological needs and automatic cognitions (offense-supportive cognitions), self-regulation deficits (emotion regulation deficits, depression, sexualized coping), lack

of emotionally intimate relationships with adults, and sexual problems (hebephilic sexual preference, sexual preoccupation). Given the high risk of relapse concerning Boris' SOG, the treatment plan included medication to reduce pressing fantasies and to increase behavioral control. Furthermore, it has been agreed that Boris receives a smartphone with limited Internet access, as he reported doubts regarding resumption of SOG behavior. Because of the distance between his place of residence and the Institute of Sexology and Sexual Medicine it has been agreed upon monthly appointments.

Treatment course

To the point of drafting this article, Boris has been in treatment for a year. Treatment plan included on-site sessions every month. On request, phone sessions were performed to reinforce progress or troubleshoot obstacles. Because of his cognitive abilities (on the edge of a minor impairment of intelligence), clear and simple language (i.e., easy to read) was used. The following provides an excerpt of treatment components.

Pharmacological intervention

Pharmacological interventions were realized via the in-house medical outpatient department at the outset of therapy. The somatic anamnesis and examination revealed no somatic illness. Treatment was begun with an opioid antagonist (Naltrexone) at 50 mg/d. Based upon the efficacy of opioid antagonists in treating urge-driven disorders (e.g., alcohol dependence), Naltrexone has been off-label-used for the reduction of sexual fantasies and urges to act out sexually (Ryback, 2004; Savard et al., 2020). Boris reported a "big relief" due to the decrease in sexual fantasies and the urge to reach out online to early pubescent boys. Masturbation frequency decreased to twice a week (from multiple times a day). Initial drug side effects included nausea, abdominal pain, headaches, and weight gain, which stabilized after three weeks. Fatigue was persistently experienced. The reduction in sexual impulses was experienced as sufficient for approximately seven months. Thereafter, Boris felt "pressing urges" to reach out online to early pubescent boys in order to receive nude pictures for masturbation. Likewise, his masturbation frequency increased to the level before pharmacological treat-

ment. Concurrently, he secretly purchased a smartphone and started Instagram chats with early pubescent boys (and same-aged peers). He did not impersonate as magician but acted as himself. He has not requested for nude pictures. His parents discovered the phone roughly a week after the purchase and confiscated it. Therefore, treatment with Naltrexone was discontinued. An androgen deprivation treatment was agreed upon, with 100 mg/d of oral cyproterone acetate. After three to four weeks, sexual fantasies involving early pubescent boys were perceived only infrequently and masturbation frequency dropped to once a month. The urge to connect with early pubescent boys online was reduced. He reported being greatly relieved due to this decrease in sexual fantasies and sexual impulses. However, he was initially bothered by an impaired ability to attain an erection and orgasm/ejaculation. During the appointments, both benefits and undesired effects of treatment with cyproterone acetate were discussed in detail. To Boris, advantages of the medication were to better concentrate on other things, and to turn his mind away from sexual urges. Disadvantages were the stated functional impairments (i.e., to get an erection and orgasm/ejaculation) and slight headache. He additionally indicated that he was afraid he might never be able to beget children. He was greatly relieved to hear that fertile sperm production usually re-establishes within a few months after stopping the medication. Hereafter, Boris decided to continue with the drug treatment.

Psychoeducation and individual sexual online grooming pattern

Sessions initially focused on Boris' SOG pattern. Psychoeducation concentrated on the development of sexual fantasies as rather stable phenomenon (Beier et al., 2005) and risk factors for sexual offending to help Boris to gain an understanding of his own SOG behavior. Boris initially perceived his SOG behavior as *Internet addiction*. It was therefore challenging for him to adopt an alternative approach. Yet the following behavioral pattern was formulated: Feelings of loneliness and lack of appreciation made him flee into the Internet where he pretended to be a magician. He soon felt seen and renowned by boys he sexually fantasized. Sexual arousal increased and made him request for pictures. In the short-term, he then felt relieved. In the long-run, he felt confirmed by his feelings of insufficiency. His individual risk factors that support his behavioral pattern were collated to derive concrete strategies for further action. This overview of risk factors

was very useful for Boris and helped him to perceive his SOG behavior not as mere Internet addiction.

Management of risk factors

Self-regulation deficits

Little by little, Boris realized the link between his negative feelings and lack of adequate coping strategies, which resulted in SOG. For clarification, theoretical foundations of the cognitive behavioral therapy were introduced (e.g., the relationship between emotion, cognition, and behavior; Dolan, 2002). During the sessions, alternative strategies for negative emotions were developed. Building up alternative strategies was perceived as highly demanding, as Boris firstly had no ideas on how to handle negative feelings except by SOG. Slowly he thought of strolling around, grabbing a coffee in his favorite café, or listening to his favorite songs. Besides, Boris was encouraged to start looking for a job in order to receive some professional recognition. He found a job as auxiliary gardener in a nearby garden center. He indeed liked the job, yet he felt highly stressed due to the unfamiliar work and heavy workload. He reduced the number of working hours and started keeping a weekly schedule to structure his days.

Lack of emotionally intimate relationships

Boris stated that he had trouble when reaching out to peers. He felt unformable, got insecure, and did not know what to say. Elements of social skills training were introduced (e.g., role-plays, practice at home; Hinsch & Pflingsten, 2015). At work, he was able to establish initial contacts with peers. Furthermore he took up a hobby (playing a music instrument) with the goal of becoming a member of the music band in his neighborhood. The band already knew about his objective and promised to accept him as member if he played a little better.

Hebephilic sexual preference, sexual preoccupation

The concept of acceptance as opposed to approval was introduced. As such, based on the acceptance and commitment therapy (ACT) it is expected that acceptance of the own sexual preference as a (relatively) stable and

constantly challenging part of one's personality can help to open new ways of thinking and help to refrain from sexual offending. Furthermore, therapeutic setting was consistently characterized by a respectful and non-judgmental communication about his sexual fantasies. Eventually Boris was confident enough to open up to his sisters about his hebephilic sexual preference and SOG behavior. He felt stressed by the fact that his sisters did not know anything about it – as if there was “something between” them. At the same time he was afraid his sisters might reject him. The sisters had no understanding for his SOG behavior. They felt disappointed and hurt that Boris requested nude pictures for sexual satisfaction. However, after long discussions, also together with their parents, they offered support in dealing with his sexual preference, which was highly appreciated by Boris. They, for example, suggested that he might call them when he experiences urges to reach out to early pubescent boys.

Offense-supportive cognitions

Boris' offense-supportive cognitions (e.g., “I did not use force” and “boys sent pictures voluntarily”) were challenged by imagery scenes. For example, under a false pretext someone requested a nude picture of you to use it for masturbation. Imagery scenes helped Boris to gradually understand that he misled boys. In this context, sexual rules and boundaries were discussed (Beier, 2018). It was compiled that rules and boundaries referred to the protection of integrity and/or individuality of another individual. Integrity was then violated if, for example, non-consenting individuals were involved (e.g., children) or sexual behavior was covered up. He eventually began to understand that force in the usual sense was not necessary to violate other's integrity.

Parents

Boris' parents had also been integrated in the treatment plan in order to reduce fears and increase family functioning. They initially believed Boris suffered from an *Internet addiction*, which – rather coincidentally – was restricted to SOG behavior to early pubescent boys. Hearing that Boris' SOG behavior was driven by his sexual preference was a shock at first. They blamed themselves and their parenting style. At the same time they expressed fears and feelings of excess strain regarding their son's sexual

interest and SOG behavior. Therefore, sessions with the parents – on-site and/or on the phone – included psychoeducative elements, addressed their feelings with regard to their son's sexual interest and sexual behavior, and helped to understand Boris' development of sexual delinquency. Furthermore the parents were emboldened to supervise and monitor risk factors. They decided to either forgo meetings with family or friends where early pubescent boys were expected or they attended and monitored Boris very closely. Besides, it was agreed that Boris continuously had only limited Internet access. In accordance with Boris, the parents additionally checked his smartphone on a regular but unannounced basis. They gave attention to an open and respectful communication and emphasized that they were at Boris' disposal when he needed someone to turn to. Furthermore the parents were encouraged to support Boris to transfer knowledge learned during sessions into his everyday life. For example, in role plays they together practiced certain social situations and strengthened Boris to find a new hobby. Interviews and phone sessions were discussed with Boris first, in order not to "endanger" the therapeutic relationship.

Interim evaluation and outlook

Boris has been in treatment for 12 months. Treatment has mainly focused on the reduction of Boris' individual risk factors. Here, above all, the development of appropriate strategies to handle negative mood states by pharmacologically reducing Boris' sexual impulses has been emphasized. Moreover, elements of social skills training were introduced to help Boris to better handle social interactions with peers. Sessions with parents have been held in order to increase familial functioning and to monitor risk factors. Overall, a positive interim conclusion can be drawn, as Boris has not requested nude pictures of early pubescent boys since the outset of treatment. Furthermore, scores of the questionnaires that were administered again 13 months after the initial intake assessment showed that Boris' depressiveness, loneliness, hypersexuality, and psychosocial impairment had dropped significantly at the second assessment (table 1). Boris' quality of life had also improved. However, at the second assessment Boris' questionnaire score has still been below average. This can partly be ascribed to Boris' wish for more autonomy and independence. Therefore, in the medium term, a residential program with high key supervision is envisaged. Furthermore, at the second assessment Boris still showed clinically signifi-

cant values of cognitive distortions. Taking the perspective of someone else is highly demanding for Boris. Further challenging his cognitive distortions will therefore be an important next step. Moreover, upcoming sessions will serve to consolidate his knowledge and to further support him to distance himself from SOG behavior. Besides, a relapse prevention plan will be developed including concrete steps to take in risk situations (Pithers, 1990). Such a plan will increase Boris' self-efficacy concerning abstinence from SOG. By virtue of Boris' cognitive abilities and the assumption of a sexual preference as rather stable part of one's personality, a long-term support will presumably be necessary to help Boris dealing with his sexual impulses.

Ethical approval

This case study has been conducted in strict adherence to established ethical guidelines for scientific research. The ethical considerations and principles governing this research align with recognized standards and regulations to ensure the welfare and rights of all participants involved (informed consent, anonymity/ pseudonymity and confidentiality, voluntary participation, beneficence and non-maleficence, transparent communication).

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3.2 Sexual Online Grooming of Children – A Short Overview of the Offender Literature

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Preparing potential victims for later sexual abuse has ever since been an integral part of child sexual victimization. Sexual grooming is thus a common epiphenomenon of child sexual abuse that has already been described for hands-on offenders in the pre-Internet era. With the advent of the Internet, sexual online grooming of children has sparked new interest in the topic. As a subcategory of online sexual solicitations (i.e., adults' online requests of sexual information or activities from minors irrespective of the following reaction), sexual online grooming refers to the process of approaching and gaining the trust of children for offenders' subsequent sexual gratification aiming at extended (online or offline) sexual contacts. The present chapter gives an overview over the recent literature on sexual online grooming, highlighting definitional challenges and reporting prevalence data from official crime statistics and victim surveys on the dark figure. The chapter outlines specifics of sexual online grooming and discusses offender subtypes including female groomers and grooming strategies as well as offender-directed situational prevention efforts. The chapter closes with short clinical propositions why sexual online grooming should be relevant for the treatment of sexual groomers, and it ends with an outlook on future research lines.

Keywords: online sexual grooming, child sexual abuse, sexual offending, offender

Introduction

For individuals who have offended with child sexual abuse, preparing their potential victims for the abuse and securing ongoing victim access while preventing victim disclosure and detection has ever since been an important part of the chain of offender-initiated events leading up to sexual victimization. This preparatory process is referred to as sexual grooming and has already been described for hands-on offenders in the pre-Internet era (Groth & Burgess, 1977; Ringenberg et al., 2022). It is thus not surprising that virtually every adult who has experienced past child sexual abuse retrospectively reports having experienced at least one sexual grooming behavior (Winters & Jeglic, 2022g). With the ever increasing availability of Internet access for everyone (and the data that thus have become available to researchers), this chapter will focus on *sexual online grooming of children*

(SOG; for reviews of offline sexual grooming of children see Ringenberg et al., 2022; Winters, Spriggs, & Jeglic, 2022). Hereby, SOG refers to the process of approaching and gaining the trust of children¹ online for offenders' subsequent sexual gratification. It can be construed as a subcategory of online *sexual solicitations* (i.e., adults' online requests of sexual information or activities from minors irrespective of the following reaction; De Santisteban & Guadix, 2018; Schulz et al., 2015) aiming at extended (online or offline) sexual contacts.

Typically, sexual grooming in offline and online contexts is comprised of a complex bundle of manipulative and/or deceptive tactics and strategies employed by individuals (but see Broome et al., 2024 for a critical discussion) with the aim to facilitate sexual victimization of minors, prepare their future victims for the impending sexual abuse, and prevent detection (Craven et al., 2006; Elliott, 2017; Winters, Spriggs, & Jeglic, 2022). Notably, it has been shown that sexual grooming has an incremental negative impact on victims beyond known health risks of experiencing child sexual abuse (Wolf & Pruitt, 2019).

The challenge of defining sexual online grooming of children

Although a large number of individuals who sexually abuse children utilize sexual grooming behaviors (between 30% and 45% according to an estimation by Winters et al., 2020), there is still only a relatively small body of empirical literature on the topic and an ongoing debate about how to define sexual grooming exactly (e.g., Bennett & O'Donohue, 2014; Winters; Kaylor, & Jeglic, 2022). This is largely due to the fact that – as long as concrete child sexual abuse behaviors have not yet been identified – sexual grooming is difficult to detect prospectively (Spenard & Cash, 2022; Winters & Jeglic, 2016, 2017). In contrast to blunt (online) sexual solicitations, sexual (online) grooming is hardly observable based on a single determining behavior (Seto, 2013). Due to its *preparatory focus* on (more or less subtle) manipulation, it is likely that law enforcement (and researchers alike) will only be able to identify SOG *after* child sexual abuse has already been committed or

1 Note that grooming behaviors in a broader sense can also be directed towards the offender himself, the familial caregivers of the victim, or the institutional/community context (Craven et al., 2006). However, these fall outside the scope of this chapter, which is focused on SOG in the narrow sense (i.e., direct grooming of the potential victim).

clear indications of offenders' sexual intent have become identifiable. Thus, to a certain degree SOG and normal adult-child interactions may resemble each other with the former differing from the latter only by its sexually deviant intention (although SOG may still remain below the threshold of criminal [sexual] behavior). Therefore, it is to be expected that adult-child activities will be interpreted in a different context once concrete child sexual abuse behavior has been identified (Winters & Jeglic, 2016, 2017).

Typical offender activities common both to sexual on- and offline grooming (Ringenberg et al., 2022) consist of attempts to entice children into abusive sexual activities with an adult. This can be accompanied by various forms of coercion. The aim of these behaviors is to gain trust of the potential victims and to isolate children via depriving them of their social support and protection by their peers and family. To this end, secrecy is a frequently employed means to secure privacy and solitary access to the groomed child by the offender. To facilitate the ultimate aim of child sexual abuse, the whole process is progressively sexualized with the offender trying to introduce and facilitate sexual activity with the child while desensitizing the potential victim (Elliott, 2017).

One of the challenges in defining sexual grooming stems from the fact that it is a complex sequence of varying approach behaviors that is dependent on the person seeking to commit child sexual abuse, the targeted victims and their living circumstances, and the situational grooming context. Here, for example, the age and gender of the groomed children, their relationship with the abusers, the offenders' effectiveness in reaching their goals, the offenders' fears of detection, and the time frame of the grooming attempts may play important roles in determining the exhibition of the specific sexual grooming behaviors. In line with this notion, Winters, Kaylor et al. (2022) have proposed a universal definition of sexual grooming behaviors based on their five-stage sexual grooming model, which is an attempt at integrating prior grooming models (Winters et al., 2020; for a detailed overview of sexual grooming models see Winters & Jeglic, 2022a):

“Sexual grooming is the deceptive process used by sexual abusers to facilitate sexual contact with a minor while simultaneously avoiding detection. [1] Prior to the commission of the sexual abuse, the would-be sexual abuser may select a victim, [2] gain access to and isolate the minor, [3] develop trust with the minor and often their guardians, community, and youth-serving institutions, and [4] desensitize the minor to sexual content and physical contact. [5] Post-abuse, the offender may

use maintenance strategies on the victim to facilitate future sexual abuse and/or to prevent disclosure” (Winters, Kaylor et al., 2022, p. 7; the numbering of the five model stages in brackets have been added by the author for ease of comprehension).

This five-stage model has been validated using expert ratings of the relevance of single behaviors for sexual grooming of children (Winters et al., 2020) and has informed the development and pilot-testing of the Sexual Grooming Scale-Victim Version (Winters & Jeglic, 2022g). In a recent study designed to identify red flag indicators of sexual grooming of children based on their scale, Jeglic and colleagues (2023) found that, although potential sexual grooming indicators were highly overlapping between comparison samples of individuals with or without a history of sexual abuse as a child, indicators clearly differed in terms of reporting frequencies and the sheer amount of experienced behaviors. Expectedly, the most distinguishing behaviors that differentiated non-abusive adult child-interactions from sexual grooming behaviors were related to desensitizing for physical touch and sexual content, separating the child from its peers and family, and post-abuse maintenance. These findings may pinpoint an important oversight in conceptualizing such a broad definition of sexual grooming. Elliott (2017) already alerted to the fact that it is equally important to define what sexual grooming is *not*. To this end he proposed that

“any definition of grooming should distinguish it from other processes in the commission of a sexual offense [...]. The grooming process, however, should be distinct from any targeting or solicitation phase, since a person can only be groomed after that person has been targeted for approach and contact has been made. Similarly, distinction should be drawn from any post offense maintenance phase” (Elliott, 2017, p. 84).

Following this important recommendation, the first and the last stage in Winters, Kaylor et al.’s (2022) five-stage model might be considered irrelevant. Removing these stages should increase the distinctiveness of the grooming definition by focusing on the core sexual grooming activities of a) maximizing victim potentiality and b) careful disclosure of the offender’s ultimate sexual intentions (Elliott, 2017).

Prevalence of sexual grooming of children

Official crime data

Hitherto, prevalence data for sexual (online) grooming largely rest on educated guesses and are likely not reliable. The official prevalence of sexual grooming of children is dependent on national legislation, which differs in terms of the penalized behaviors, age thresholds, and law enforcement activity. In Germany, only recently in 2021 a law specific to sexual grooming of children (victims below 14 years of age) has been introduced (§176b Penal Code; for an overview of the complex US grooming legislation see Winters & Jeglic, 2022b). Prior to this date, relevant behaviors had been subsumed under a subsection of behavior penalized by the general law against child sexual abuse (§176 Penal Code). With 3,539 cases of sexual grooming of children prosecuted by the police, respective official crime statistics (Bundeskriminalamt, 2021²) revealed an increase of 35% compared to the prior year. Since 2016, sexual grooming of children has been following an exponential increase of officially detected cases in Germany, and the caseload for law enforcement has grown thrice as large as it had been a decade ago. However, although most Western jurisdictions have some form of legislation that enables to prosecute sexual grooming behaviors, the biggest problem from the perspective of law enforcement is how to prove legally relevant intent and behavior *before* the act of child sexual abuse has occurred – as laid out above referring to the problems of defining sexual grooming of children.

Victim crime survey data – the dark figure of sexual online grooming of children

With the advent of the Internet, adolescents' (below 18 years of age) unwanted sexual solicitations of any kind have become a common experience. According to a recent meta-analysis, approximately one in nine juveniles faces such sexual solicitations (Madigan et al., 2018). Specifically, in a large sample of more than 1,100 North-American undergraduate students (Greene-Calozzi et al., 2020), one quarter retrospectively reported having conversed with adult strangers online as a minor. Out of these, 65% had

2 Offence key #131400 in the official German crime statistics.

experienced sexual solicitation from adult strangers and 23% indicated having had long, intimate conversations with them that involved SOG. Notably, 38% of those who had engaged in such an intimate online conversation met the adult stranger in-person, and 68% of those who had met their adult stranger conversation partners reported physical sexual intercourse with them. In a recent nationally representative US survey of young adults' retrospectively reported childhood experiences of online and technology-facilitated abuse, 5.4% out of a sample of $N = 2,639$ participants indicated SOG from groomers they were predominantly acquainted with (Finkelhor et al., 2022). On average, girls experience higher levels of SOG, and SOG levels generally increase with victim age, while the strategy of progressive sexualization showed the closest associations with online sexual solicitations and sexual interactions (Gámez-Guadix et al., 2021).

Specifics of sexual online grooming of children

In their scoping review, Ringenberg and colleagues (2022) identified behaviors that were specific for cases of SOG. Although pre-Internet child sexual abusers also needed to take precautions in order to manage the level of detection risk they were willing to put up with, online child sexual groomers have to engage in much higher levels of risk assessment as they cannot be sure with whom they are interacting when engaging in anonymous contacts across the Internet. Not only that online child sexual groomers cannot directly ascertain whether the personal information shared by the interlocutor is valid, they also have to be certain that they are not getting trapped by law enforcement personnel posing as underage decoys. Moreover, online child sexual groomers need to be aware that the evolving possibilities of the digital media from their point of view at the same time offer new ways to leave traces of their SOG attempts that can be used as digital evidence against them by law enforcement (e.g., chat protocols, IP-addresses, profile data, identity profiling from online behaviors, tracking of exchanged pornographic media, etc.).

At the same time, SOG offers new possibilities particularly for speeding up the grooming process (as well as the risk assessment of the victim's environment which often starts in the first 20% of the conversations; Black et al., 2015). For example, whereas sexual offline grooming commonly was a slow process over months or years, online access shows that SOG may take only hours and seldomly lasts longer than weeks. Moreover, in the

pre-Internet era, substance use was a means of lowering offender inhibitions, whereas in the post-Internet era substances are used to disinhibit the victim. Additionally, as physical proximity is not a necessity in SOG, offenders often groom multiple prospective victims at the same time, while using online applications and cell phones ensures near constant victim access (which is difficult to achieve in offline grooming). During the pre-Internet era sexualizing grooming behavior was characterized by pushing the boundaries of physical proximity from innocuous to inappropriate touching, whereas in the online environment this shifted to crossing the boundaries between exchanging innocuous vs. sexual conversation and media content (Ringenberg et al., 2022). The possibility to speed up the process of SOG in online environments leads to the paradoxical finding that most online sexual solicitations follow a rather blunt and direct approach where the sexual intent of the offender becomes apparent very early in the process (Winters et al. [2017] report introduction of sexual content in the first 30 minutes of child decoy SOG transcripts in 69% of cases they examined). This renders it questionable whether such “blitz”-type approaching behavior still counts as SOG (Kloess et al., 2019), thus once more highlighting the above mentioned problems in operationalizing SOG.

In sum, as corroborated by a small scale qualitative interview study from Stelzmann and colleagues (2020), it seems likely that offenders perceive the online environment as relatively safe medium for their purposes, offering the advantages of 1) easy access to potential victims, 2) a low contact threshold, and 3) facilitated use of manipulative SOG strategies. This resonates with the *Lawless Space Theory* of child sexual exploitation material use (Steel et al., 2023), which posits that online offenders will utilize a perceived lawless space that best meets their psychosexual needs in the most frictionless way and where habituation will reduce the perceived risk while normalization will increase comfort in a particular lawless online space. This way, SOG may be framed as a transitory phase between “passive” online (i.e., child sexual exploitation material use) and “active” on- or offline (i.e., direct manipulation of children into sexual abuse activity) victimization of children (Fortin et al., 2018). Nevertheless, it has to be kept in mind that SOG offenders are not necessarily at the same time consumers of child sexual exploitation material and vice versa.

Sexual online grooming offender subtypes

A popular distinction in SOG subtypes refers to fantasy- vs. contact-driven offenders as it turned out that not all individuals who sexually offend online are indeed interested in gaining offline physical access to their victims. Briggs and colleagues (2011) thus distinguished between 1) *fantasy-driven offenders* reaching sexual gratification with behaviors restricted to the online environment (e.g., cybersex, voyeuristic and exhibitionistic online behaviors) as opposed to 2) *contact-driven offenders* aiming for sexual fulfillment in the offline world yet starting to desensitize their online victims for contact sexual abuse in the online environment and trying to progress to physical offline meetings. This simple categorical distinction between fantasy-driven (i.e., non-contact) and contact-driven offending behavior, however, has been criticized for not reflecting the multiply of child sexual exploitation offenses that have become possible since the advent of the Internet (i.e., any single or combined behavior involving consuming, sharing, producing, selling, and streaming of, or taking part in, child sexual exploitation material), thus questioning the usefulness of this popular dichotomy.

Empirically, it turned out that the proposed distinction is ambiguous as both groups (at least) initially engage in subjectively sexually rewarding online behaviors that only under specific circumstances may lead to offline sexual abuse. More importantly, no clear SOG pattern distinguishing between both types could be identified (Broome et al., 2018); thus more fine-grained typologies have been proposed³ such as 1) *cybersex-only offenders* (fantasy-driven), 2) *cybersex/schedulers* (mixed type), 3) *schedulers* (contact-driven), and 4) *buyers* (contact-driven; DeHart et al., 2017). Broome and colleagues (2018) argued that an older typology proposed by the European Online Grooming Project (Webster et al., 2012) might be more useful: 1) *Intimacy-seeking groomers* view contact with victims as being consenting and intimate and have frequent and prolonged conversations with sexual content being introduced slowly, leading to the arrangement of offline meetings to further develop the relationship. 2) *Adaptable groomers* regard their victims as being mature and capable for consent while limiting the development of online relationships and focusing on detection risk management. Resembling DeHart and colleagues' (2017) cybersex/schedulers group, they adapt their communication style to the victim with length of

3 For a detailed overview of sexual grooming typologies see Winters and Jeglic (2022d).

contact depending on victims' responses. This group presents as a mixed-type of online/offline offenders. Finally, 3) *hypersexual groomers* introduce sexual content very early in the grooming process and are in possession of child sexual exploitation material and extreme adult pornography. They engage in identity deception and do not try to develop relationships with their victims whom they desensitize using sexual chat to reach online sexual gratification as fast as possible. Suggestions of offline contact occur less frequently than in the other two subtypes (Webster et al., 2012).

Female sexual online grooming offenders

Although females who sexually offend are a relatively rare phenomenon in general, there is preliminary evidence, though limited to case studies and media reports, that some women also employ sexual grooming of children primarily as teacher-lover or sex trafficker subtypes (Kaylor et al., 2022). Preliminary sexual grooming-specific prevalence data show that from 115 examined victims of sexual grooming of children, 11 (9.8%) reported that they had been groomed by female offenders (Winters & Jeglic, 2022f). Similar to male groomers, their most frequently used SOG behavior was related to desensitization to sexual content and physical touch with the large majority of female groomers having exposed their naked bodies to their victims. Notably, many female groomers in this study were reported to be minors themselves (Winters & Jeglic, 2022f). Moreover, in a review of all female-perpetrated child sexual abuse cases from 2000 to 2016 in the UK (Darling et al., 2018), the majority were committed by educators and with indications of sexual grooming being present in two thirds of all cases. Here, the data suggested that the female offenders established close relationships with their victims and sent flirtatious text messages before the abuse occurred.

Sexual online grooming strategies

In terms of SOG offender strategies, two broad approaches can be distinguished based on a sample of $N = 81$ cases of real child victims involving SOG (Joleby et al., 2021): using pressure (i.e., threats, bribes, or nagging) vs. sweet-talk (i.e., flattery, acting as friend, expressing love), with the former being used roughly twice as frequently as the latter. On average,

offenders who used pressure were younger and targeted older children than those who used sweet-talk (Joleby et al., 2021). Using the more fine-grained Multidimensional Grooming Questionnaire consisting of five subscales, Gámez-Guadix and colleagues (2021) found the following prevalence rates for specific SOG tactics (as reported by $N = 1,704$ boys and girls aging from 12 to 15 years, who had been sampled from randomly selected Spanish schools): interest in the victim's environment (18%), use of deception (17%), sexualization (11%), gift giving (8%), and aggression (7%).

Most research shows that SOG tactics (except from the use of technical possibilities of the Internet such as sharing digital media) are comparable to offline settings. As Winters, Spriggs et al. (2022) describe, future child sexual abusers initially aim for selecting physically or psychologically and socially vulnerable victims who are most susceptible to their manipulations (e.g., young, small, socially withdrawn children who lack self-esteem and parental supervision). This is followed by attempts to gain access to the victim and to (physically and emotionally) isolate the targeted victims from their parents by, for instance, providing the child with deprived emotional needs and/or manipulating their caretakers. In the next step, trust and a close relationship as well as cooperation with the child are sought to develop. For example, this is often realized via pleasant interactions with the child, posing as an insider of the child's community and making the child feel cherished and special. Once the relationship has been built up, sexual conversation and physical proximity will increasingly be introduced in order to desensitize the child for the sexually abusive intentions of the perpetrator. To this end, the groomer may use sexualized joking and conversation, pretentious sexual education, or the introduction of child sexual exploitation material while inappropriate physical contact will be escalated. Finally, subsequent to the sexual abuse, the abuser may strive to maintain ongoing access to the victim (e.g., by encouraging secrecy about the abuse, normalizing the abuse, distorting standards for physical contact between children and adults, making children feel responsible for the abusive behavior, or threatening them).

These tactics have been backed up by linguistic research that showed frequently used word collocations in SOG mapping onto the different strategic elements such as isolation, approach, sexual gratification, and compliance testing (Lorenzo-Dus et al., 2020). In terms of victim sex differences, offenders targeting girl victims built more rapport and were less sexually explicit, thus approaching sexual topics more indirectly and invested more time into risk assessment, than offenders targeting boy victims, whereas the

latter group was older but pretended to be younger (in a child decoy study from van Gijn-Grosvenor & Lamb, 2016).

In sum, while much of the perpetrator research is concerned with theoretical and conceptual characteristics of sexual grooming of children (e.g., Winters, Kaylor et al., 2022), the resulting digital artefacts of SOG such as communication transcripts generated by law officers posing as child decoys on the Internet (e.g., Lorenzo-Dus et al., 2020), or small-scale interview studies with SOG offenders (e.g., Stelzmann et al., 2020), there is still a dearth of larger-scale quantitative empirical research that directly samples groomers from community or forensic populations. Given the fact that most research on SOG offender strategies relies on studies using interactions with police decoys posing as victims, initial evidence that SOG involving real children includes more overt persuasion and extortion than in decoy settings has to be taken into account (Joleby et al., 2021).

Prevention of sexual online grooming of children

As SOG occurs prior to child sexual abuse, it should be of high interest for offence prevention. So far, prevention efforts for SOG have primarily concentrated on primary prevention efforts addressing the general population of youth and their parents before SOG occurs. Empirically, a systematic review shows that some educational approaches for the prevention of online child sexual abuse are indeed able to demonstrate knowledge retainment for online safety; however, this was not accompanied by reductions in risky online behaviors (Patterson et al., 2022). As of yet, methodologically rigorous tests of the effectiveness of such educational programs in reducing online child sexual abuse (and, specifically, SOG victimization) are absent from the literature. In terms of offender-directed secondary prevention (i.e., prevention of situationally imminent or ongoing abuse), Kamar and colleagues (2022) designed a real-life online experiment during which three honeypot chat bots simulated young female users in popular online chatrooms frequently used by youth and sexual online groomers over a period of ten weeks. Chat bots had been experimentally manipulated to convey 1) an active guardianship style to a grooming suspect, 2) a passive style of parental guardianship, or 3) no guardianship as a control group. Findings indicated that online socializing with peers in the absence of any parental supervision increased persistent SOG. In contrast, SOG was less likely to be continued once groomers were led to believe that their targets were guarded

by active or passive parental presence. This line of research on situational prevention approaches seems promising in terms of being incorporated into technical solutions (e.g., detection software for online SOG such as Microsoft's Project Artemis; Microsoft, 2020) and behavioral trainings on safe online communication for parents and adolescents alike.

Sexual online grooming of children and treatment

It has been proposed that sexual (online) grooming behavior should become a necessary part of the treatment of individuals who have sexually offended as well as of victims of sexual (online) grooming (Craven et al., 2006; Winters et al., 2020). In offender treatment, the identification of individual grooming tactics can inform therapeutic interventions targeting sexual-offense-relevant cognitions and should be helpful in determining dynamic risk factors as well as the underlying motivational drivers and/or criminogenic (as well as general human) needs of a child sexual abusing individual. This information might thus also be utilized as an integral part of risk management activities such as, for example, identifying critical phases from the offender perspective for relapse prevention. By recognizing and gaining insight into SOG strategies that offenders are engaging in to facilitate their offenses, they might be better prepared to deal with problematic sexual needs in the future (Winters & Jeglic, 2022c).

Future directions

Child sexual abuse has likely always included sexual grooming of children – as such it is an “old” phenomenon known to clinicians and researchers in the field. However, reading the literature on SOG one realizes that this is a topic that has sparked a lot of interest since the advent of the Internet. One gets the impression that theoretical and overview articles on the topic (including the present one here) outnumber primary (especially offender-related) empirical research on SOG. It becomes obvious that SOG is a multifaceted phenomenon that is difficult to define and, thus, hard to subject to sound research and effective legal prosecution. In such a preliminary stage of research where distinct sexual grooming definitions are scientifically not agreed upon and well-established measures of SOG are lacking, many pressing forensic research questions remain yet empirically

unanswered. For example, it is unknown whether and how SOG is related to reoffending risk. Other open lines of research may be seen in extending online sexual grooming to juvenile (as the most [sexually] active population on the Internet), adult, and female perpetrators of sexual grooming as well as to other contexts such as organizations, institutions, and organized crime. Quantitative longitudinal studies on the time course of SOG and its specific outcomes are virtually non-existent. Thus, a more refined understanding of the construct of SOG might become an integral factor in the prevention, investigation, prosecution, assessment, and treatment of sexual offenses (Winters & Jeglic, 2022e). However, future research will have to show whether the construct of sexual (online) grooming of children will indeed turn out as a theoretically valuable, practically useful, and empirically corroborated addition to the literature or whether it rather remains an epiphenomenon of sexual offending (against children).

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3.3 Hedonistic Utilitarianism: The Strategic Use of Digital Media along the Online-Offline Continuum of Sexualized Violence

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The present study examines how offenders targeting children and adolescents strategically use digital media when committing acts of sexualized violence along the online-offline continuum. Even offenders who are previously known to their victims use digital media extensively. The choice to instrumentalize digital media in order to initiate, threaten, exploit, and humiliate victims demonstrates the rationale of offenders when committing acts of digitally supported violence. Through digital media, offenders can assume the power of interpretation over their victims' situations. The ways in which digital media is used to commit violence along the online-offline continuum are a direct manifestation of the hedonistic utilitarianism demonstrated by offenders: a disposition characterized by the weighing of pleasures ("mental states") and intrinsic value expected from using digital media against the risk of an outcome subjectively experienced as uncomfortable. Thus, sexualized violence using digital media goes beyond the traditional understanding of sexual online grooming.

Keywords: sexual online grooming, mediatized sexualized violence, child sexual abuse material, gaslighting, hedonistic utilitarianism

Introduction

Academic and public discourses define sexual online grooming (SOG) as virtual interactions with minors for the purpose of exploitation, in other words, the process of preparing and establishing a framework for sexual abuse (Vogelsang, 2015; Broome, 2018; Lorenzo-Dus & Kinzel, 2019). The term SOG, coined in the early 2000s, tends to be associated with offenders who do not previously know their victims (Whittle, 2014; Kloess et al. 2018; Jonsson et al., 2019; Sorell & Whitty, 2019). According to this definition, the ultimate goal of SOG is often violent acts committed offline. However, academics and crisis intervention experts tend to focus on digital forms of contact and communication.

Experts tend to fundamentally differentiate between SOG and sexualized contact (grooming) arranged offline, which may include child sexual abuse that is initiated in person. However, due to the spread of digital media as a standard means of communication, online activity can also play a role

in cases of child sexual abuse within the family. The same can be said for other forms of mediatised violence, such as sexualized cyber-bullying, cyber dating abuse (Machimbarrena et al. 2018), the use of child exploitation material (Franke & Graf, 2016), and, in some cases, online sexual victimization (Kloess et al., 2019). Nevertheless, these forms of sexualized violence, together with SOG, can be collectively categorized as “sexualized violence using digital media” (Vobbe & Kärgerl, 2019) or “mediatised sexualized violence” (Vobbe & Kärgerl 2022).

Despite increased examination of offender strategies and the experiences of SOG victims, there has been considerably less research on the ways in which digital media is used to commit sexualized assaults along the online-offline continuum¹.

The present study

Against this theoretical background and the aforementioned research gap, the following report employs a social-psychological perspective on how offenders who target children and adolescents strategically use digital media when committing acts of sexualized violence along the online-offline continuum. It will also consider the corresponding consequences experienced by victims.

The following discourse is based on the qualitative empirical research project “HUMAN. Entwicklung von Handlungsempfehlungen für die pädagogische Praxis zum fachlichen Umgang mit sexualisierter Gewalt mit digitalem Medieneinsatz“ (HUMAN. Development of recommendations for pedagogical practice when dealing with sexualized violence using digital media), which was carried out by the SRH University Heidelberg between 2017 and 2021 and was funded by the Federal Ministry of Education and Research of the Federal Republic of Germany. Part of the multimodal data material was subject to a second evaluation for the present article, with the aims of 1) showing the spectrum of possibilities to instrumentalize digital media in the context of sexualized violence against children and adolescents

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- 1 Following Nicholas Negropontes’ concept of the post-digital society, we assume that online and offline living environments in the late modern industrialized countries essentially overlap with one another. Most perceived offline activities have a digital component and vice versa. This spectrum of activities can be conceptualized as an online-offline continuum, on which the actions are differently weighted according to their online or offline relevance.

and 2) demonstrating the ‘appropriateness’ of using these instruments in the context of the dynamics of violence.

Methods and materials

The analysis is based on 46 case reports which document psycho-social crisis intervention in cases of sexualized violence using digital media. These case reports were compiled in and by ten counselling centers across Germany for the purpose of this research project. They contain information on specific acts of violence, strategies used by offenders, consequences experienced by victims, and offers of help from the centers.

The counselling centers were selected according to a case-typological-qualitative sampling with a focus on specialization in sexualized violence in the form of a public mandate to act. The following descriptions are the results of a secondary analysis, bounded by the focal points of the documentation chosen by the centers themselves. On the other hand, the data contains extensive insights into histories of violence and subsequent intervention processes. According to the premise of reflexivity (Langer et al., 2013), we interpreted the data by means of a typology designed by Kelle and Kluge (2010), which originated in the Grounded Theory Methodology (Glaser & Strauss, 1998).

Twenty-seven case reports identify female victims, while 19 reports identify male victims. The majority of the offenders are male ($n_{\text{male}} = 32$, $n_{\text{female}} = 2$). In 12 cases, the violence was perpetrated by a group whose gender distribution is not clearly documented. The exact age of the offenders is not documented; however, the reports distinguish between legal adults ($n = 31$) and minors ($n = 11$). In four cases, no information is listed regarding the offender’s age category. Most reports list the ages of victims, with the majority of victims falling between 11 and 14 years of age ($n_{0-3\text{-years-old}} = 1$, $n_{4-6\text{-years-old}} = 3$, $n_{7-10\text{-years-old}} = 8$, $n_{11-14\text{-years-old}} = 21$, $n_{15-18\text{-years-old}} = 9$, $n_{>18\text{-years-old (abuse started earlier)}} = 1$, $n_{\text{age unknown}} = 3$).

Four case reports describe the offenders and victims as online acquaintances, whereas 12 case reports indicate that the offenders and victims come from the same family. In 21 case reports, the offenders and victims belong to the same immediate social environment.

Results

The following sections present the different ways in which digital media is instrumentalized along the online-offline continuum of sexualized violence.

1. Digital media as an instrument of initiation and extortion by offenders previously unknown to their victims

In 14 of the 46 case reports, in which one or more of the offenders was previously unknown to their underage victims, the offender used digital media to initiate sexualized acts.

Digital media as an instrument for requesting nude images

Explicitly violent acts could not be confirmed in three of the aforementioned 14 cases. Nevertheless, the victims in these three cases were persuaded to send nude images or perform sexual acts, in some cases on camera. In the absence of verified violence, these three cases were evaluated based on the limited, sometimes ambiguous, information available. Because the interactions took place online, the ages of some of the offenders are completely unknown and/or it is unclear to what extent the alleged instigators were aware of the ages or capacity for consent of their counterparts. These cases also appear to lack typical threatening or grooming strategies. For example, the instigators include a pornography distributor residing abroad, who directed an actor to participate in a fee-based chat with an intellectually disabled 13-year-old boy.

The boy has access and contact to porn providers and performers via a messenger. He regularly receives pornographic content, e.g., masturbation videos or videos with anal penetration. In some cases, he forwards these clips. He also sends photos of himself to this number (case report 14).

Notably, aggressive automated spam bots, from which such chat contacts can arise, have recently flooded Instagram (Noll, 2019).

Digital media as an instrument for targeted sexual online grooming

Another nine out of the aforementioned 14 cases did result in violent acts or attempts thereof, the production and dissemination of child exploitation materials², and the attempt or actual child sexual abuse. Most of the affected persons experienced multiple forms of abuse. In one case, a ten-year-old was approached off and on by 70 different, presumably male, adults. In these nine cases, digital media served as a typical grooming instrument, encompassing the complete spectrum of online-grooming strategies described by Lorenzo-Dus et al. (2016): deceptive trust, compliance testing, withdrawal, reverse psychology, explicit and implicit sexual gratification, and isolation. Offenders feigned romantic relationships with their victims, which evolved into dominant/submissive relationships with sadomasochistic elements with the offender acting as the 'dom'.

He slowly began to build up a relationship of trust with S. by listening to her problems with her parents, giving her advice and also helping her with her schoolwork. This is how he created S.'s emotional dependence. Then he started to manipulate S.: she was his porn-wife, he was her master and S. was responsible for his sexual satisfaction (case report 23).

In such cases victims who attempt to leave the relationship are often blackmailed with the threat that damaging chat threads, implicating them in their own abuse, will be exposed or that abuse images will be disseminated in their social environment. Occasionally the offenders follow through with these threats. For example, in one case the offender sent an abuse image to 5,000 contacts.

2. Digital media as an instrument for initiating cyber dating abuse

In two cases, situations that began as online dating led to direct contact abuse. The offenders used digital media to initiate contact with the victims and to arrange in-person meetings. The evidence in these cases did not indicate the use of traditional grooming strategies. For example, there was no indication that victims were pressured into meeting their eventual abusers,

2 With the term 'child exploitation material' we opt for an open understanding of sexually abusive photograph and video recordings. In accordance with Kuhle and colleagues (2018), we also include sexualized but non-explicit material that is used for the sexual satisfaction of the offender or the sexual humiliation of the victim.

and presumably the meetings were planned consensually. In both cases, the victims later came forward about the violent acts committed against them. The subsequent trials were each characterized by victim-blaming. The victims were held jointly accountable for the abuse they suffered, alongside the offenders, based on the fact that they were not coerced into meeting their eventual abusers. This had a mitigating effect on the perpetrators' sentences.

The proceedings should finally be opened after two years of waiting, so that the family can close the case. The offender has confessed so far. However, the public prosecutor's office blames the girl for her part in the crime (case report 16).

On the basis of our data, we assume that sexual offenders, being aware of the increasing popularity of online dating, are incorporating undercurrents of victim-blaming into their tactics. For example, in some cases chat histories have been presented in the context of the offender's legal confession to prove the consensual nature of a date.

3. Digital media as an instrument in the initiation and progression of sexualized violence by offenders previously known to their victims

In nine cases, digital media served as the instrument of initiation and/or in the progression of sexualized violence by offenders previously known to their victims.

Digital media as an instrument for targeted sexual online grooming

Five of the aforementioned nine cases diverged from the definition of SOG used by Kloess et al. (2019) in that grooming activities and sexual exploitation took place exclusively online despite repeated and ongoing interactions offline in settings such as sports clubs or schools. With one exception, in which an offline encounter led to severe child sexual abuse, the offenders' in-person behaviors are either unknown or they maintained a noteworthy distance from their victims.

The perpetrator used digital communication specifically to groom and put pressure on the boy. In contacts during sports training, he paid no special attention to the boy. (...) He reinforced the relationship digitally.

He paid special attention to the boy, asked him intimate questions and demanded intimate photos. After the first sexual abuse, he used recordings to continue pressuring the boy (case report 11).

The victims tended not to know how many others in their social circles had been sexually abused by the same offender until the crimes were exposed. The offenders interacted with their victims throughout the day, often very regularly, thereby deepening the victims' senses of dependence and ambivalence.

Digital media as an instrument for continuing contact and building emotional pressure despite any evidence of particular grooming strategies

In four of the remaining cases, there was no evidence of a particular grooming strategy. In these cases, offenders contacted victims online despite their previous offline acquaintanceships. They sometimes threatened and blackmailed the victims into sending them child exploitation material. The offenders used digital media to build emotional pressure against the victims. In two cases, offenders used child exploitation material to increase pressure on the victims and force offline sexual assaults. In some cases, offenders also distributed images of the victims from these assaults. In one case, the offender used digital media to continue the sexual assault for years after the victim had moved away.

4. Digital media as an instrument by which offenders use child exploitation material to shame victims who were previously known to them

In eight cases, youth and adult offenders, who were previously known to their victims, used digital media to distribute child exploitation material. In all of these cases, the dissemination served to expose and humiliate the victims.

In two cases, SOG preceded dissemination of the compromising images. Through the use of deceit (fake online accounts), deceptive trust, and sexual gratification, offenders misled victims into sending them nude photographs of themselves for the purpose of dissemination. In five cases, the offenders recorded an incidence of abuse or sexual assault. This is noteworthy, as the recorded incident served as incriminating evidence of a serious offense committed by the offender.

Public shaming and humiliation harm the victim by attempting to damage their reputation and expose them to mockery or other forms of social sanction. In such cases, public shaming and ongoing harassment in a victim's social environment may take the form of attacks on their sexual identity based on heteronormative gender attributions. For example, a female may be accused of being too sexually uninhibited or called a "slut", while a male who does not conform to a hypermasculine, heterosexual dominant stereotype may be labeled as "gay".

It was part of the offenders' plan to portray D. as a youth who engages in sexual acts with men. The filming was thus a central part of the perpetrators' strategy. Against the background of the family feud, it can be assumed that the targeted publication of the video (or the threat of it) was intended to violate or destroy not only D.'s honor but the honor of his entire family (case report 6).

5. Digital media as an instrument of (commercial) sexual exploitation in the context of child sexual abuse and organized sexualized assault committed offline

In six cases, digital media supplemented (commercial) sexual exploitation in child sexual abuse that was committed primarily offline. This type of abuse can take two distinct forms. In some cases, digital media acts as the bait for in-person grooming. For example, an offender may offer to give a victim an electronic device to enhance the victim's social status or as a reward for sexual favors. In other cases, acts of sexual abuse are recorded to produce child exploitation material. In all of the latter cases, there is a clear link to organized or ritual exploitation. Corresponding case documentation indicates that victims were actively prostituted by their families or sexually abused in connection with cults.

She described the uncle as the "organizer" of the ritual abuse, because in her memory the acts were committed against her by persons other than the uncle. She had discovered the files by chance on her own PC a few years ago and at that moment could no longer remember how they had gotten there. She then contacted the online counselling service (case report 13).

Where there is indication that child exploitation materials were produced and disseminated, the primary objective in these cases appears to have been

commercial – sale or trade of the images – rather than the humiliation of the subject. Sometimes the victims possess video recordings of their abuse without knowing who gave them the videos in the first place. In accordance with the ritual character of the violence, one can hypothesize that the compromising material was leaked to the victim in order to imprison them in the organized structural violence, to trigger them, to control them from a distance, or to alienate them and, in doing so, to hinder them from coming forward about the abuse. Analogous to current research insights about organized violence, these cases are sometimes particularly complex due to the traumatization of the victims (Nick et al., 2018). The trauma can lead to victims suffering from dissociation and split personalities, thereby further complicating efforts to assess the scope of the abuse. Experts have reported that they interacted with different personalities when treating victims and, therefore, could not evaluate the effect of the therapeutic interventions:

A therapist diagnosed a multiple personality in the person affected by violence (...). The voice and also the mood changed several times during the conversation. At the end I was very unsure whether the caller was really 19 years old or rather older. Perhaps it was simply the 19-year-old part who called me (case report 41).

6. The interplay of problematic digital media conduct and suspected child sexual abuse between persons previously known to one another

In nine cases, either problematic digital media conduct led to suspicions of child sexual abuse or verified child sexual abuse led to speculation of additional forms of digital exploitation. Problematic digital media conduct includes: an adult watching pornography with his son; having a collection of nude photographs of one's own children, which are not explicitly criminal in nature; having a collection of questionable images of children; or having a history of online exploitation of children.

Police investigations revealed that there were various discoveries: from the area of adult pornography, from the area of abuse images with adolescents ("youth pornography"), as well as abuse images of children ("child pornography"). A conspicuous feature was the accumulation of one child (80–90 photos, so-called sets). In addition, there were family photos and videos. Among the family photos, three photos of the girl B. were conspicuous: one photo of B. at the age of 3 or 4, in which it had

not been a playful scene but a posed photo of her with another girl in which she had been completely naked, and two other photos in which B. had been seen alone: 1. with a top, but without pants, and in the 2nd photo B. on all fours, in focus B.'s vagina, which had been turned towards the camera (...). The pictures of the daughter were in a "grey area" and the attribution to "child pornography" could not be clearly established. Likewise, the police investigations could not clarify whether two friends of the same age, C. and D., were sexually abused by B.'s father (case report 33).

In the remaining cases it is unclear whether child exploitation materials were also made or whether digital media was used as a sexual grooming tool. In all of these cases, the implications of the use of digital media in (potentially) violent contexts are ambiguous. One can assume that the possession of child exploitation material provides some sort of thrill to the perpetrators. Established correlations between the consumption of child exploitation material and perpetrating abusive acts feed suspicions of sexual abuse, although in the cases discussed here evidence corroborating exploitation remains unverified.

Discussion

Sexual online grooming by offenders who were not previously known offline to their victim, as discussed by Sorrel and Whitty (2019), makes up many, but not the majority, of the cases in this study. Consequently, digital grooming strategies, in the context of sexualized assaults committed on the online-offline continuum, appear to be prevalent among offenders who were previously acquainted with their victims offline. It can therefore be inferred that offenders perceive digital media as an effective tool. The formal distinction between online and offline offenders, as defined by Black and colleagues (2015), must be critically revised with reference to supposed offline offenders. The link between gathering information online about a potential victim, developing exclusively offline relationships or relationships that develop divergently online versus offline, and ongoing digital intimacy should be taken into greater consideration.

At the same time, SOG strategies are also employed in interactions that are more focussed on humiliating the victim than on sexually-motivated exploitation. If a victim has only participated in sexualized interactions online, their awareness of compromising digital materials (e.g., chat conver-

sations, images, and videos) may foster a dependency relationship with the offender. The offender may strategically cultivate fear around the potential dissemination of the materials despite the fact that these are self-incriminating for the offender.

Offenders draw upon a societal bias of hostility towards victims. Cases in which compromising materials were disseminated document the effectiveness of this bias, with the effects of victim-blaming ranging from peer-to-peer bullying to criminal prosecution. Publishing damaging materials within one's peer group is consistent with the dynamics associated with bullying; online and offline humiliation tend to merge. Bullies and their associates justify their behavior with the rebuke that the victims allowed themselves to be the subject of damaging images and videos. This is presented as proof of a victim's own responsibility in their abuse and as provocation for the sexual slurs (Pickel & Gentry, 2017). Digital media, therefore, plays a role beyond the violent act itself, serving as an instrument to spread disinformation by peer and adult offenders. Thus, the response by the social environment into which compromising materials are disseminated is just as important as the actual disingenuously distributed "content". It appears that the offenders have given greater consideration to the potential consequences the images could have to their victims than to the consequences to themselves in the form of self-incrimination. This logic demonstrates the depths of their hostility towards the victims and their willingness to rationalize acts of violence.

Against this backdrop, the central characteristic exhibited by offenders who engage in sexualized violence through the use of digital media may be a vague fear of abandonment by the victim. This fear of abandonment is often strategically tested by the offender as early as the initiation process (strategic withdrawal). Fostering a fear of abandonment through violence on the online-offline continuum allows an offender to manipulate the victim's power of perception. In the context of sexualized violence, digital media allows an offender to gradually strip away the victim's self-awareness (Whittle et al., 2014). The victim comes to associate negative attributions with the use of online media and to avoid digital media for fear of additional repercussions. These negative attributions foster dependence on the offender and a loss of agency on the part of the victim. Digital media transforms this loss of agency into a loss of perception, because the interactions result in evidence of violence, which the offender can reinterpret and use to exert pressure on the victim. As a result, the victim becomes more and more afraid (Kärgel & Vobbe, 2020). To that effect, digital media may be

regarded as a structural amplifier in the violence spiral. Therefore, one must question whether the definition of SOG needs to be expanded beyond sexually motivated seduction strategies employed primarily by offenders who meet their victims online. The majority of cases of sexual violence perpetrated on the online-offline continuum include aspects of SOG. Reciprocally we question the extent to which it makes sense to classify acts of violence that are exclusively committed online as a separate form of violence. After all, young people today live in a world in which relationships and sexual development take place as much online as offline. They may experience not only violence but also romantic relationships primarily online, and predators are taking advantage of this reality.

Choosing to use digital media as an instrument of initiation, threat, exploitation, and/or humiliation demonstrates an offender's rationale when committing digitally supported violence. One should not underestimate the power of digital media as an instrument through which offenders assume the power of interpretation over victims' situations and are able to tap into their everyday realities. The ways in which digital media is used along the continuum of online-offline violence, in other words SOG and sexualized violence through the use of digital media, are a direct manifestation of the hedonistic utilitarianism demonstrated by offenders. We base this assessment on a concept from social-philosophical decision theory. Hedonistic utilitarianism is characterized by the weighing of the psychological pleasures ("mental states") or intrinsic value expected from a decision over the risk of a subjectively uncomfortable outcome (Harsanyi, 1977). As it is a broadly conceived theory, sexual forensic and deviance theory typologies can be integrated into hedonistic utilitarianism. In the context of our case studies, the violent experience of a victim only plays a role in an offender's decision-weighing process to the extent that it generates resistance and inhibitions on the part of the offender that may serve to reduce their expected pleasure.

From this perspective, digital media fulfill multiple purposes for the offender. According to theoretical classification, it serves to regulate feelings of empathy for the victim, thereby creating an obstacle to the offender's consumption of child exploitation material or participation in hand-on-violence, i.e. pleasure (Franke & Graf, 2016). Within a framework that rationalizes pleasure versus risk, digital media primarily serves to maximize the experience of pleasure over uncomfortableness for the offender. In doing so, we do not succumb to the erroneous syllogism that the exclusivity with which digital media is used for sexualized violence in the context of our

cases justifies the renunciation of digital media. Instead, we consider the roles of diverse applications of digital media and their modes of operation in the dynamics of violence, which can shift both the power of definition as well as control away from the victim to the offender. In this respect, using digital media to perpetrate violence is worthwhile for offenders – to the detriment of children and adolescents affected by violence.

Ethical approval

This study has been conducted in strict adherence to established ethical guidelines for scientific research. The ethical considerations and principles governing this research align with recognized standards and regulations to ensure the welfare and rights of all participants involved (informed consent, anonymity/ pseudonymity and confidentiality, voluntary participation, beneficence and non-maleficence, transparent communication).

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3.4 Online Sexual Solicitation of Minors as a Specific Form of Sexual Online Grooming – Offender Data from an Adult Community-Based Sample

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Our knowledge on the prevalence of online sexual solicitation of minors and the characteristics of offenders is based on reports from youth surveys and interviews or case files of legally apprehended offenders. Yet these methodological approaches offer biased insight in the population of online solicitation offenders. Online survey studies may complement these approaches and allow an unprecedented estimate on how many adults engage in online sexual solicitation of minors. In an international online survey among 2,828 adult Internet users, 4.5% reported engaging in online sexual solicitation of adolescents (14 to 17 years) and 1.0% reported online sexual solicitation of children (13 or younger). Of the adults who reported soliciting minors online, 27.7% were identified as female and most were recruited from websites that focused on pedophilia-related content (55.4%). Participants reported equally high numbers of soliciting male and female minors. Sexual behaviors (sexual conversation, sending sexual pictures, receiving sexual pictures, webcam-based cybersex, offline sex) during the solicitation process were common for adolescent and child contacts. The findings imply the necessity to include female offenders and children as well as male minors as focus groups in prevention measures. Online surveys are discussed as valid instruments to investigate online sexual solicitation of minors.

Keywords: cybergrooming, online sexual solicitation, child sexual abuse, sexual offence behavior, online survey

Introduction

Children and adolescents are accessing the Internet on a regular basis, and the onset of Internet use is shifting to earlier ages (Feierabend et al., 2017; Rideout, 2013). In a representative German sample, a third of six- to seven-year olds report being online frequently (Feierabend et al., 2017). One of the most popular online activities is communicating with others (Feierabend et al., 2017). Online communication can serve to maintain existing relationships and to establish new contacts without being limited by personal or geographical boundaries (Chou & Peng, 2007; de Santisteban & Gámez-Guadix, 2018; McKenna et al., 2002). In addition, the Internet can serve as an anxiety-free context to explore sexuality (Hill, 2011;

McKenna et al., 2001). On the other hand, children and adolescents as routine users of online communication represent an emerging group of potential targets for online sexual solicitation (Quayle et al., 2014), specifically because there is a lack of capable guardians online (Gallagher et al., 2006; Medaris & Girouard, 2002; Wortley & Smallbone, 2012). According to routine activity theory, crime is more likely to occur when suitable targets, absent guardians, and motivated offenders coincide (Cohen & Felson, 1979). Soliciting minors online for sexual purposes has therefore gained continuous interest in research and law enforcement in the past two decades.

Defining online sexual solicitation of minors

The sexualization of online contacts with minors can occur in diverse ways. This means that detecting and quantifying this phenomenon is difficult, as the conceptualizations vary between different empirical studies (Whittle et al., 2013). Two frequently used terms are online sexual solicitation (de Santisteban & Gámez-Guadix, 2018; Finkelhor et al., 2000; Wachs et al., 2012) and online grooming (Davidson et al., 2011; Montiel et al., 2016; Webster et al., 2012) to subsume sexual contacts with minors on the Internet.

Online sexual solicitation of minors has been defined as engaging “in sexual activities or sexual talk or give personal sexual information that were unwanted or, whether wanted or not, made by an adult” with a minor (Finkelhor et al., 2000, summary p. x). The concept has been renamed “unwanted sexual solicitation” in later publications (Wolak et al., 2006; Ybarra et al., 2007), and an age gap of five years between the victim and the adult has been added (Jones et al., 2012) to exclude consenting peer interactions (Jones et al., 2012).

Online grooming is defined as process to build a relationship between the minor and the adult in order to prepare the minor and their environment for sexual abuse (Wachs et al., 2012; Whittle et al., 2013). While proposed to be a linear progression including consecutive stages (O’Connell, 2003), linguistic analyses of chat logs between victims and offenders show a non-sequential process with concurring or cyclically recurring stages (Black et al., 2015; Lorenzo-Dus et al., 2016). Grooming is gradual and may include strategies such as manipulation and enticement to secure a child’s trust and compliance (Briggs et al., 2011; Gallagher et al., 2006; de Santisteban & Gámez-Guadix, 2017). Thus, online grooming as a lengthier

process could be distinguished from online sexual solicitation with different cognitive mechanisms and behavioral strategies among offenders (Wachs et al., 2012; Webster et al., 2012). The difference is reflected in an empirical study which shows that adolescent respondents report experiences of online solicitation (21.4%) significantly more frequently than experiences of online grooming (6.5%; Wachs et al., 2012).

How often does online sexual solicitation of minors occur?

The empirical prevalence estimates on online sexual solicitation are almost exclusively based on youth survey studies across different countries. These studies state prevalence rates from 7% to 25.2% of youth reporting experiences of online sexual solicitation (Chang et al., 2016; de Santisteban & Gámez-Guadix, 2018; Ferreira et al., 2011; Finkelhor et al., 2000; Jones et al., 2012; Livingstone et al., 2011; Montiel et al., 2016; Sklenarova et al., 2018; Wachs et al., 2012). As mentioned above, the numbers depend on the definition of online sexual solicitation in the respective study, specifically because many studies include any form of sexual interaction with peers (Chang et al., 2016; Ferreira et al., 2011; Finkelhor et al., 2000; Jones et al., 2012; Livingstone et al., 2011). As most peer interactions per se would not represent a legal concern, this approach has been criticized as overestimating the prevalence of online sexual solicitation of minors (Whittle et al., 2013). In addition, the age ranges of youth surveys vary considerable, for example, covering participants from nine to 17 (Livingstone et al., 2011) versus a single school grade (grade 10; Chang et al., 2016; Wachs et al., 2012).

It is important to note that the number of victims can only offer a one-sided insight into the prevalence of online sexual solicitation, as one adult perpetrator can cause multiple victims over a short period of time (Briggs et al., 2011; Webster et al., 2012). Moreover, an offender's characteristics are often not verifiable from the victims' perspective, unless webcam-based interaction or offline meetings took place (Lanning, 2001; Medaris & Girouard, 2002). Due to some offenders using misrepresentation during their online interaction with minors (Briggs et al., 2011; Quayle et al., 2012; Webster et al., 2012), this information may be biased.

On the other hand, some studies offer information on the number of adults who are convicted of committing online sexual solicitation based on crime records (Gallagher et al., 2006; Mitchell et al., 2005). These numbers

do not necessarily provide a representative estimate of the entire offender population: Most incidences of online sexual solicitation of minors are not reported to legal authorities or do not end in a conviction (Wolak et al., 2004). Moreover, many studies source their data from case files or offenders who were apprehended in a proactive investigation (Mitchell et al., 2005). These so-called sex stings (i.e., proactive law enforcement investigations with police posing as decoy victims who approach or interact with offenders) may only catch on to more aggressive or more unsophisticated offenders, rather than those who invest more time into grooming process (Briggs et al., 2011; Wolak et al., 2010). Hence, the information may not be readily transferable to all adults who engage in online sexual solicitation of minors.

In conclusion, empirical research on online sexual solicitation so far has provided a lot of insight, but the prevalence of adult offenders is still unclear. A community-based approach has been suggested as a promising approach to bridge the two research methods of youth surveys and samples with convicted offenders (Wolak et al., 2010). The Internet offers a research venue to recruit large samples and thereby include more individuals with specific characteristics that have a low base rate in the general population (Germiné et al., 2012). Community-based online surveys have proven beneficial in surveys on sexuality in general (Harding & Peel, 2007) and in investigating illegal behaviors such as child pornography offenders (Ray et al., 2014).

MiKADO project: an online survey in an adult international sample

This chapter presents data from an online survey study (Schulz et al., 2015) that was part of the multicenter MiKADO project (acronym: Child sexual abuse – Etiology, Dark Field Offenders, Victims). MiKADO was funded by the German Federal Ministry of Family Affairs, Senior Citizens, Women and Youth (Osterheider et al., 2012). The online survey study was conducted at the University of Regensburg, Germany, and Abo Akademi, Turku, Finland, between 2012 and 2013. The major aims of this study were to assess the prevalence of adults who commit online sexual solicitation of minors (Schulz et al., 2015), their strategies (Bergen et al., 2015), and the association of the behavior with different psychopathological domains (Schulz et al., 2017).

The survey targeted adult Internet users in Germany, Sweden, and Finland. The sampling was conducted on websites offering social interaction in the three survey languages, German, Finnish, and Swedish. On 126 websites, the survey description was posted including a link leading to the survey website on a secure online server (<https://www.soscisurvey.de>). Participation was anonymous and the program did not store identifying information (i.e., IP address, referring browser).

The sample was a non-probability community sample of adult Internet users (Schulz et al., 2015). Of 7,733 survey accesses, a total of 2,828 participants (36.6%) were included. Excluded cases included less than the demographic items ($n = 4,074$; 52.7%) or did not respond to crucial items on online interaction ($n = 831$; 10.7%). The remaining participants were sampled in Germany ($n = 1,725$; 61.0%), Finland ($n = 991$; 35.0%), and Sweden ($n = 112$; 4.0%). Of these participants, 1,394 (49.3%) were male and 1,434 (50.7%) female. The age ranged from 18 to 80 ($M = 28.4$, $SD = 9.8$).

The online survey asked participants to report information about their demography, their online communication behavior, and various other variables (e.g., social anxiety, loneliness, and problematic Internet use; Schulz et al., 2017). Concerning demography, the survey contained single-item questions about age, sex, relationship, education, and employment status. Survey links, from where participants accessed the survey, assigned the country. The items on online sexual solicitation were constructed for this survey based on information of previous youth surveys and studies with adult offenders (compare Schulz et al., 2015).

Participants reported the sex (*female, male*) and age (adult: *18 or older, adolescent: 14 to 17, child: 13 or younger*) of their sexual online contacts in the past 12 months. If they were uncertain, participants were asked to respond according to “who you thought you were talking to”. The survey also asked the number of contact persons (*0, 1, 2–5, 6–10, 11–20, and more than 20*) and the duration of the online contact (*seconds, minutes to hours, days to weeks, and more than a month*) for each of the contact groups according to age and sex. Participants responded if they had communicated about sexual topics with any of these contacts. For the youngest contact group, they were asked if they sent sexual pictures of oneself or received sexual pictures of their online contact, engaged in cybersex, met offline, and/or engaged in sexual activities offline. Communication about sexual topics was defined as “making sexually insinuating or suggestive comments, sexual innuendo or flirting, conversing about sexual preferences, activities, pornography, or the like”. Participants were allocated to the online sexual

solicitation group if they reported any sexual online behavior with at least one adolescent or child contact.

Prevalence of adults who reported online sexual solicitation of minors in MiKADO

In the entire sample in the MiKADO study, 779 participants (27.5%) reported sexual online interaction with a contact they had not known offline beforehand within 12 months prior to the survey study. This includes 642 participants who reported sexual contact only with other adults, which accounts for 82.4% of those with sexual contacts online and 22.7% of the entire sample. In contrast, 137 participants reported online sexual solicitation of at least one minor, which pertains to 17.6% of those with sexual contacts online and 4.8% of the entire sample.

Compared to the prevalence of victims reported in youth surveys, the numbers of adult offenders in the present MiKADO study are relatively lower (Ferreira et al., 2011; Jones et al., 2012; Livingstone et al., 2011; Wachs et al., 2012). However, 40 participants (31.5%) reported contact with more than 20 different minors over the span of the year prior to the survey. This indicates that, despite relatively lower numbers of adult perpetrators, these individuals would have created a comparatively larger number of victims. This assumption coincides with reports from Webster and colleagues (2012) who report that a specific “hypersexual” subgroup of their offender sample quickly and aggressively approached dozens of youths within short periods of time. As discussed above, this is relevant as the number of victims in youth surveys can therefore not be representative of the number of offenders. Hence, the presented findings may not indicate a contradicting but rather complementary viewpoint for youth survey data.

Characteristics of adults who self-report online sexual solicitation of minors

The following sections report the characteristics of the 137 adults who self-reported having engaged in online sexual solicitation of minors. The participants were on average 25 years of age ($M = 25.4$, $SD = 7.8$). The majority of these participants were single (56.9%) and had an education of at least grade-12 level (69.8%). Just 14.2% reported being unemployed at the time of the study. The proportion of female participants who reported having

solicited a minor was 27.7%. Among participants with adolescent contacts, 30.6% self-identified as female. Among participants with child contacts, 17.2% identified as female. The majority were recruited on websites that focused on pedophilia-related content ($n = 76$; 55.4%). This included 49.1% of adolescents and 79.2% of contact with children.

Overall, participants who reported online sexual solicitation of minors were young and well educated. This finding concurs with previous studies on offender samples (Briggs et al., 2011; Seto et al., 2012). It is noteworthy that including adults as young as 18 and have them report solicitation of adolescents of age 14 to 17 may have caused the inclusion of offender-victim dyads that could be considered as peer interactions. However, there was a substantial proportion of female participants who reported online sexual solicitation of minors. These findings concur with reports based on youth surveys (Finkelhor et al., 2000) but does not correspond with studies that are based on convicted offenders or legal proceedings where the adult offenders were almost exclusively male (Briggs et al., 2011; Gallagher et al., 2006; Seto et al., 2012; Webster et al., 2012). It may be that female perpetrators are less likely reported to legal officials (Wijkman et al., 2010). Females are perceived as less likely to be an active agent in deviant sexual activities (Denov, 2001; Hayes & Baker, 2014). Consequently, victims may fear that their claims are not believed and therefore remain silent. Moreover, studies show that females who commit sexual offenses incur lower legal consequences than male offenders (Weinsheimer et al., 2017). Thus, they may be underrepresented in samples of convicted offenders. These findings indicate that awareness campaigns may need to be tailored to include female perpetrators as well.

It is noteworthy that most participants who reported soliciting minors were recruited from pedophilia-related websites. In contrast, the participants from pedophilia-related websites only accounted for a small subsample (13.2%) of the entire sample for this study. Hence, these individuals are disproportionately overrepresented in the group who engaged in online sexual solicitation of minors. Having accessed the survey from these websites indicates that these participants engaged with an online context addressing sexual interest in children. It is not adequate to assume all of these participants to have sexual interest in children or that none of the participants from other websites did. Yet, Holt and colleagues (2010) suggest that engaging with a specific Internet context can shape an individual's attitudes and behavior. This results from the fact that these websites provide technical skills and legal knowledge and strengthen offense-supportive cognition

(Cockbain et al., 2014). An offender-focused prevention strategy may be monitoring or restricting, at least for previously convicted individuals, access to such websites (Wortlay & Smallbone, 2012) as well as implementing rules of conduct to foster virtual guardianship (Palasinski, 2012).

Characteristics of minors who were solicited online based on self-report by adult perpetrators

Within the 137 participants who reported sexual solicitation of minors, 128 participants (4.5%) reported solicitation of at least one adolescent and 29 participants (1.0%) reported solicitation of at least one child. The majority reported online sexual interaction with more than one age group ($n = 110$; 80.2%). The most common reported combination was contacts with both adults and adolescents ($n = 85$; 62.5%), followed by contacts with all age groups ($n = 17$; 12.4%), contacts with adults and children ($n = 5$; 3.6%), and lastly with adolescents and children but no adults ($n = 3$; 2.1%). In contrast, 23 participants (16.7%) reported having talked exclusively with adolescents but not having sexual online contacts with other age groups. Four participants (2.9%) reported sexual online contacts only with children.

With regard to the sex of the minor who had been solicited, 90 participants (65.7%) reported online sexual solicitation of female minors and 72 participants (52.6%) reported online sexual solicitation of male minors. Hence, given the subsample of 137 adults who reported online solicitation of minors, a total of 18.2% interacted with minors of both sexes. Table 1 shows the number of adult participants who reported sexual contacts with male or female minors.

An important finding is the non-negligible number of adults who reported online sexual solicitation of children. In the past, youth surveys and studies of legal proceedings or offender samples identified mostly or exclusively adolescents as victims of online sexual solicitation (Briggs et al., 2011; Jones et al., 2012; Livingstone et al., 2011; Quayle et al., 2012; Webster et al., 2012). Cases with children below the age of 13 were reported as singularities (Briggs et al., 2011; Webster et al., 2012). In some respect, the present findings correspond to that, as most participants in the online sexual solicitation group reported interacting with adolescents and relatively fewer reported contact with children. This is also in line with studies that show that adolescents are the bigger user group of social sites routinely compared

*Table 1: Sex of solicited minor as function of sex of the adult participant
(N = 137)*

	Total (N = 137) <i>n</i> (%)	Male adult (<i>n</i> = 99) <i>n</i> (%)	Female adult (<i>n</i> = 38) <i>n</i> (%)
Female adolescent contact	84 (65.6)	62 (62.6)	22 (57.9)
Male adolescent contact	67 (52.3)	41 (41.4)	26 (68.4)
Female child contact	17 (58.6)	13 (13.1)	4 (10.5)
Male child contact	16 (55.2)	14 (14.1)	2 (7.4)

to younger children (Livingstone et al., 2011) and are therefore more easily accessible targets. However, with routine Internet use shifting to younger users (Feierabend et al., 2017; Rideout, 2013) children may become more relevant as potential targets for motivated offenders. Hence, the presented results stress that adults who solicit children online should be considered in law enforcement and prevention procedures. In order to develop such appropriate procedures, it is also necessary to consider who the adults are that solicit adolescents and children online. Hence, it is important to have an insight in the characteristics of the offenders.

Reviewing previous empirical data from youth surveys (de Santisteban & Gámez-Guadix, 2018; Jones et al., 2012) and offender samples (Briggs et al., 2011; Webster et al., 2012), girls are more often targeted than boys. This is not reflected in the present data, as the adult participants similarly report soliciting female and male minors. One explanation may be that boys are less likely to report negative sexual experiences to parents and authorities (Wijkman et al., 2010). This may result in fewer arrests and cause the disparity of the present results (and data from victim surveys) in comparison to studies with apprehended offender samples. Another explanation may be that offenders with male victims are more likely to use a friendship approach which may decrease the likelihood both of an offense being reported by the “befriended” youth or of an offender being detected in the more aggressive police sex stings (Grosskopf, 2010; Webster et al., 2012). On the other hand, some studies suggest that offenders against male minors rapidly introduce sex into the conversation (Kloess et al., 2017; van Gijn-Grosvenor & Lamb, 2016), and this immediate, “hypersexual” approach has been shown to cause a large number of victims simultaneously (Webster et al., 2012). Notwithstanding the cause of the disparities,

the findings of the presented study indicate it is important to facilitate disclosure of victimization by boys as well as girls.

Sexual behaviors associated with online sexual solicitation

Among the 137 participants who reported online sexual solicitation of at least one minor within the 12 months prior to the assessment, sexual conversation with a minor was the most common behavior they had engaged in with their contacts ($n = 134$; 97.8%). A total of 57 participants (41.6%) reported any other behavior than sexual conversation, which included sending sexual pictures to the minor, receiving sexual pictures from the minor, engaging in webcam-based cybersex, meeting offline, and engaging sex offline. This comprised 42 participants with adolescent contacts (38.9%) and 15 participants with child contacts (51.7%). Table 2 shows the frequency of sexual behaviors as reported by male and female adult participants in respect to their interactions with adolescent and child online contacts.

Table 2: Frequency of sexual behaviors associated with online sexual solicitation with adolescent and child online contacts as a function of participant sex

Sexual behavior	Total ($N = 137$)	Male adult participant		Female adult participant	
		Adolescent ($n = 91$)	Child ($n = 24$)	Adolescent ($n = 37$)	Child ($n = 5$)
Conversation	134 (97.8)	88 (96.7)	24 (100)	37 (100)	5 (100)
Send sexual picture	25 (39.7)	11 (23.9)	4 (8.7)	8 (47.1)	2 (11.8)
Receive sexual picture	38 (49.4)	19 (32.8)	10 (17.2)	7 (36.8)	2 (10.5)
Cybersex	29 (26.6)	14 (18.2)	6 (7.8)	10 (25.0)	1 (3.1)
Offline meeting	48 (40.0)	30 (34.5)	6 (6.9)	11 (33.3)	1 (3.0)
Offline sex	23 (53.5)	11 (36.6)	6 (100)	5 (45.5)	1 (100)

Notes. Most questions on sexual behaviors during the online interaction process were not obligatory; hence the number of participants who responded to these questions vary (sexual conversation: $N = 137$; sending and receiving sexual pictures: $N = 77$; cybersex: $N = 109$; meeting offline: $N = 120$; sex offline: $N = 48$, as this was filtered by saying yes to having met offline).

Online sexual conversation. As shown in Table 2, online sexual conversation with a minor was reported by 134 participants (97.8%). That indicates that three participants reported not engaging in sexual conversation with minors but there being still a sexual “outcome” of the online interaction (received sexual pictures from the youth: $n = 2$; engaged in sex offline: $n = 1$). All of these individuals were male participants who had reported their behavior with female adolescent contacts.

These data, although only referring to a small group, indicate that it is important to include nonsexual contact with minors as potential precursor to introducing explicit sexual topics. An interaction that superficially appears benign may serve to gain a minor’s trust to facilitate sexual contact and therefore serve as a grooming technique (O’Connell, 2003; Whittle et al., 2013). Detecting a sexual intent behind nonsexual interaction is difficult (Webster et al., 2012), although thorough linguistic analyses of chat language in adult-minor dyads may offer a first step (e.g., Kloess et al., 2017).

Online and offline sexual activities. As shown in Table 2, receiving sexual pictures from the minor was reported by 38 participants (49.4%). In contrast, sending sexual pictures of oneself to the minor was less common ($n = 25$; 39.7%). Engaging in cybersex via webcam was the least common online behavior reported by the participants ($n = 29$; 26.6%). Meeting offline was one of the most common behavioral outcomes of online sexual solicitation ($n = 48$; 40.0%). Of those who met offline, 23 reported engaging in offline sex with their minor contact (19.1% overall; 53.5% of those who reported an offline meeting). As shown in Table 2, all seven participants who met their child contact offline reported engaging with them in sexual activities ($n = 7$; 100%). Provided that the occurrence of sexual behaviors was similarly high in solicitation processes with adult contacts and with child contacts, these findings emphasize that, although representing a minority overall, adults who solicit children need to be considered.

Finally, considering the sex of the minor with whom participants had interacted, Table 3 provides an overview of sexual behaviors in respect to age and sex of the minor. Again, the findings show that participants reported engaging in sexual behaviors with female *and* male adolescents and children. As discussed above, there has been a lack of offender-related information concerning the solicitation of male victims because data based on interviews with offenders or case files of legal proceedings mostly focused on cases with female adolescent victims (Briggs et al., 2011; Seto

et al., 2012). The present findings suggest that online sexual solicitation of male and female minors is accompanied by similar sexual outcomes.

Table 3: Frequency of sexual behaviors associated with online sexual solicitation as a function of the sex of adolescent and child online contacts

Sexual behavior	Total (N = 131)	Adolescent contact		Child contact	
		Female (n = 65)	Male (n = 39)	Female (n = 14)	Male (n = 13)
Send sexual picture	25 (39.7)	10 (27.8)	9 (60.0)	4 (57.1)	2 (40.0)
Receive sexual picture	38 (49.4)	19 (44.2)	7 (43.8)	6 (85.7)	6 (54.5)
Cybersex	29 (26.6)	13 (24.1)	9 (31.0)	4 (33.3)	3 (23.1)
Offline meeting	48 (40.0)	31 (50.8)	10 (32.3)	4 (28.6)	3 (23.1)
Offline sex	23 (53.5)	9 (16.1)	7 (22.6)	4 (28.6)	3 (23.1)

Notes. The total size of this subgroup sample is smaller than 137 because the combination of sex and age category was not clearly identifiable for 6 participants.

Implications for practice and study limitations

To our knowledge, this study was the first to provide the prevalence and characteristics of adults who engage online sexual solicitation from a community-based approach. The therefrom-derived implications need to be considered with attention for the limitations. As an online survey, the study enables false responding. However, the anonymity of the Internet was shown to enhance truthfulness in responding (Suler, 2004). Participants could only assume who they were talking to unless a webcam interaction or a meeting took place. Although a reported adolescent contact may have actually been another adult, the participants' pursuit of what they presumed an adolescent was taken as an important indicator of underlying motivation (Seto, 2010). The present data also focus on unknown contacts although some offenders may be familiar with their victims (Wolak et al., 2006). However, pursuing an offline abuse in an online context may represent a different offense mechanism. Hence, these individuals were excluded from the present study.

Overall, the findings of the MiKADO online sexual solicitation study reflect in some respect the data from online surveys, in that solicitation of male adolescents as well as solicitation perpetrated by female adults was

frequently reported. In other aspects, the findings complement data from offender interviews or legal case files which show a high occurrence of sexual behaviors during solicitation processes. One unprecedented aspect is the prevalence of children as targets of online sexual solicitation.

There are several implications for practice based on the present data. The findings of the presented study can inform prevention measures. Situational crime prevention suggests that worsening the cost-benefit ratio within specific situational settings can prevent individuals from committing a crime (Leclerc et al., 2011). This can be done by target hardening (Cockbain et al., 2011) and installing suitable guardians (Palasinski, 2012). Target hardening is a critical area of victim-focused prevention and can be addressed by awareness campaigns and trainings to build resilience among suitable targets of online sexual solicitation (Cockbain et al., 2011). Based on the presented results, these campaigns need to include younger and male children as well. The second important area is informing guardians to enable them to monitor and protect a potential target. This needs to include real guardians, such as parents, as well as the virtual guardians who come across risky interactions in the online environment (Palasinski, 2012; Transcrime, 2007). Again, the findings of this online survey suggest that interactions with female adults should not be dismissed as harmless and that awareness needs to be raised among guardians of younger children not to underestimate their behaviors online (Chou & Peng, 2007; Livingstone et al., 2011). Similarly, nonsexual conversations with adults on the Internet should be monitored by guardians.

In conclusion, the presented data report the number of adults who self-report soliciting adolescents and children from a community-based approach. These findings bridge reports from youth surveys and law enforcement information. Online survey methodology may be suitable to provide more information for the understanding of online sexual solicitation from an offender perspective in the future.

Note: A detailed report of these findings including group comparisons and statistical effect sizes can be found in Schulz, A., Bergen, E., Schuhmann, P., Hoyer, J., & Santtila, P. (2015). Online sexual solicitation of minors: How often and between whom does it occur? *Journal of Crime and Delinquency*, 53(2), 165–188. <https://doi.org/10.1177/0022427815599426>

Ethical approval

This study has been conducted in strict adherence to established ethical guidelines for scientific research. The ethical considerations and principles governing this research align with recognized standards and regulations to ensure the welfare and rights of all participants involved (informed consent, anonymity/ pseudonymity and confidentiality, voluntary participation, beneficence and non-maleficence, transparent communication).

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3.5 Undetected Sexual Online Grooming: A Qualitative Analysis of Help-seeking Men with a Pedophilic and/or Hebephilic Sexual Preference Disorder

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Sexual online grooming (SOG) is a rising social problem in online environments (e.g., Instagram). To prevent SOG, it is essential to analyze the offender's strategies. For this reason, the current study investigated exploratively the strategies of undetected sexual online groomers with a sexual preference for children by conducting semi-structured interviews with seven men who were diagnosed with a pedophilic and/or hebephilic sexual preference disorder and repeatedly groomed children online. The interviews were transcribed and analyzed with a qualitative content analysis technique. In contrast to previous research, the results highlight that offenders with a sexual preference for children do not always consider themselves to consciously search for victims in online environments (e.g., met their potential victims coincidentally by playing an online game together). Moreover, most interviewees aimed to contact children to fulfill their emotional needs (e.g., enjoying the company of a child) rather than their sexual needs (e.g., sharing nude pictures). Simultaneously, the article discusses the consequences of such behaviors (e.g., higher inhibition of victims' self-disclosure caused by the intense emotional bond to the offender) and raises new research desiderates (e.g., investigating online interactions between adults and children before sexual motivations occur).

Keywords: sexual online grooming, offender, pedophilia, hebephilia, cybercrime, prevention

Sexual online grooming in the German Dunkelfeld: a qualitative analysis of men with a sexual preference for children

Nowadays, approximately up to one-third of children and adolescents worldwide have been confronted with various sexual contact initiations online (Deutscher Kinderverein, 2020; Hasebrink et al., 2019; Sklenarova et al., 2018; Staksrud, 2013; Ybarra et al., 2004). This phenomenon is called sexual online grooming (SOG) and is defined as “a process by which a person prepares a child, significant adults and the environment for the abuse of this child” (Craven et al., 2006, p. 297).

To understand the phenomenon of SOG and derive prevention strategies, researchers have identified up to six sexual grooming stages that appear in most SOG processes (Gupta et al., 2012; Pranoto et al., 2015). According to O'Connell (2003), the first stage, the (1) victim selection stage, describes the process in which the offender lures and selects potential victims. Thereby, the perceived attractiveness of the child and the easy access are offenders' key selection criteria. In the second stage, the (2) friendship forming stage, the offender tries to get to know the selected victim by asking him or her many personal questions like 'What kind of hobbies do you like?'. The (3) relationship forming stage is an extended version of the friendship forming stage and aims to convince the victim that he or she and the offender are close friends. The main goal of both stages is to maintain the build-up of infirmity and trust with the child. The following fourth stage, the (4) risk assessment stage, describes the part in which the offender estimates the likelihood of being detected by the victim's parents, relatives, etc. To assess the risk, the offender asks the victim, for example, about the number of people who have access to the victim's mobile phone or computer. If the offender evaluates the risk of being detected as low in the fourth stage, the (5) exclusivity stage follows. In this stage, the offender convinces the victim to tell no one about their conversations and the conversation's content. Frequently offenders communicate to their victims that their conversations are secrets no one is allowed to know, and if someone discovers them, their relationship will not continue. In most cases, the victims have already built up an intense emotional relationship with the offenders, so they do not tell anyone about the relationship to avoid a break-up, lose contact or damage the relation. In the sixth stage, the (6) sexual stage, the offender tries to integrate sexually colored topics into the conversation by asking the victims questions like 'Have you ever masturbated?' or motivating the child to send some nude pictures of him or her (in this volume, see Schmidt in chapter 3.2). Methods on concluding the SOG include tactics of 1) "hit and run" or 2) "damage limitation". 1) After the offenders have fulfilled their sexual needs, they show little interest in minimizing the damage caused at the relationship level. They often simply break off contact with the victim (Greene-Colozzi et al., 2020). 2) "Damage limitation" tactics involve excessive praise and reassurances like "this is our secret" and "I love you," aiming to prevent the child from disclosing the activities. This behavior is especially common in the later stages of grooming and can become ritualistic over time.

As the grooming process is preferably continuous, it is essential to note that not all grooming interactions include all of the mentioned grooming stages sequentially and that different *modus operandi* can take place simultaneously (Aitken et al., 2018). Also, not all cited grooming stages are necessarily part of a sexual grooming process (Black et al., 2015; Webster et al., 2012; Williams et al., 2013). This variety is mostly caused due to the characteristics of the involved individuals. Studies about the vulnerabilities of potential victims show that the probability of experiencing SOG is increased for children who are female, have psychological problems or problems within the family and/or school, are aged between 13 and 17 years, are gay, bisexual, or unsure about their sexual orientation, and are curious about sexual experiences (Kloess et al., 2017a; Mishna et al., 2009; Mitchell, 2001; Whittle et al., 2013b; Wolak et al., 2004; in this volume, see von Weiler in chapter 2.1; Ioannou & Synnott in chapter 2.2).

Following a large number of studies on online offending (Aitken et al., 2018; Babchishin et al., 2011; Briggs et al., 2011), a German survey revealed that people who groom online and indicated sexually motivated contacts with unknown children on the Internet are more likely to be young, have a high educational degree, and a sexual preference for children (Schulz et al., 2016). Furthermore, Briggs and colleagues (2011) identified two types of SOG offender: (1) the *contact-driven* type aims to meet the potential victims in offline environments and potentially engage in sexual activities, e.g., sexual intercourse, whereas the (2) *fantasy-driven* type seeks to interact with the potential victims online, e.g., sharing nude pictures. In contrast to the contact-driven type, the fantasy-driven type can be characterized as older, more often in a relationship, better educated, more frequently employed, more socially isolated, dysphoric/depressed, and having a sexual preference for children.

The sexual preference for children (pedophilia and/or hebephilia) is defined by recurring sexual fantasies involving children as well as behavioral impulses (Seto, 2009, 2012). Besides the sexual interest in children, research suggests that pedophilia and/or hebephilia might also include emotional needs (e.g., preferring children's company rather than adults, seeking romantic relationships with children; overview see: Seto, 2012). And even though not every person with a sexual preference for children sexually abuses children (Cantor & McPhail, 2016) and a huge number of sexual offenses against children were committed by persons without a sexual preference for children (Schmidt et al., 2013; Seto, 2009), there is strong evidence that the sexual preference for children is a predictor for

repeated child sexual offenses among detected sexual offenders in clinical and correctional samples (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005).

Consequently, it can be hypothesized that the risk for repeated SOG is increased among the subsample of people with pedophilia and/or hebephilia. Moreover, it can be assumed that SOG offenders with pedophilia and/or hebephilia may be motivated not only by their sexual but also by their emotional needs. They may, therefore, deviate from common SOG strategies. As this is a relatively under-researched area, the present study aims to examine the strategies of SOG of undetected people with a pedophilic and/or hebephilic sexual preference disorder within a clinical sample and highlight differences in the current state of research. In order to do so, a qualitative design was utilized.

Material and methods

Participants

Participants were recruited at the Berlin site of the Prevention Network “Kein Täter werden” (meaning: “Don’t offend”, <https://www.kein-taeter-werden.de>), which was funded at that time by the German Federal Ministry for Justice and Consumer Protection. Two independent therapists conducted interviews with seven male participants diagnosed with a pedophilic and/or hebephilic sexual preference disorder (further information, see Diagnostic and Statistical Manual of Mental Disorders, Volume 5, American Psychiatric Association, 2013). All participants have been identified beforehand as having repeatedly been active as SOG offenders in the past. At the time of data collection, the interviewees were 41.29 years old ($SD = 12.57$ years), two were in relationships, five were employed, and two of the participants were previously detected for their SOG offending (darkfield).

Procedures

A semi-structured interview guideline was used to investigate the strategies. It included three main themes: contact initiations (e.g., “How do you contact the child?”), motivation and legitimization of behavior (e.g., “How would you evaluate your behavior?”), and sociodemographic characteristics

(e.g., “How old are you?”). At the end of the interview, all participants were encouraged to report other experiences that were not covered by the interview guidelines. The study was conducted according to the Declaration of Helsinki (WMA, 2022).

Analyses

The answers were recorded on a dictation machine and transcribed subsequently. The transcripts were evaluated qualitatively in terms of content analysis, oriented on Mayring (2015), and by using the f4 software (version 2.5 for iOS). In detail, the interviews were systematically read, and the raw data was interpreted several times. Thereby, essential quotations and identified specific thematic frames were captured. The results were revised and refined until consensus was achieved between the authors.

Results and discussion¹

In the following, thematic frames highlight how SOG offenders with a pedophilic and/or hebephilic sexual preference disorder have groomed their victims. In line with previous research (e.g., Gupta et al., 2012), up to six grooming stages could be identified. The following sections are titled according to the grooming stages and the qualitative analyses’ extracted thematic frames.

Victim selection stage: between targeted search and coincidence

At the beginning of the interviews, participants were asked about how they identify their potential victims. Some participants mentioned that they intentionally used specific online applications like Fortnite or Snapchat to target potential victims. When selecting the online environment, the participants chose those who were popular among preferred potential victims. Results therewith underline the instrumentalization of social media applications and online gaming to get in contact with children.

1 Please be aware that the presented statements reflect the perception of the respondents and may be cognitively distorted accordingly.

“You just follow trends. (...) And currently, the trend is focused on Instagram or Snapchat.”

“World of Warcraft (...), you won’t find anyone on Facebook anymore.”

Also, some participants stated that they always tried to contact several potential victims simultaneously. This phenomenon has been identified before as an online grooming strategy (e.g., Berson, 2003; Malesky, 2007) and is established as the so-called scattergun effect.

“So, it was very rare that you wrote with just one person.”

“Well, there are enough [social] media by now, where you can meet a lot of (...) guys [boys] and flirt with them.”

In contrast to the current research of SOG offenders (Berson, 2003; Malesky, 2007; O’Connell, 2003), a part of the participants mentioned that they met their potential victims online by coincidence rather than specifically looking for them. According to them, the first contact was also initiated by the child and mainly took place because of shared interests (e.g., playing the same online game) and not because the participants identified them as potential victims.

“You want to get to know each other a little because you don’t really enjoy playing [online games] with a 100% stranger, that’s why there is such an interaction (...).”

“Instead, it sometimes just happened somehow that a 14-year-old girl messaged me or something. I can’t even tell if she really was 14 (...). But that’s how that happened. That’s actually how I slipped into this.”

Following the concept of Maturana (1985), this kind of encounter can be understood as “structural coupling”. In this context, structural coupling means that the potential offender and the potential victim meet in an online environment (e.g., online game) due to shared interests in online gaming. Interacting online reciprocally influences their behavior (e.g., exchange between Fortnite players) and thereby also provokes structural changes (e.g., identifying another player as potential victim). It can be assumed that such structural changes were implemented quickly, as the studies demonstrated that children from a certain stage of pubertal development also show increased levels of sexual curiosity, which in turn makes them particularly sensitive to such exposure (Kloess et al., 2017a). Also, given that some people with pedophilia/hebephilia enjoy the company of children due to an increased emotional identification with children (Seto, 2012), it must be

critically questioned whether the initiation of contacts really happened by coincidence or whether cognitive distortions might play into this. Another plausible interpretation could be that these online environments provide means to fulfill participants' emotional and sexual needs and that the contact initiations were also unconsciously motivated in order to fulfill these needs.

Friendship and relationship stage: genuine and emotional interest in the children

In line with current research (Gupta et al., 2012), participants stated that discussed topics in the stages of friendship and relationship forming were seldom sexually colored and resembled the topics of conversation known from other relationships. Thus, it concerned such issues as family, school, or vacation ("Where she's spending her vacation"). In contrast to present research (Kloess et al., 2017b; Whittle et al., 2013a), most participants distanced themselves from manipulative motives within these stages. Instead, they expressed genuine interest in the lives of their potential victims and their need for emotional relationships with them. Moreover, they described that they enjoyed the contact with the children and tried to avoid sexual advances. Instead, they were interested in maintaining an emotional relationship with the child, even if they realized that this was not feasible.

"I try to keep things friendly and not become sexual."

"[The participant has] interest in the person, but not to interrogate her [potential victim]."

"I just thought it was nice to have the contact."

"Looking for togetherness."

This result confirms the assumption that people with pedophilia and/or hebephilia groom children to fulfill not only their sexual needs but also their need for an emotional connection. From this it can be concluded that this group highly focuses on building relationships and thus has a strong emotional bond with the victims. However, against the background of a sexual preference for children, emotional and sexual motives might be harder to differentiate because they might overlap considerably. As a result, when it comes to sexually abusive behavior, children may not be able to identify it in the first place. Additionally, research indicates that it is difficult

for victims who experienced sexual abuse to disclose themselves to a third person (e.g., Sivagurunathan et al., 2019). A strong emotional bond with the offender would, in turn, increasingly inhibit this process and possibly maintain sexual abuse.

Nevertheless, one person stated that he intentionally influenced the conversation to “quickly become sexual” and admitted that many potential victims were naive and easy to manipulate. This kind of statements was reflected in previous research (e.g., Briggs et al., 2011).

“On Tumblr, many girls are very easy to manipulate.”

Risk assessment stage: few precautions, mainly at the technical level

In line with previous research (e.g., Gupta et al., 2012), participants were less focused on the potential victim’s social environment (e.g., potential victim’s family) and estimated the likelihood of being detected as low. The participants focused primarily on precautions at the technical level on their site. For example, one explained that he used exclusive email addresses for his accounts. Furthermore, a few of them used specific messengers like Snapchat that delete messages shortly after receiving them.

“But for many [SOG offenders] telegram would be an option, because the messages are deleted immediately, once you have sent them and read them. (...) Snapchat is the same. The messages delete themselves even after two days if you haven’t seen them.”

When it comes to prosecution, some of the participants expressed the fear of being detected by unknowingly writing with undercover agents of the police acting as decoys. Simultaneously, this fear did not result in further specific precautions like, for example, stating to be of similar age. It should be underlined that despite the fear of detection and prosecution, the offenders might still feel safe enough as no further precautions are installed.

“Yes, I have already [paid attention]. I wanted to find out if there was a real person involved in the conversation.”

Interviewee: “The person was aware that he or she was dealing with an adult and not with another 12 years old?”

Participant. “Yes.”

“And when they block me or say rather not. Well, then that’s how it is. So that’s okay as well.”

Exclusivity stage: interest is more important than exclusivity

In contrast to previous studies (Briggs et al., 2011; Wolak et al., 2008), only a few participants tried to urge their potential victims to secrecy their relationships.

“Then I just told him that it would be better if his parents didn’t know because it would mean nothing but trouble for me.”

Rather the opposite, most of our participants stated that there was no need to handle their conversations as a secret. They described that they felt safe and trusted the children, as they perceived interest in the relationship by them. They interpreted that the children, as well as themselves, knew precisely what they were getting into. As demonstrated by previous research, children’s sexual curiosity supports this process and thereby represents a risk factor of becoming a victim (Kloess et al., 2017a). Moreover, these results repeatedly show that the majority of offenders feel safe enough and are confident that they will not be detected. This would explain the only little amount of further precautions to cover up their SOG behavior.

“I didn’t feel that I had to [tell the potential victim that it was a secret between them], because the interest was there with her.”

“For the most part, they know exactly what they are getting into. They also know that they have to keep their parents out of it themselves.”

Sexuality stage: online contact is more fantasy-driven than contact-driven

Interestingly, contrary to previous research, only a portion of the participants indicated that their SOG behavior aimed to fulfill their sexual needs, while the majority of them described themselves as fantasy-driven.

“First, a little bit of small talk and then sharing photographs.”

Also, few participants stated that they not only did not engage sexually with children but also actively tried to avoid any sexual interactions with the children (*“I try everything not to do anything illegal”*). From their

perspective, they were mainly looking for emotional connection, as previously described (see: friendship and relationship stage). This result matches previous research. Finkelhor (1984) already stated in his “four pre-conditions model” that one of the main motivators to child sexual abuse is emotional congruence with children and deprived emotional needs. Also, meta-analytic research proved loneliness, deficits in social functioning, and difficulties in intimate relationships to be risk factors for child sexual abuse and child sexual abuse image offending (Houtepen et al., 2014; Mann et al., 2010; Whitaker et al., 2008). Accordingly, Gupta and colleagues’ (2012) analysis of chat conversations of people with pedophilia found out that the relationship-forming stage is the most dominant online grooming stage.

Conclusion

The present study identified detailed grooming strategies (e.g., scattergun) and stages described by previous research (e.g., Gupta et al., 2012; Pranoto et al., 2015) within the specific subgroup of people with a pedophilic and/or hebephilic sexual preference disorder. Beyond that, the results give additional valuable insights about this under-researched and specific group of online groomers.

1. *Following social media trends.* Some participants stated that they oriented themselves to the current social media trends of children and adolescents searching for potential victims. For this reason, future studies should record in which environment SOG has taken place and examine which affordances and technical settings may favor grooming situations (e.g., direct deletion of messages after receiving, no identity check when creating an account, etc.).

2. *Structural coupling.* In contrast to previous research, many participants also claimed that they met their potential victim coincidentally (e.g., playing Fortnite together) rather than searching for them. Therefore, future studies should also focus on online interactions between adults and children before sexual motivations occur (e.g., Rüdiger, 2016). This may further help to differentiate potential situational risk situations (e.g., playing online games together). Moreover, research has to examine how the process of structural coupling is biased due to the (unconscious) desire for fulfilling the emotional and sexual needs of SOG offenders.

3. *Emotional needs.* Interestingly, emotional motivations when contacting children were underlined and focused by the participants. This result might

be a specific characteristic of the group of people with pedophilia and/or hebephilia. Therefore, future analyses, and that is essential for upcoming research, should focus on social interactions and aim to investigate emotional connections between adults and children. These studies could highlight the implications that these emotional bonds might have for the further dynamic and development of child sexual abuse (e.g., higher inhibition of victims' self-disclosure caused by the intense emotional bond to the offender, development of sexual motivation resulting from the emotional bond).

4. *Precautions on the technical level.* It is striking that participants felt safe and only undertook minor technical precautions (e.g., using a fake name, using Snapchat) while grooming children online. This underlines the responsibility and necessity of social media platforms and messenger systems to provide technical measures and prevention strategies that secure children when using their applications and detect online groomers.

5. *Handling secrecy.* In contrast to previous research, the majority of our participants did not see any need to convince their victims to handle their contact as a secret. If the offenders perceived the children to have a genuine interest in the contact, they trusted them to handle the situation "right". There is a great need to investigate the variety of online interactions between adults and children before sexual motivations occur and also to examine the motives of children besides sexual curiosity to interact with adults online (also see: Peter et al., 2006).

Limitations

The present study examined a specific sample of SOG offenders who were problem-aware and self-referring to treatment because of their pedophilic and/or hebephilic sexual preference disorder. Therefore, results cannot be applied and generalized to all SOG offenders or merely to all sexual online groomers with a sexual preference for children (e.g., not to those who were not problem-aware). Moreover, the present sample consisted of seven participants; therefore, results can only be explorative. Future studies must examine the current research questions quantitatively and compare the results of clinical and forensic samples with samples from the general population.

Ethical approval

This *case study* has been conducted in strict adherence to established ethical guidelines for scientific research. The ethical considerations and principles governing this research align with recognized standards and regulations to ensure the welfare and rights of all participants involved (informed consent, anonymity/ pseudonymity and confidentiality, voluntary participation, beneficence and non-maleficence, transparent communication).

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4. Prevention of Sexual Online Grooming – Legal, Psychosocial and Technological

4.1 Combating the Phenomenon of Sexual Online Grooming from the Point of View of the State Office of Criminal Investigation Berlin

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The present chapter critically illuminates the criminal classification of sexual online grooming within the German criminal law. Furthermore, the specific procedures, problems and different case developments when applying the law will be described. The focus lies specifically on the initiation of proceedings, problems with the preservation of evidence, the evaluation whether the offender consciously contacted children, the determination of the number of offenses, aspects of the interrogation, the identification of the suspect and procedural steps. It also takes into account the most recent tightening of the law and the criticism levelled at it, particularly by criminal law practitioners.

Since the current chapter mainly reflects empirical experiences, a complete representation of the phenomenon and the dealing with it when translating legislations into the execution and jurisdiction cannot be ensured. Moreover, legislation is always subjected to modifications. Therefore, the validity of the described contents is linked to the period of origin of this article and must also be considered against this background.

Keywords: sexual online grooming, German criminal law, criminal classification, preservation of evidence, criminal prosecution

Criminal classification of sexual online grooming and expectation of punishment

The present chapter reflects upon the outdated § 176 and its subsection as well as the § 184 in contrast to the legislative changes according to the approved draft law 'Entwurf eines Gesetzes zur Bekämpfung sexualisierter Gewalt gegen Kinder' ('Draft Law to combat sexualized Violence against Children'; Bundesministerium der Justiz und für Verbraucherschutz, 2020a). The revised law came into force at the 1st of July 2021 and is fully effective since the 1st of January 2022.

Reflections on the classification within the outdated §§ 176

Before the legislative changes, sexual online grooming (SOG) played a rather subordinate role in the systematics of the *Strafgesetzbuch*¹ (German Criminal Code, 'StGB'; Fischer, 2020). In the portfolio of offenses of sexual abuse of children, it was partly found in § 176 (4) no. 3 and in the rather awkwardly formulated § 176 (4) no. 4 and was punishable by imprisonment from three months up to five years. Alternatively, criminal liability according to § 176 (4) no. 2 could also be considered, although this included all types of determination of sexual acts, primarily direct contact, whereas no. 3 and no. 4 referred specifically to a 'virtual' way of committing a sexual abuse of children.

§ 176 – Sexual abuse of children (outdated version)

[...]

(4) A prison sentence of between three months and five years shall be imposed on anyone who

[...]

2. orders a child to engage in sexual activities, unless the act is punishable under section 1 or section 2,
3. acts upon a child by means of writings (section 11, subsection 3) or by means of information or communication technology in order to
 - (a) induce the child to engage in sexual activities which it is intended to perform or which the offender or a third person perform;
or
 - b) to commit an offense pursuant to section 184b subsection 1 no. 3 or section 184b subsection 3, or
4. affects a child by presenting pornographic images or representations, by playing sound recordings of pornographic content, by making pornographic content accessible by means of information and communication technology or by applicable speeches.

With this threat of punishment, SOG fell under minor crimes such as theft, bodily injury, fraud, etc. The act constituted a misdemeanor, as opposed to crimes (§ 12), and the minimum sentence was less than one year (see excursus below).

1 Every reference to §§ without further specification are those that included StGB (German criminal code).

In practice, the penalty framework of § 176 (4) was never fully exhausted: prison sentences were usually imposed only in the case of massive relevant criminal records. It was absolutely rare that these sentences for SOG as a special kind of violence against children and child sexual abuse were higher than two years and consequently were suspended for probation (§ 56). Moreover, although the legal minimum penalty was three months imprisonment, in many cases only fines were imposed. This was made possible by § 47, which allowed individual custodial sentences of less than six months to be converted into fines. One month imprisonment then corresponded to a fine of thirty daily rates.²

Behind this was the legislative concept that § 176 and § 176a punished influencing the sexual development of children under the age of 14 years. Within this framework, penalties were graded depending on the severity of the assault. So-called *hands-on offenders* who committed severe sexual acts with actual physical contact (e.g., forced sexual intercourse) must therefore expect higher penalties than those who have online sexual interactions with children (e.g., sexting, indecent exposure of themselves in front of the children, etc.). If an offender aged over 18 years of age penetrated the victim's body, the minimum penalty was already two years (see § 176a). It could hence only be suspended for probation if the legal minimum sentence is considered, since § 56 stipulates that suspended sentences could only be imposed for prison terms of a maximum of two years if the necessary positive social prognosis could be made. Sentences of more than two years therefore mandatorily resulted in imprisonment, i.e., they are actually enforced.

This mirrored the documentation (i.e., filming, photographing, recording) of the sexual abuse of children, i.e., the criminal offenses of possession

2 Contrary to popular belief, a fine is not imposed in an absolute amount but is measured on the basis of a corresponding number of daily rates, and the amount of daily rates are based on the monthly net income. An 'sexual online groomer' with a monthly net income of 2,400 € would have to pay 120 daily rates of 80 € each, a total of 9,600 €, if a prison sentence of four months were appropriate but the sentence were converted into a fine. With a social welfare recipient the fine would amount to 120 daily rates of 15 € under the otherwise same conditions, thus altogether 1,800 €. In both cases, however, the corresponding convictions actually lacked one third of their annual income.

Under the intended revision, however, the minimum sentence would be six months. A conversion to a fine would then no longer be possible, and a custodial sentence would be imposed in any case. It remains to be seen whether this will also lead to a more frequent imposition of custodial sentences that are no longer eligible for probation.

and distribution of files, which were called diminutively ‘child pornography’. The penalty for producing child pornography, on the other hand, differed depending on the motivation and purpose of the production. If the perpetrator made the recordings only for himself, this constituted sexual abuse of children under § 176 in combination with production of child pornography under § 184b, i.e., two offenses were committed by one act. If the production was for the purpose of dissemination, in particular resale, § 176a (2) of the German Criminal Code was relevant, which provided for a minimum sentence of two years.

Nevertheless, the further away the defendant was from the actual offense, the milder the punishment – the owner of child pornography writings is liable to fines or imprisonment. Whoever distributed these materials, i.e. make them accessible to others and thus perpetuates the crimes against the child, is already threatened with a prison sentence of at least three months. Similarly, the increased minimum sentence of three months for SOG compared to the punishment for the possession of child pornography could be explained by the fact that the offender had already taken a further step in the direction of the child, since there was direct contact and thus also direct, albeit not yet physical, influence.

In any case, SOG was one of the weakest forms of child sexual abuse, measured against the expected criminal sanction. The sentence did not reflect the possible impact of SOG in children by impairing children’s sexual development, destroying trust, stirring up fears of attachment and traumatizing them. In addition, in most cases SOG does not stop at ‘pornographic speeches’ or at children being sent pornographic pictures. Often the child is also asked to send nude pictures of him- or herself to the ‘sexual online groomer’ – this means that he or she is prompted to produce and distribute child pornographic pictures of him- or herself. Once distributed on the internet, it is practically impossible to effectively withdraw those pictures from circulation.³ Also, online sexual interactions of children with

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- 3 Since the child is of criminal age, this in fact leads to the ‘sexual online groomer’ acting as a so-called, ‘indirect perpetrator’. According to § 25 (1), not only the person who commits an offense him- or herself is liable to prosecution, but ‘like a perpetrator is punished’ who as an indirect perpetrator commits the offense ‘by another’ who is not liable to prosecution. Reasons for this impunity of the person in front are, for example, that the perpetrator acts without intent, i.e., that he does not even know that he is committing a criminal offense, that he acts innocently himself (for example due to a mental illness excluding his ability to act and/or control) or the criminal responsibility of the person acting, § 19, i.e., when a child is instrumentalized.

adult strangers can act as bridge to actual physical offline meeting where child sexual abuse might occur (Greene-Colozzi et al., 2020).

In the outdated legal setting, the legislation produced an absurd situation: A 13-year-old child, for example, who is asked by a 'sexual online groomer' to take nude pictures of himself and does not delete them, himself becomes punishable by law from the age of fourteen for possession of child pornography: by law, it does not matter who is in the pictures.⁴

Reflections on the classification within the revised § 176 and § 184

In the current legislation, comprehensive modifications were implemented in order to fight against sexual abuse of children, adolescents, and persons in one's charge. For example, all acts – including SOG – are classified as sexualized violence as opposed to sexual abuse, with SOG being defined as 'sexualized violence against children without physical contact with the child' (§ 176a). This aims to underline that SOG is a form of sexual abuse.

In addition to these changes in terminology and the legal system's restructuring of the elements of the offense, the penalties increased considerably. The basic offense of sexualized violence against children is classified as a crime and its punishment ranges from one year to 15 years imprisonment (previously punishable as a misdemeanor with imprisonment from six months to ten years).

Also, the dissemination, possession and procurement of possession of child pornography were upgraded to a crime. For the dissemination of child pornography, the law defines one year to ten years (previously three months to five years) as imprisonment. Possession and procurement of possession are to be punished with prison sentences of one year to five years (previously up to three years imprisonment or a fine). Commercial and gang distribution is to be punishable in future by imprisonment of two to 15 years (previously six months to ten years).

However, the basic system remains the same in the revised version: From SOG to actual forcible sexual intercourse with children, all of these acts fall under the term sexual abuse or sexualized violence. The more immediately

4 In the context of youth pornography, the legislature has recognized this problem, at least in principle, by regulating it in § 184c (4) no. 3, also in conjunction with subsection 3 and subsection 5 sentence 3 shall not apply to acts of persons in relation to such youth pornographic writings which they have produced exclusively for personal use with the consent of the persons depicted'.

the contact between perpetrators and children is, the higher the penalty. For cases of SOG this means, both in the outdated and in the revised version of the law, that as the weakest form of abuse it also carries the lowest threat of punishment. Moreover, in the revised law the criminal liability of online SOG offenders is included although in those cases when they mistakenly believe that they act on a child. The so-called punishability of attempts is intended to facilitate criminal prosecution and refers, for instance, to sexualized contacts with children in chat rooms which happen, contrary to the perpetrators assumption, between the perpetrator and other adults (e.g., parent or police officer).

The revision of the law evoked partly considerable criticism from the ranks of criminal law practice and science, focussing on the one-sided criminal law tightening and the too low focus on prevention (Piechaczek & Lüblinghoff, 2021): For example, the term ‘sexualized violence’ is considered misleading and resulting in interpretative problems as it might diffuse different forms of child sexual abuse and might not allow for the differentiation of physically brutal sexual abuse. Moreover, the tougher penalties are expected to mainly provide for an increase in the minimum penalty for most cases. This is because, apart from the fact that there is widespread agreement in criminology that higher penalties do not have a stronger deterrent effect, there would then be a lack of practically relevant options for responding more flexibly and on a case-by-case basis to the injustice committed in each case. In turn, this could lead to decreased resources for the prosecution of severe cases. The relevance of the issue itself, however, was reflected in the large number of different statements that have been submitted and of parliamentary debates.

For the cases of SOG, the new regulations formulated within the revised version provide a more severe penalty (Bundesministerium der Justiz und für Verbraucherschutz, 2020b):

§ 176a – Sexualized violence against children without physical contact with the child

- (1) A penalty of imprisonment of six months to ten years is imposed on anyone who
1. performs sexual acts in front of a child,
 2. directs a child to perform in sexual acts, unless the act is punishable under § 176 (1) no. 1 or no. 2 or
 3. influences a child by showing pornographic content (§ 11, subsection 3) or speech to that effect.

(2) Whoever offers or promises to supply a child for an offense under subsection 1 or who arranges with another to commit such an offense incurs a penalty.

(3) The attempt is punishable in the cases referred to in subsection 1, no. 1 and no. 2. In the case of acts under subsection 1, no. 3, the attempt is punishable in those cases in which completion of the act fails solely because the perpetrator mistakenly assumes that his action relates to a child.

Section 176b – Preparation of sexualized violence against children

(1) A penalty of imprisonment for a term of three months to five years shall be imposed on anyone who acts on a child by means of a content (§ 11, subsection 3)

1. in order to cause the child to perform sexual acts on or in the presence of the offender or a third person or to have the offender or a third person perform sexual acts on or in front of the child or
2. in order to commit an offense under § 184b (1) sentence 1, no. 3 or § 184b (3).

(2) Whoever offers or promises to supply a child for an offense under subsections 1 or who arranges with another to commit such an offense incurs a penalty.

(3) Offenses under subsection 1 incur a penalty in those cases in which the completion of the offense fails solely because the offender mistakenly assumes that his action relates to a child.

Case development and criminological approaches

In the area of SOG – as with most abuse and sexual offenses – a large number of unreported crimes can be assumed. Unfortunately, only a few offenses will be reported. In addition, many reports are made by chance, for example because parents detect a problematic chat session on their child's smartphone or computer, or if the police themselves investigate proactively in the relevant chat forums.

Studies on unreported crime with respect to SOG arrive at wildly varying results, mainly because there is a lack of a clear, uniform definition. Yet, almost all the surveys reach the conclusion that it is a common crime to which both boys and girls are exposed. Criminologist Rüdiger (2016): 'In my experience, I assume that almost every child who grows up in digital

space is confronted with an online groomer at least once. However, this does not mean that the children realize who they are talking to or what their intentions really are.’

Even an evaluation of *Polizeiliche Kriminalstatistik* assessing prosecuted offenses based upon the outdated § 176 (PKS; police crime statistics; Bundeskriminalamt, 2021) indicates an approximate trend in the development of the phenomenon. On the one hand, this only covers the number of proceedings initiated on complaint or *ex officio*, without it being established that a crime has actually been committed. On the other hand, criminal offenses according to the outdated § 176 (4) no. 3 and 4 were generally recorded in the PKS – not every proceeding mentioned related to this section was therefore necessarily a SOG proceeding. Nevertheless, SOG was likely to account for the vast majority of the proceedings in the PKS filed under § 176 (4) no. 3 and 4 (for example, see Bundesarbeitsgemeinschaft der Kinderschutz-Zentren e. V., 2019; Bundeskriminalamt, 2019).

Cases of SOG according to the outdated law could be classified under both § 176 (4) no. 2 and § 176 (4) no. 3 and 4, depending on the characteristics of the crime. For both defined acts, a steady increase can be seen. The following tables show the total number of initiated proceedings and the percentage of crime clearance rate (CCR) for Berlin and the Federal Republic of Germany for the years 2012 through 2018:⁵

5 It must also be taken into account with regard to the rate of clarification that a case in the PKS is regarded as clarified if a perpetrator has been named. Whether this is the actual perpetrator and whether a criminal offense could be proven at all is thus not yet established.

Table 1: Total number of initiated proceedings and the percentage of crime clearance rate (CCR) for Berlin

Berlin	2012		2013		2014		2015		2016		2017		2018	
	case s	CC R	case s	CC R	case s	CC R	case s	CC R	case s	CC R	case s	CC R	case s	CCR
Ordering a child to perform sexual acts on itself, § 176 section 4 no. 2	7	57.1	13	100	8	62.5	10	80	14	78.6	12	91.7	6	83.3
Influencing a child by means of image or sound, § 176 section 4 no. 3 and 4	52	75	52	55.8	60	71.7	76	78.9	79	67.1	140	82.1	101	71.3

Table 2: Total number of initiated proceedings and the percentage of crime clearance rate (CCR) for the Federal Republic of Germany

Germany	2012		2013		2014		2015		2016		2017		2018	
	case s	CC R	case s	CC R	case s	CC R	case s	CC R	case s	CC R	case s	CCR	case s	CCR
Ordering a child to perform sexual acts on itself, § 176 section 4 no. 2	664	87.7	592	84.3	523	87.4	592	87.7	590	90	465	84.5	421	85.5
Influencing a child by means of image or sound, § 176 section 4 no. 3 and 4	1406	85.6	1464	81.8	1907	84.8	1958	85.8	2028	86.3	2121	81.9	2439	86.3

Particularly surprising about these figures is that, in spite of consistently high CCR, the number of cases is steadily increasing. In criminology, it is generally assumed that the risk of being sentenced for a violation of the law has a far greater influence on the willingness to commit a crime than the severity of the expected penalty. Against the presented statistics of the PKS, this association might not be presented for these specific crimes.

Rüdiger (2018) developed the term *Broken Web Theory* as an explanatory approach based on the *Broken Windows Theory* by Kelling and Wilson (1982) and the *Routine Activity Theory* by Cohen and Felson (1979) and comes to the conclusion that ‘the probability of prosecution in digital space is too low to have a controlling effect’. To change this, he sees three starting points: One can attempt to counter the motivation of offenders by making

the potential victims less attractive or shift the balance towards compliance with legal norms by increasing protective mechanisms. Another approach is to prepare potential victims – e.g., children in SOG – for risks and thus reduce potential targets. A third starting point is to strengthen the control of standards in the internet in order to increase the risk assessment of potential actions. In principle, there are three actors: the users themselves, the private operators of social media and the rule of law.

Investigations into sexual online grooming – procedures, problems and developments

Initiation of proceedings

Due to the so-called ‘principle of legality’, the initiation of preliminary proceedings merely requires that the prosecuting authorities – the police or a public prosecutor’s office – become aware that a criminal offense may have been committed, the so-called ‘initial suspicion’. In general, there are many possibilities of gaining such knowledge, which naturally encompass SOG. However, other authorities or courts are under no legal obligation to report suspected cases of child sexual abuse. If, for example, SOG incidents become known at the Youth Welfare Office, in a school or in a family court case, it is up to the authorities to decide whether to involve law enforcement. However, the protection of the family plays a subordinate role in this consideration (in contrast to other, especially *hands-on constellations* of sexual abuse), since SOG offenders are rarely from the social vicinity of the child.

In practice, usually criminal charges are pressed by parents who have either been informed by their children or (more frequently) become aware of suspicious chat traffic by checking on their children’s media activities. However, the detection of such offenses also largely depends on the parents’ commitment to carry out such checks.

Occasionally, distribution of pictures is an indication of SOG: If, for example, pornographic material sent by an offender to a child is passed on by children in class chats, it will be easier for other parents, educators or teachers to become aware of it. This renders it possible to trace the pictures back to the child who originally spread the pictures – and thus, to the offender.

Furthermore, other proceedings (e.g., on suspicion of the distribution of child or youth pornographic writings) often give the decisive cue. In the

course of these proceedings, searches and seizures are ordered, and confiscated materials are evaluated by law enforcement authorities. During this process, chat traffic is usually also evaluated, as is access to corresponding exchange forums – and thus the possibility of identifying further people committing SOG and affected children.

Depending on the capacities of police personnel within the federal states of Germany, inquiries without cause can be conducted. For example, suspicious online chat rooms are visited – e.g., by non-publicly investigating police officers or covertly investigating police officers (see § 110a of *Strafprozessordnung*, StPO; criminal procedure code; Bundesamt für Justiz, 2021b) impersonating a child. When ‘sexual online groomers’ initiate contact, this leads to the initiation of separate investigation proceedings and, if necessary, the transfer of these proceedings to the responsible public prosecutor’s office.

Some legal questions are connected with the procedure ‘undercover investigations’:

On the one hand, undercover investigations of police officers might inadmissibly provoke an offense. As offenders usually visit the relevant chat forums on their own accord, this has less impact in the area of SOG than in other areas of crime. In the field of organized drug-related crime, the risk that later suspects were only inspired by police officers to commit such crimes is significantly higher. Usually, such an *agent provocateur* problem would have to be taken into account when sentencing. However, only in exceptional cases undercover investigations will lead to a suspension because of a procedural bar (see Bundesverfassungsgericht, 2014).

The question of possible ‘chastity tests’ can arise during covert investigations in chat forums, especially in the exchange of child and youth pornographic writings. However, it only plays a rather subordinate role in SOG.

Under the previous legal situation before the revision of § 176, perpetrators who believed to be in contact with children under the age of 14 but actually chatted with police officers have not yet committed a crime. According to the offenders’ idea, a child was to be influenced although they were chatting with an adult. This behavior was classified as so-called ‘unsuitable attempt’, but now it is punishable since the 3rd of March 2020.

Moreover, with the before-mentioned law changes the scope of action for investigations was expanded when it comes to telecommunications monitoring, online searches and traffic data.

Problems with the preservation of evidence

The most common situation in which parents file a complaint is often associated with problems that arise prior to filing. For example, it is usually not sufficient for parents to inform the law enforcement authorities that a questionable, sexualized online conversation has taken place in order to provide evidence in court. In order to substantiate accusations, it is necessary to be able to view, evaluate and present the corresponding chat as evidence. However, this requires that the corresponding data can be read from the device used by the child (mobile phone, tablet, computer). This is often difficult, as parents very often already deleted the chat history and occasionally even the entire messenger software from the device in a first and impulsive move because of their quite understandable indignation upon discovery. It might still be possible to recover the data, but doing so is not straightforward. When using services such as Skype or Snapchat, reconstruction is almost impossible due to the live nature or lack of conversation backups.

Another problem is that reading the data from a mobile phone is usually time-consuming. In times in which mobile devices are inseparably connected to their users, seizing the device for several days up to several weeks for data preparation often leaves parents and above all children annoyed. However, these items can be confiscated according to § 94 (2) StPO (Bundesamt für Justiz, 2021b).

A lack of problem awareness on the part of parents who regard SOG as a minor offense can also reduce the readiness to file a complaint. In such constellations, there is a lack of awareness that such actions can unsettle, and in some cases considerably impair, the sexual development of a child. At worst, parents blame their children for having become victims of SOG by accusing them of having engaged in the corresponding chats and often associated picture transmissions – without reflecting on the fact that the underlying lack of sensitization of the children in dealing with social media and sexuality often has its cause in the corresponding educational commitment of the parents themselves.

Evaluation whether the offender knew about the age of the child

If the chat logs and other evidence-relevant data actually were backed up, further difficulties often arise. Firstly, it needs not only to be proven by

comprehensive prints of chat protocols in what way the offender sexually interacted online but also whether the offender assumed that he actually was contacting a child.

The names of the corresponding contact lists or chat forums can give a first hint to this. Names like ‘horny teens’ or ‘willing boy’, however, do not allow for the compelling conclusion that they are children. Adolescents or adults can also hide behind these names.

Ultimately, this even applies to nicknames that seem to clearly point to children (e.g., ‘12yo horse lover’). Here, too, it cannot be ruled out that another adult offender hides behind this account; i.e., the absurd constellation may arise that two adult ‘sexual online groomers’ chat with each other in misjudgment of the other.

In any case, when evaluating such chat traffic, the focus should be primarily on whether the offender can be proven to know the age of his or her chat partner at all. At best you will find a corresponding age indication by the chat partner. However, if the perpetrator mistakenly believes that he/she acts on a child while communicating with an adult, his/her attempt is punishable.

Determination of the number of offenses

Also, the determination of the number of offenses requires an increased evaluation effort. Not every single statement constitutes a single act. The StPO sees a ‘natural’ unity of action ‘if there is a direct spatial and temporal connection between a majority of similar criminal conducts that the entire conduct of the offender objectively appears to a third party to be a single action, and if the individual acts of actuation are also interconnected by a common subjective element’ (Stuckenberg, 2018).

So, if several verbal assaults should occur in the course of a conversation, it would still be *one* offense in the sense of the concept of criminal offense. Against this background, it is necessary to evaluate how many different offenses can be detected and what offending behavior can be subsumed under a ‘unity of action’. Therefore, a substantial review process of the evidence secured is essential but also time consuming (e.g., analyzing the number of platforms used, number of sessions, detect sessions with relevant offending behavior). A high amount of personnel capacities is needed which cannot be ensured by the law enforcement agencies.

Interrogation of the affected children

An essential part of the investigation procedure is the interrogation of the affected child itself. However, such interrogation is problematic in several respects.

On the part of the interrogator, it is necessary to have a basic understanding of the operating principles of the chat portals or apps in question, which cannot be taken for granted in light of the (growing) number of corresponding applications (Ebizmba, 2021). In addition, a special ‘internet slang’ (e.g., ‘Vong’; Turysheva, 2018) and symbolic use of emojis is often used in corresponding chats, which requires at least a complex quasi-translation (e.g., eggplant metaphorical for penis, goggling eyes for ‘send nudes’). Moreover, the understanding of the written texts can also be limited by poor orthography and punctuation.

Concerning the child, many issues arise from the legal proceeding itself. It is understandably unpleasant and embarrassing for many children to talk to strangers about sexual interactions and sexual offenses they experienced, no matter how sensitive the prosecutor may be (Caprioli & Crenshaw, 2017; Goodman-Brown et al., 2003; Sivagurunathan et al., 2019). Moreover, shame can also play a role, being the reason that the child did not really know how to defend oneself against a ‘sexual online groomer’ or did not dare to confide in one’s parents. Finally, the willingness to testify will not be increased by the existing awareness that nude pictures and videos, which may have been made by the user him- or herself, are now not only available to the chat partner but also obviously known to the employees of the law enforcement authorities and the parents and may have been disseminated further. Moreover, testifying and reporting sensitive information to unknown police investigators and even to the court can be frightening and cause refusal to report the case in the first place.

The reluctance to report sexual offenses also takes place against the background of the principle of presumption of innocence (Articles 20 und 28 of the Basic Law for the Federal Republic of Germany; Bundesamt für Justiz, 2020c). Every witness needs to be interrogated critically to assess circumstantial evidence, which in turn might lead to the perception of being questioned as a victim. The expected course of conversation in a children’s interrogation is generally friendly. However, by the nature of the interrogation an unbiased approach is necessary.

For these and other reasons, children can understandably be reluctant to report details about the experienced sexual interactions – especially when

the child perceives itself as having a part in it and/or having also replied in a sexualized way despite its young age. In addition, such a police interrogation imparts the danger of a (secondary) victimization: an intensive examination of an event that is actually perceived as harmless by the child itself could push the child into a stigmatizing victim role (Condry, 2010).

Next to the risk of (secondary) victimization, interrogations about experienced sexual offenses can often be emotionally burdensome and stressful for the child victims. A criminal procedural instrument aiming at reducing the strain is judicial video interrogation (especially when significant traumatization is the result of the sexual offense). Pursuant to § 58a StPO (Bundesamt für Justiz, 2021b), underage witnesses of sexual offenses are to be questioned by an investigating judge, which must be recorded on video. This points to another aspect that prolongs the investigation process, as this procedure also requires considerable technical, time and human resources of the law enforcement authorities and courts.

The importance of recorded statements is underlined by § 255a StPO (Bundesamt für Justiz, 2021b), which allows to bring forward such a record of an earlier interrogation in a later main hearing in a meaningful way. This provides the circumstance that a child victim of sexual abuse does not have to repeat already made statements in police and judicial interrogations. This would be especially burdensome if, in the worst scenario, the case entails several offenses and the prosecution stretches over a period of several years. Particularly in severe cases of child sexual abuse, in which the child victims are in particular need for the prompt start of therapeutic treatment, § 255a StPO (Bundesamt für Justiz, 2021b) allows to provide evidence at a very early stage during the prosecution. By this, the risk of a therapy-related distortion of the statement through the process of suggestion (Shobe & Scholler, 2001) can be averted too.⁶

6 Occasionally it becomes known in investigation proceedings that parents have deliberately postponed a therapy that was actually necessary for their child because they fear that this would be accompanied by a falsification of the statement, which in the worst case would lead to the offender's impunity. This danger cannot be dismissed. However, in the knowledge of a therapy it is possible to determine whether and to what extent it has had a falsifying effect. A punishment of a perpetrator is thus not excluded by a therapy in principle. Apart from that, when weighing up a 'successful' criminal case against the need to treat a child, concern for the child's welfare should prevail. At best, both aims can be achieved through close coordination between parents and law enforcement authorities.

Possible problems in identification of the suspect

In a further (possibly parallel) investigation step it must be determined who the chat partner is at all. This requires an approach to the respective service providers and can be quite complicated.

If a phone number is stored – as with WhatsApp, for example –, at least an attempt can be made to find out the user via this number. This can already be difficult, especially since the user registered with the Federal Network Agency can deviate from the actual user, and it is possible that false personal details were entered during connection registration. As a rule, however, the determination of inventory data is largely unproblematic for reputable European and US providers. Yet with regard to small providers (so-called ‘living room providers’) it can be problematic to obtain the needed information – either due to a lack of willingness to cooperate on the part of those responsible or (more often) due to their inability or excessive demands.

In the case of foreign providers – the Canadian-based chat provider ‘kik’ is a particularly practice-oriented example here – the fact that the relevant information can only be obtained through so-called legal assistance channels makes it even more difficult to obtain the corresponding inventory data information. Using the example of ‘kik’, this means in simplified terms that, in order to avoid premature data deletion, a data backup must first be applied online, which is, however, guaranteed for a maximum of 90 days. Moreover, requests for extensions must be submitted regularly before this period expires. At the same time, in accordance with the international agreements between Canada and Germany a request for mutual legal assistance must be submitted to the Canadian authorities, who are then asked to collect the necessary data for the German investigation in Canada and to transmit them to Germany.

What sounds like a simple process is actually complicated and tedious. Requests for mutual legal assistance are quite extensive because they must describe the facts of the case and the evidence as well as the legal specifications and the statutory limitation. Furthermore, numerous formalities which vary from country to country must also be taken into account. The request is then sent via the Federal Offices of Justice, both in Germany and in Canada. Thus, it usually takes several months for the request for mutual legal assistance to be received by a person ultimately appointed to implement it. The reply is then returned by the same means.

Tracing connection data, in particular IP addresses, is also difficult in practice, since this data is traffic data in the sense of § 100g StPO (Bundesamt für Justiz, 2021b), which is not stored by the respective telephone providers over a longer period of time. Often the necessary data can no longer be obtained when a crime is filed. Attempts to oblige providers to keep data available for longer for law enforcement purposes have been controversial in legal policy terms for years (so-called 'data retention').

In this area, too, corresponding legal changes could at best occur in the near future. The driving force behind this is the European Union, which has been discussing a *Regulation on European Production and Preservation Orders for electronic evidence in criminal matters* (E-Evidence-Regulation; Europäische Kommission, 2019) for years now, the adoption of which is now imminent and hopefully can soon take place. There are still a few points of contention. These essentially concern the domestic procedures associated with implementation and the willingness of individual states to tolerate interventions against companies and persons on their territories under their jurisdiction. However, there is broad agreement on the basic idea of the *e-evidence Regulation*: All providers offering digital services within Europe are obliged to provide a contact person in a country of the European Union. This person shall then be obliged to answer inventory data and other provider inquiries from investigating authorities of the EU member states within ten days, in urgent individual cases within a few hours. A time-consuming request for legal assistance, particularly with regard to providers in non-EU countries, would no longer be necessary.

To illustrate it with the example 'kik': Instead of a request for mutual legal assistance, 'kik' would be obliged to designate a contact person in the EU territory, who would provide the necessary data at short notice and on a simplified request form. The providers must then only check whether the request makes sense and seems justified. Even then, a prompt judicial review of the inquiry and its background would be possible.

If it is not possible to identify a suspect in any of these ways, the only *ultima ratio* that remains is to write to the suspect directly via the portal or app used. In this way, at least a warning effect is achieved in the hope that the perpetrator will refrain from committing further offenses. However, further investigations will then be considerably more difficult. In particular, the usual measures following the identification of the offender, such as house searches, hardly make sense for an accused person who knows of proceedings brought against him.

If the offender was identified by some other means, especially without the defendant knowing, all types of data carriers are usually confiscated in the course of house searches. Also it is checked whether the accused is in contact with children, for example has children of his or her own who run the risk of becoming a victim of crime, or whether he or she is working full-time or on a voluntary basis in child and youth work, be it as a teacher, educator, sports trainer or the like. In such case appropriate notifications would be sent to the responsible authorities, who in turn would examine whether and at what point there is a need for action to avoid any danger to the welfare of the child.

The following evaluation of the acquired data carriers serves not only to secure the chat traffic but also to check whether there are other injured parties. Also references to the possession and distribution of child and youth pornographic writings or indications of actual abuse by the accused him- or herself will then be investigated. (The latter is rare, though, since the ‘typical’ ‘online groomer’ has not yet taken the step of becoming a *hands-on perpetrator*.) In practice, however, there are some hurdles in data carrier evaluation, such as access to specially secured data containers, lack of access to cloud memories and overcoming device locks and passwords. This effort is often so considerable that the police cannot manage it by themselves. The evaluation is then outsourced to external experts. As a rule, this shortens the evaluation times considerably compared to those of forensic technology, so that results are already available after six to nine months. But it also entails considerable costs which, depending on the size of the data volume to be evaluated, can in individual cases reach high five-digit amounts.

Further procedural steps

If a suspect could be identified and the evidence is sufficient for a so-called ‘probable cause’ (according to the contents of the file, a conviction of the accused appears more probable than an acquittal), the public prosecutor’s office is obliged to file charges, § 170 (1) StPO (Bundesamt für Justiz, 2021b). Alternatively, an application for a penalty order or a discretionary decision, in particular a suspension of proceedings due to the insignificance of the infringement pursuant to § 153 StPO (Bundesamt für Justiz, 2021b) or against conditions such as monetary payments or charitable work, § 153a StPO (Bundesamt für Justiz, 2021b), could be considered.

However, at least in constellations in which there are strong indicators for the risk of recidivism of sexual offending against children, preference should be given to pressing charges: Criminal proceedings and opportunistic decisions are decisions that conclude the proceedings and are made in writing. When a charge is brought, however, a main trial takes place and the accused is inevitably confronted with this risk for repeated offending. For the necessary confrontation and, at best, the willingness to start preventive intervention, a main hearing might foster a decisive impulse, independent of the criminal processing of the allegations.

Conclusion

The criminal prosecution of SOG represents – despite the apparent low threshold of the offense on the one hand and the occasionally criminal-political exaggeration on the other hand – an important aspect in the fight against sexual abuse of children. The procedural measures now certainly make it possible to keep the risk of revictimization of the children concerned low. In addition, despite all the procedural evidentiary difficulties involved and the considerable investigative effort, which is offset by a rather low expectation of punishment, criminal prosecution makes it possible to identify offenders at an early stage, before they might become direct ‘hands on’ offenders. At best, the pressure of criminal proceedings can motivate them to enter therapy at an early stage.

A problem with this preventive-repressive approach, which also applies to accusations of possessing and distributing child pornography, is the practically small number of therapy options available. Even if the fear that therapy could only take place pro forma in order to be able to prove wrongdoing in a later main hearing cannot be dismissed, the few therapy places and the associated long waiting times for those willing to undergo therapy, as well as the long duration of the preliminary proceedings due to the evaluation, mean that the pressure for therapy threatens to fizzle out. With greater human resources at the investigative authorities, especially the police, and a considerably greater range of therapy options, much greater efficiency could be achieved in the context of prevention.

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4.2 Protecting Children from Sexual Online Grooming

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Due to the significance of social media services in young people's lives, the probability of sexual online grooming via these services is increased and should be reduced by knowledge of secure settings. Therefore, preventing sexual online grooming requires knowledge of protective measures as well as competent handling of unpleasant encounters. This article gives an overview of preventive measures for potentially affected children, adolescents, and parents and includes technological approaches to improve the wellbeing of young people. Furthermore, it outlines various educational practice projects developed by the German Awareness Centre *klicksafe*.

Keywords: prevention, sexual online grooming, *klicksafe*, social media, sexual abuse

Protecting children from sexual online grooming

All over the world, child welfare organizations are working to protect girls and boys from sexualized violence in real life and on the net (e.g., sexual online grooming (SOG)). Even though young people use the internet preferentially for communication, gaming, exchanging or sharing news, photos, or videos with peers (mpfs, 2018, p. 34), it is no longer an exception that they encounter depictions of abuse, harassment, and SOG on the internet. The anonymity of the internet enables adults in disguise to establish contact with children, to elicit information about sexual matters, and in the worst case to prepare the way for abuse in real life (Gillespie, 2004; Whittle et al., 2013a). The topical spectrum ranges from questions about sexual experience and preferences to explicit prompting of sexual acts.

Sexual harassment of children and adolescents predominantly takes place on platforms that also address adults and, in addition to their public areas, offer private communication functions as found in social media and online games (Gillespie, 2004). Many of these services are inadequately moderated, and their pre-installed settings do not provide sufficient protection for users. Furthermore, intelligent mobile phones have become, for many, an essential part of everyday life (Deloitte, 2018a; Deloitte, 2018b; Ofcom, 2016). Using them brings the popular social media services and communication platforms directly into the lives of children

and adolescents. Practical experiences by the authors with media education of parents, children, and adolescents have shown that very few children and adolescents possess the knowledge necessary for dealing with harassment and sexualized advances (klicksafe, n.d.b). Moreover, younger children in particular are moving about on social media without sufficient technical protection. Many of the popular services are oriented toward interaction and offer options to establish contact – including contact to users who are minors (Common Sense Media, 2009; Kietzmann et al., 2011). All this makes it imperative that children and adolescents get prepared early for the risks that will be entailed in their use of communication services and social media. They need to be taught how they can protect themselves from risky contacts and how it is possible to react when unpleasant encounters occur.

Prevention begins at home – tips for parents

Although young people give the impression of effortlessly grasping the use of online services and mastering the technical handling of devices much more smoothly than their parents can, they fall far behind in their ability to judge the consequences of engaging uncritically with the internet (klicksafe, 2018). Parents, on the other hand, report in personal talks – at parents' meetings or in individual counselling run by the helpline "Nummer gegen Kummer" (English: "Number against sorrow") – that they feel unsure of themselves and out of their depth when it comes to media education for their children, particularly in connection with online acquaintances. Information offerings and counselling can, however, support parents in overcoming their hesitation, learning to recognize warning signals, and integrating protective steps into the everyday upbringing of their children.

More safety on social media

When children are getting to know, and learning to use, popular portals, it is important that they are not left to deal with all this by themselves. Parents should be talking to their kids about it, empowering them and encouraging them to get help if something unpleasant or embarrassing happens. This implies discussing, early on, who can be trusted and where to turn when help is needed. From the outset, young users should also know about support provided by counselling services. In this context, prevention

means escorting children and adolescents along their way, setting up a framework in which it is uncomplicated for them to talk openly about their experiences in the digital realm. It also means teaching children how to behave toward others on the internet. Part of their learning about netiquette is the understanding that they themselves have every right to abruptly break off contact with someone who is not behaving acceptably, who is violating their privacy or their dignity. Their own feelings are reliable indicators, to be taken seriously; children are allowed to say “no” to a situation that makes them uncomfortable. And they should take care not to make others feel uncomfortable: parents should begin exchanging with children at an early age about their right to privacy and about respecting the privacy of others. It is also wise to begin early with explaining to children why photos and videos need to be handled with care and that the persons shown in the images must have control over who is allowed to see them.

This is challenging for parents – to show genuine interest, to have matters explained to them, and to admit that they themselves are not perfect but trying to do their best. One common issue causing conflict in families is the age limit on popular online services. Parents need to be aware that social networks do not ensure sufficient security – for example, when they allow strangers to initiate contact. For this reason, parents should take the age limits that are set by the providers seriously. They should talk with the children about it, arrive at decisions, and establish rules (klicksafe, 2018).

In order to prevent SOG, parents should examine the safety settings closely on every new service the children wish to install. Together with the children, they can discuss the information that is being requested and provided, then adjust the settings on the service to protect that information adequately. Personal data – including name, date of birth, address, and so on – should never be shared publicly or made available to strangers. Even when adolescents are already using social media services on their own, it is still advisable that parents continue to discuss privacy settings with them and repeatedly review the settings together, since it frequently occurs during an automatic update that the software reverts to its default settings. It is sensible to cultivate, together, an awareness of the anonymity of the net and the unfortunate openings this presents for people who wish to conceal their identity and their intentions. A healthy mistrust toward the aims and pursuits of others is a useful tool that parents can teach children to keep at hand when they are online. Overall, it is wise to discuss together which persons the children are allowed to cultivate contact with when they are online (klicksafe, 2018). In general, it is recommended to refuse contact requests

from strangers, to discontinue contacts that are unpleasant while blocking or reporting the offending party, and to seek help whenever indicated. klicksafe provides an overview of the subject area on its website (klicksafe, 2023) and gives concrete prevention tips for educators and parents.

Recognizing sexual online grooming tactics

Timely discussions at home with parents can help children and adolescents to identify warning signals for SOG more quickly and to put up better defences. One element of this is enabling children and adolescents to recognize the typical pitches used by potential abusers, who usually begin with harmless chatter. They try to gain young people's trust by, for example, showering them with praise or compliments, and/or they bait them with unrealistic promises (often coupled with the expectation of becoming famous). Often, the strangers suggest switching over to private chats or messengers where they might ask very personal questions (among other things, about sexual experience) or ask to send intimate photos or engage in sexual conversations. Sometimes these images or conversations are later used for blackmail. Moreover, personal meetings are also tried to be arranged (in this volume, see Schmidt in chapter 3.2; Kuhle & Stelzmann in chapter 3.5).

Because most potential offenders proceed strategically and deliberately target certain young individuals – chosen due to vulnerabilities or weaknesses observed online –, it is essential that particularly endangered minors receive support from adults (UBSKM, 2020b). These may include children and adolescents who see themselves as outsiders or those growing up in authoritarian family systems or families where violence dominates or sexuality is taboo (*ibid.*). Furthermore, young girls and adolescents who are prone to taking risks and are receptive to issues of sexuality form an especially endangered target group (Jonsson et al., 2019; Mitchell et al., 2001; Helweg-Larsen et al., 2012; Mitchell et al., 2007; Webster et al., 2012; Soo & Bodanovskaya, 2011; for an overview see: Whittle et al., 2013b; Wolak et al., 2008). In order to identify SOG advances early or block them entirely, it is essential that the offender does not succeed in winning the confidence of a young person to the point where he or she keeps the contact secret from those in his/her social surrounding. Offering information and counsel to parents, classmates, and siblings can contribute toward involving persons of trust while calling attention to supportive aspects that can improve the

situation for all those involved – such as emotional stability and approaches to sexuality without taboos (Osterheider & Neutze, 2015, p. 4).

Conversations about the risk for sexual abuse

It is a prerequisite for protecting children and adolescents from SOG that sex education is integrated into an upbringing based on body integrity and sexual self-determination. Learning to acknowledge one's own boundaries and the boundaries of others and understanding what mutual consent means are of the essence. This can help children to identify sexualized advances on the internet more easily, to take their own feelings seriously, and to know how to resist such advances and where to seek help. It is seminal to this approach that prevention is treated as an everyday matter and that parents are "sensitive to the concerns of their children, never subjugating the children's needs to their own" (UBSKM, 2020a). This includes talking to one another about one's feelings, about setting boundaries, or about how secrets are dealt with within the family.

Discussing the topic of self-portrayal on the internet is also a necessity. Parents are advised to negotiate norms for it with their children and also discuss the possible consequences of a portrayal that appears permissive or libertine. In fact, the parents themselves are often in need of education about the manner in which everyday photos (that they or their children post thoughtless) can be sexualized on the internet: placed into a different context and transformed into a violation of the intimate privacy of the persons depicted (Giertz et al., 2019, p. 14). In this context, the authors at jugendschutz.net call attention to the re-use of everyday photos and videos – often those taken at the beach or during sports – by, e.g., persons who attach suggestive comments, create playlists, or disseminate the images in forums.

Another significant aspect is the issue of how parents or guardians treat the topic of guilt and shame. Offenders often rely on the loyalty of their victims, assuming that the latter will not tell anyone what has occurred – especially if the incident was precipitated by risky behaviour on the young person's part (such as posting suggestive photos on social networks). Prevention should not be restricted to simply warning children and adolescents about such mistakes. It also needs to be made clear that even risky behaviour, however short-sighted, is no reason to develop feelings of guilt (UBSKM, 2020a). What is most important for children and adolescents is

being given the message that they can speak with their parents about SOG or sexual abuse, that they are not the ones at fault, and that their parents will believe them and help them and/or organise professional support.

On the practical level, education about SOG or sexual abuse should be geared appropriately to the age of the child, avoid frightening younger children, and set in when they begin school. Growing up, they should be aware that:

- girls and boys can be exposed to sexual violence on the internet,
- that men, but also adolescents and sometimes women, can be offenders,
- that most adults and adolescents are not abusers,
- that most offenders keep their intentions secret,
- that abusers are often persons one is familiar with and seldom are strangers,
- that sexual abuse has nothing to do with love,
- that abuse often begins with odd feelings,
- that girls and boys can also encounter sexual violence in chat rooms,
- that there can be sexual transgressions among children and adolescents and that in such cases one has a right to receive help (UBSKM, 2020a).

Although prevention cannot provide absolute protection against sexual abuse, it helps in identifying cases early and in terminating contact. Furthermore, well-informed children and adolescents are less susceptible, can size up situations more accurately, and are better able to talk about them (ibid.). Parents can take precautions against SOG through preventative efforts and can intervene more effectively when incidents do occur if they, on the one hand, show understanding for the needs of those who were targeted (by listening and providing support) and if they, on the other hand, have acquired the knowledge necessary for an appropriate response. This could include documentation of proof and filing of legal charges; blocking a user and making a report to the provider or a complaint to a hotline/support agency; arranging professional support or counselling (Pötting, 2019).

Prevention in schools and in youth recreation facilities

Experience in practical work with children and adolescents indicates that they clearly consider the topic of SOG to be of interest and of relevance for their everyday lives. Due to the (pedo-)sexual and pornographic connotations, however, school students have certain inhibitions towards approach-

ing this delicate topic with a closely knit social group – such as their class at school. Moreover, individuals in the class may already have been victimized in some way, so that particular sensitivity is called for in broaching the topic. And if any incident should come to light, intervention methods involving external support and the parents will come to bear.

Initially, it is important to clarify in a matter-of-fact manner the concepts of SOG, cybermobbing, and sexting in order to create a common foundation of knowledge among the students. The typical approaches taken by abusers in SOG need to be discussed in the classroom, along with the prosecutable offences that occur (sexual assault, blackmail, sexual abuse, violation of the right to control one's own image in photos or videos). These issues can form the basis for additional, methodically and didactically structured learning units, permitting various and creative approaches. To illustrate this, several examples taken from media education practice will be presented in the following, including a peer-mentoring approach, a meme-reaction app, work with a topically related film, and an action-oriented method.

Example of prevention measures taken from media education practice

Example 1: P2P approach – developing a “Get Savvy Campaign” for younger students

Campaigns that have been developed in various countries on the topic of SOG can be presented at the outset of the learning unit *Sexting – Risks and Side Effects*; examples and materials are provided in the klicksafe teaching unit *Selfies, Sexting, Self-Portrayal* (Rack & Sauer, 2018, particularly pp. 40–48). The students are then allowed to plan an action of their own – either a short production (e.g., a cell-phone video), a campaign (e.g., a poster), or information material (e.g., a flyer) on the subject of SOG and intended for outreach to younger students as a target group. The whole class takes a vote on which one of the ideas they will implement together in the next step. In general, it is quite productive to have older students informing younger ones in the sense of a peer-mentoring approach as applied, for example, by the Mediascouts (Medienscouts NRW, 2020).

Example 2: Humour puts an end to sexual online grooming – the app zipit

One aim of good preventative work should be to give young people practical options for taking action should they ever become the target of SOG. With the *zipit* app developed by the media education project childline in England, students receive suggestions for memes with which they can respond to explicit advances on social media – and respond authentically in a form familiar to them: with pictures (Childline, 2020). The images can be downloaded from the app's gallery directly into the photo storage on one's own phone. In the event that an undesirable SOG situation comes up, one can send off the meme as a way of terminating the contact early and with self-assurance.



Figure 1: Examples of the app *zipit*

Note. *zipit* app on an iPhone, retr. Feb. 3, 2020

Example 3: Pedagogical work with a film – “The White Rabbit”

The TV film “The White Rabbit” (“Das weiße Kaninchen”, produced by the Südwestrundfunk, see [ffpnewmedia](#), n.d.) graphically illustrates the various forms of SOG, from first advances to ultimate dependency from which the victim can no longer escape without outside help. A corresponding classroom unit made available by the Media Competency Forum Southwest enables the analysis of key scenes by suggesting approaches for discussion, such as a focus on the responsibility of others with the question “When and how could others have intervened?” (MKFS, 2020). An exercise on the theme “Everyone has boundaries – how far would you go?” demonstrates to the group that individuals set their boundaries differently, but that all boundaries are to be accepted. Other exercises relating to trust and abuse of trust are also included as part of a comprehensive conception for prevention.

Example 4: Preventive work with the klicksafe materials “Let’s Talk about Porn” and “Selfies, Sexting, Self-Portrayal”

Let’s Talk about Porn, intended for use in schools and youth work, addresses not only the use of pornography but also the issue of overstepping intimate boundaries and shows up problems associated with sexualized self-portrayals. Here, young people learn to reflect critically about online postings of suggestive self-images (Kimmel et al., 2018, pp. 66–68) and to realistically estimate the risks related to libertine images on the internet. The adolescents make decisions on posting images privately or publicly, give reasons for their decisions, and learn how to proceed when their own private information is published by third parties. One of the many work projects included, the project Sexy Chat, aims at learning how to recognize alarm signals in chat situations that seem suspect and how to react when explicit advances are made. The aspect of anonymity is taken up in a spot on the topic of Cybersex, weighing the issues of anonymity and identity on the net – and the associations triggered by nicknames, as in Figure 3 (cf. short video at [Veiliginternetten](#), 2001).



Figure 2: Which of the pictures are okay?

Note. Screenshot from *Let's talk about Porn*.



Figure 3: Who's behind the nickname: "HardCore Barbie"? Why this person?
Are you sure?

Note. Screenshot from *Let's talk about Porn*, p. 121.

Another instruction package called *Selfies, Sexting, Self-Portrayal* includes a section on teenagers' idols, casting them as rather questionable role models that can induce children and adolescents to post sexualised images of themselves (Rack & Sauer, 2018, pp. 24–25). In a reflexive process, they consider the extent to which they allow themselves to be influenced by such misleading role models in their own representation of themselves.



Figure 4: *Steeled body, erotic pose – how role models of many young people present themselves in profiles*

Note. Instagram images Cristiano Ronaldo and Selena Gomez, retrieved on July 3, 2017. Screenshot from *Selfies, Sexting, Self-Portrayal*, p. 24.

Example 5: Classroom poster “Warning Signals in Chats”

With the classroom poster “Warning Signals in Chats”, children and young people can be sensitised for SOG so that they can stop a riskful conversation early at the beginning. Examples show which strategies offenders use to get in contact to children and adolescents and gain their trust. It can be used to discuss the topic in class. Young people can evaluate the tips according to usefulness and add their own experiences and strategies for checking problematic communication and can thus benefit from shared knowledge.



Figure 5: Warning Signal in Chats

Note. Translated Screenshot from <https://www.klicksafe.de/materialien/wehr-dich-gegen-n-sexualisierte-gewalt-im-netz-warnsignale-im-chat> (new poster version).

Example 6: Blocking undesirable advances by modifying user settings – for example on WhatsApp

There are several privacy features in WhatsApp that can be used to install in order to shield children and adolescents from SOG (for detailed information, see <https://gabb.com/family-resources/is-whatsapp-safe-for-kids/>):

Protecting oneself with secure settings

To provide as little information about oneself as possible to strangers, one can adjust data protection settings so that access to the profile photo, personal information (“about”), status (“last seen”), etc. is denied to anyone who is not listed as a contact in the personal phonebook or to nobody. Settings include a range of options between “Nobody” and “Everyone”. In this

context, it is important that children and adolescents select their contacts judiciously, listing in their phonebook only persons they actually know. This kind of contact ‘housekeeping’ for one’s own protection requires a certain maturity and the ability to foresee consequences – things that children first need to be encouraged to learn.

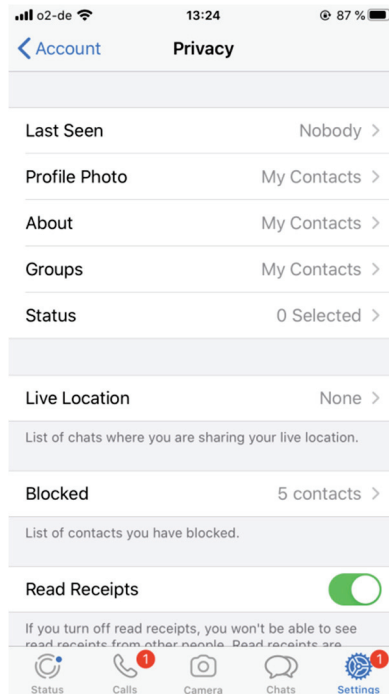


Figure 6: Privacy settings in the IOS system

Fingerprint lock

The fingerprint lock feature allows users to open WhatsApp with their fingerprint and thereby increases security that only the corresponding user is able to access the messages.

(Live) Location function should be disabled

User can post their current location as an element in a message or can share their current location over a self-defined period of time, as a kind of 'live broadcast'. This option should not be chosen within groups that include strangers, since sharing location data facilitates stalking – which is frequently an element of SOG.

Perspectives

To a great extent, the internet is an anonymous space that enables individuals to assume false identities. Particularly in chats, messengers, and other digital locations that facilitate communication in separate areas (such as private chats), this anonymity presents considerable dangers. Preventative efforts undertaken by parents, schools, and youth workers attempt to prepare young people for the SOG pitfalls they are likely to encounter, and to provide them with tools for self-protection that can be used in an emergency. In order to prevent online victimization, much needs to be done: gender- and age-specific measures, programmes addressing self-assertion and the right to draw boundaries in the virtual world. Addressing these topics in the classroom can help older children and adolescents to become knowledgeable about potential consequences and to learn about being proactive in matters of prevention and intervention.

For younger children of pre-school and primary school age, other measures are indicated: digitally protected areas screened off by technical shields play a significant role, along with parental supervision and concern. An equally important preventive measure is adequate sex education in accord with the children's age and development, but also matter-of-fact information on the topic of sexual abuse.

The national German Awareness Centre klicksafe as an initiative of the EU, coordinated by the Media Authority of Rhineland-Palatinate and the State Media Authority of North Rhine-Westphalia, sees it as part of its mandate to inform various target groups about the safety risks involved in digital communication. This encompasses calling attention to the typical strategies employed in online grooming and sexual harassment and providing support for preventive self-help through offerings designed to empower parents, children, and adolescents to defend themselves against undesirable contact pitches as well as presenting a wide variety of information and teaching units on these topics online (klicksafe, n.d.a).

Since 2004, klicksafe has been pursuing its goal of promoting media literacy and supporting users in handling the internet and digital media competently and critically by realizing the European “Better Internet for Kids” strategy in Germany. The initiative explicitly addresses multipliers, educators, parents, and guardians by developing pedagogical conceptions and materials.

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4.3 Prevention Strategies for Offenders of Sexual Online Grooming

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The help-seeking behavior of individuals at risk of sexual offending is often influenced by various factors. In this context, prior studies consistently underscore the obstacles encountered by these individuals in their quest for assistance, such as stigma and confidentiality treatment issues. Simultaneously, there is a growing number of services addressing the needs of affected individuals, including non-offending persons with pedophilia, in diverse ways. Given the rising relevance of sexual online grooming (SOG), this chapter offers a succinct overview of both national and international resources. It encompasses formal, informal, semi-formal, and self-help sources specifically designed for the prevention and treatment of individuals at risk of (re)committing SOG offenses. The article meticulously documents the diverse array of existing programs in an exemplary manner. Moreover, it illuminates the challenges faced by individuals seeking assistance and by providers offering support in this context. It also proposes potential adjustments to address these challenges.

Keywords: sexual online grooming, offenders, prevention, sources of support, help-seeking

Introduction

The prevention of sexual online grooming (SOG), defined as contacting children online with the intent to groom them for online and/or offline sexual abuse, presents a significant societal challenge (in this volume, see section 4). Grooming itself is not a new phenomenon and it is also a component of offline child sexual abuse (overview see, Ringenberget al., 2022; also see Stelzmann, Amelung, et al., 2020). However, the prevalence of online environments in children's lives, encompassing various platforms, has expanded the reach and opportunities for offenders (*Polizeiliche Kriminalstatistik (PKS)*, 2018). SOG can potentially occur on any online platform if interaction opportunities are given. Mainly, widely used online platforms like Twitch and YouTube, social networks such as Instagram, Facebook, or TikTok, and online gaming platforms like Fortnite, Minecraft, or Steam serve as initial contact points before offenders attempt to transition to

more private communication channels with fewer security precautions (in this volume, see Kuhle & Stelzmann in chapter 3.5). Research underlines the high prevalence of offenders initiating sexual contact (e.g., Madigan et al., 2018; Schulz et al., 2016; Sklenarova et al., 2018), underscoring the critical need for preventive measures in conjunction with the identification and prosecution of SOG offenders. This chapter aims to provide a concise overview of secondary and tertiary prevention efforts targeting individuals at risk of initial or recurrent SOG offenses. Additionally, it addresses implementation issues and challenges, concluding with considerations for future directions.

Prevalence of sexual online grooming

In principle, accurately estimating the prevalence of child sexual abuse (in digital media) proves to be a challenge. To achieve this, two conditions must be met. Firstly, victims must recognize the interactions with offenders as sexually abusive behaviors or, at the very least, negative experiences. However, this recognition can be problematic, particularly in the context of grooming, which intertwines with various stages of general (online) relationship development (Bryce, 2014, 2015), potentially hindering the identification of abusive intentions or interactions. Secondly, victims who have recognized and experienced abuse must disclose their experiences to a confidential individual, who then reports the incident to the police (Bryce, 2014, 2015). Consequently, it is not surprising that both self-report data on SOG victimization and police reports are unlikely to yield reliable estimations (Wachs et al., 2016).

Moreover, obtaining a reliable prevalence estimate is complicated by the fact that some offenders engage with multiple victims simultaneously (e.g., Schulz et al., 2016). Additionally, SOG prevalences are influenced by national legislation, which varies in terms of penalized behaviors, age thresholds, and law enforcement activity. Despite the challenging circumstances described, there are studies that, through their surveys, have managed to capture trends in the extent of child sexual abuse in digital media.

Regarding minors who undergo online sexual initiation, survey findings from the European Union (EU Kids Online) indicate that 30% of the surveyed minors (aged 11 to 16) have engaged in communication with someone unknown online, 15% have received sexual messages online, and 9% have met an online contact face-to-face (Livingstone et al., 2011). A longitudinal

study in Germany revealed that 35% of respondents aged between 12 and 17 reported receiving sexualized messages in the year leading up to data collection, with an additional 30% receiving sexual requests that made them uncomfortable. In both instances, higher prevalence rates were observed among older teenagers aged 15 to 17, with over a fourth (27%) reporting at least one offline meeting with someone they had met online (compared to 12% of the entire sample; Hasebrink et al., 2019).

In this context, a German survey conducted in 2021 found that 14.5% of girls and 13.6% of boys stated that they had been asked online by an adult to undress and turn on the camera of their smartphone (Landesanstalt für Medien NRW, 2021). To gather additional evidence, Madigan and colleagues (2018) conducted a meta-analysis, calculating prevalence rates ranging from 9.4% to 13.6% for minors experiencing any form of online solicitation. However, nearly all studies included in this meta-analysis failed to assess and report separate prevalence rates for solicitation by peers versus adults.

Concerning offenders engaging in sexual interactions with minors online, findings from an online survey conducted by Schulz and Schuhmann (in this volume, see chapter 3.4) revealed that 4.5% of adult Internet users engaged in the online sexual solicitation of adolescents aged 14 to 17. Additionally, 1.0% reported instances of online sexual solicitation involving children aged 13 or younger. Within this context, 10.9% indicated that the interactions extended over a prolonged period. Among the surveyed adults, nearly one-third were identified as female, and over half were recruited from websites focusing on pedophilia-related content (Schulz et al., 2016; in this volume, see Schulz & Schuhmann in chapter 3.4). In line with this, a study by Winters & Jeglic (2022), encompassing 115 victims of SOG, revealed that 11 individuals had been groomed by female offenders.

Characteristics of sexual online grooming offenders

There has been an ongoing debate regarding whether individuals who engage in online sexual solicitation and grooming constitute a distinct group of child sexual offenders in comparison to those who engage in contact offenses or if they are essentially traditional child sexual offenders leveraging new technology. The continuous evolution of technology contributes to a dynamic technological infrastructure in households, facilitating intercon-

nectedness and enabling flexible, anonymous consumption and sharing of media.

A meta-analysis conducted by Babchishin et al. (2011) aimed to assess the distinctions between online and offline offenders. In terms of psychological factors, the results indicated that online offenders generally exhibited greater victim empathy, higher sexual deviancy, and lower impression management compared to their offline counterparts. Furthermore, online offenders were found to be more likely to be Caucasian, younger, single, and unemployed compared to the general population.

The existing body of research on SOG faces limitations arising from the sampling of online sexual offender groups that include individuals with diverse motivations and engaging in various online offending behaviors. Notably, previous studies often amalgamate child sexual abuse offenders with SOG offenders and mixed offenders (e.g., child sexual abuse and child sexual abuse image offender), overlooking the inherent heterogeneity within online sexual offender groups (Babchishin et al., 2011).

Another attempt to delineate online offenders involves distinguishing between different motivations for engaging in online offenses. A frequently referenced typology is the categorization of fantasy-driven and contact-driven online offenders proposed by Briggs et al. (2011). 1) Fantasy-driven offenders commit crimes to satisfy a sexual interest in children without an expressed intent to meet offline. 2) On the other hand, contact-driven offenders utilize the internet as part of a broader pattern of offending, encompassing child sexual abuse images (CSAI) and SOG offending to facilitate offline offenses. They engage victims in online sexual discussions as a means of desensitizing them to sexual content, preparing them for eventual offline sexual encounters.

A study conducted by DeHart et al. (2017) provided empirical support for the differentiation between fantasy- and contact-driven offenders; however, it introduced four distinct subgroups: cyber-sex-only offenders, cyber-sex/schedulers, schedulers, and buyers. 1) Cyber-sex-only offenders can be compared to the fantasy-driven individuals identified by Briggs et al. (2011); they engage in sexual chat, expose themselves online, and encourage reciprocal behavior from victims without specific plans to meet. 2) Cyber-sex/schedulers also partake in online sexual activities, such as explicit chat and the exchange of explicit images/videos, but they make explicit plans to meet victims offline. 3) Schedulers resemble contact-driven individuals, actively seeking what is described as a 'hook-up'. A smaller proportion of offenders in this category engage in online sexual behavior or attempt to

establish a relationship with their victims. 4) Buyers share similarities with schedulers in their motivation to seek offline contacts, but they also involve elements of negotiation and bribery (e.g., sexual favors or money).

Support programs tailored for individuals at risk of engaging in sexual online grooming of children

According to Rickwood and Thomas (2012), help-seeking is an adaptive coping strategy wherein individuals seek external assistance to learn how to cope with their symptoms, specifically addressing problematic sexual experiences and behaviors related to SOG offenses. The help-seeking process generally encompasses multiple levels and can be facilitated by diverse sources of support. These sources and the assistance they provide vary in terms of professional expertise, the relationship with the person seeking help, and the medium through which the support is offered, including online platforms.

Following the conceptual measurement framework for seeking help for mental health problems proposed by Rickwood and Thomas (2012), sources are categorized based on where individuals seek help. This categorization includes 1) formal sources (e.g., psychiatrists and psychologists), 2) semi-formal sources (e.g., teachers and helplines), 3) informal sources (e.g., parents and friends), and 4) self-help (e.g., unguided use of informational websites). It is crucial to acknowledge that sources may overlap, for example, a website offering both formal help through psychotherapeutic treatment and informal help through the possibility of exchange with like-minded individuals.

Despite the plethora of available sources for mental health problems, help-seeking behavior is often influenced by factors such as stigma or a lack of mental health literacy. These challenges are particularly pertinent to individuals facing strong social stigmatization due to their sexual preference and/or sexual offending behavior. Studies repeatedly highlight the barriers that individuals with a sexual preference for children (and related groups such as relatives) encounter in their help-seeking process (Stelzmann, Jahnke, et al., 2020; Stelzmann et al., 2022). For instance, a scoping review by Montgomery-Farrer et al. (2023) identified internalized stigma, public and familial stigmatization, and professional stigma as factors influencing the help-seeking behavior of individuals with pedophilia. However, since help-seeking behavior remains an adaptive coping strategy, programs

targeting these specific groups depend on the proactive engagement of those affected. Thus, it becomes increasingly important to ensure that help providers are easily accessible to those in need. Besides, comprehensive overviews like this serve to inform society that assistance is available for those affected and that engaging in offending behavior is not an inevitable outcome.

In 2018, the “Centre of Expertise on Child Sexual Abuse” published the first systematic overview listing and describing projects aimed at preventing online child sexual exploitation offenses (Perkins et al., 2018). Furthermore, prevention efforts have expanded in recent years, with the establishment of new providers focusing on accessible options such as online help and treatment platforms. Additionally, online self-management platforms have emerged, catering to individuals with, for instance, a sexual interest in children. For a comprehensive list of online platforms, please refer to the “PedoHelp” website (<https://pedo.help/help/>).

The following section provides an overview of help providers addressing (potential) SOG offenders with the aim of reducing risk and psychological distress. This overview is categorized into formal, semi-formal, informal, and self-help sources of assistance. Consistent with research on help-seeking behavior (e.g., Stelzmann et al., 2022), various contact options (preferably telephone and email addresses) for specialized assistance services will be provided.

Formal sources of support

Formal support refers to assistance provided by professionals who have undergone training and acquired expertise in offering counseling and treatment, such as psychotherapists, doctors, and counselors. In the subsequent paragraph, essential projects, organizations, and institutions that provide therapeutic support to individuals seeking help and at risk of (re)offending through SOG of children will be elaborated upon, with additional points of contact provided.

Prevention Network “Kein Täter werden”

The Prevention Network “Kein Täter werden” (meaning: don’t offend) unites various project sites across Germany in cities including Bamberg, Berlin, Düsseldorf, Gießen, Hamburg, Hannover, Kiel, Leipzig, Mainz,

Regensburg, Stralsund, and Ulm. It offers on-site diagnostic, counseling, and treatment services to individuals aged 18 and above who meet the diagnostic criteria for a pedophilic and/or hebephilic sexual preference disorder (refer to DSM-5 (American Psychiatric Association, 2013) or ICD-II (World Health Organization, 2019)) and are currently undetected without legal supervision (e.g., investigation procedures, imprisonment with relaxation of sentence, probation).

Individuals experiencing psychological distress due to their inclination and/or fear of sexually (re)offending against children (e.g., using CSAI, committing direct sexual abuse/SOG) can seek help from the “*Kein Täter werden*” Prevention Network project. The National Association of Statutory Health Insurance Funds (GKV-SV) finances the work of the prevention network as part of a pilot project under §65d SGB-V.

People can contact the project anonymously via telephone or email (refer to the list of contacts for each project site: <https://www.kein-taeter-werden.de/kontakt/standorte/>) to schedule a personal assessment and intake. For anonymization, a personal identification number (PIN) is assigned to each individual seeking help. The subsequent on-site appointment involves a multi-stage, multi-method diagnosis, including a semi-structured clinical interview and a questionnaire assessment. This diagnosis aims to provide a general psychological intake assessment and a specific diagnosis of the pedophilic and/or hebephilic sexual preference disorder to determine inclusion and exclusion criteria for participation in the treatment program.

Therapeutic interventions are recommended and tailored to the needs of the patients by specialists and clinical experts. Depending on personnel resources, projects offer a wide range of interventions, including psychoeducational sessions, psychotherapy in individual and/or group settings, after-care, medical treatment of sexual impulses, counseling for relatives and acquaintances, and couples counseling. The therapy focuses on reducing psychological distress, improving mental health, and establishing complete behavioral control concerning the sexual abuse of children, both direct and indirect, online and offline. The preventive treatment of SOG offending is part of the prevention program.

Additional projects associated with the Prevention Network “*Kein Täter werden*” or single sites of the network providing assistance to those at risk of (re)offending against children will be briefly mentioned:

Associated partners of the Prevention Network “Kein Täter werden”:

- the project site of the prevention network in Munich, which is currently not funded by the GKV-SV – <https://www.kein-taeter-werden.de/kontakt/standorte/muenchen/>
- “Prevention through remote treatment – causer-related prevention of child sexual abuse in Saxony-Anhalt through a telemedical diagnosis and therapy service” provides online diagnostic and treatment for people living in Saxony-Anhalt (federal state of Germany) at the Institute for Sexology and Sexual Medicine, Charité – Universitätsmedizin Berlin – https://sexualmedizin.charite.de/forschung/praevention_durch_fernbehandlung/
- “forio” is an independent forensic institute in Swiss that deals with all forensic-psychological and psychiatric issues and also provides on-site treatment to people with a pedophilic sexual preference disorder and people that have committed sexual offense – <https://www.forio.ch/>
- “Don’t Offend – India” is an initiative that provides on-site treatment in Pune and Mumbai to people with a sexual attraction towards children and/or early adolescents – <https://dontoffendindia.org/>
- The prevention project “Just dreaming of them” provides diagnostic analysis, counseling, and treatment for juveniles aged 12 to 18 years with sexual fantasies for children at the Institute for Sexology and Sexual Medicine, Charité – Universitätsmedizin Berlin – https://sexualmedizin.charite.de/en/research/just_dreaming_of_them/
- “180 Grad” is a treatment and research project for juveniles aged 14 to 18 years to prevent and treat dysregulated sexuality in adolescents at the specialist area Clinical Psychology and Sexual Medicine, Medizinische Hochschule Hannover – <https://www.180grad-praevention.de/>
- “STOP-CSAM” is a complimentary and confidential online intervention platform that offers real-time text-based chat sessions (in German, Spanish, Portuguese, English, and Czech) with professional therapists for people engaging in problematic online behavior and accessing child sexual abuse material – <https://stop-csam.charite.de/en/>
- “Prevent it” is a free and anonymous online program (in German, Swedish, and Portuguese) based on cognitive behavioral therapy that lasts nine weeks and addresses people worried about their sexual interest in children and their risk to (re)offend against children (e.g., CSA or use of CSAI) – <https://www.iterapi.se/sites/preventit/>

“Stop it Now! UK and Ireland”

“Stop it Now! UK and Ireland” provides self-help, information, and (formal) support for individuals aiming to cease viewing CSAI or engaging in sexual conversations with children. This assistance is accessible through their website, a confidential helpline, and live chat.

A specialized offering from “Stop it Now! UK and Ireland” is a preventative program designed for individuals who have been arrested, cautioned, or convicted for internet offenses involving SOG (<https://www.lucyfaithfull.org.uk/help-to-stop-offending-online.htm>). “Engage Plus” delivers therapeutic assistance to discontinue online sexual communication with children, providing participants with the opportunity to explore their online sexual offending in a non-judgmental and supportive environment. The program, led by specialists and experienced staff, assists participants in understanding their behavior, managing difficult thoughts and emotions, and avoiding reoffending.

“Engage Plus” comprises ten sessions, each lasting 2.5 hours, conducted in groups with 6 to 10 participants. Individual treatment on a one-to-one basis, tailored to individual needs, is also available. The program extends emotional and practical support to partners, friends, and family of individuals who have been arrested, convicted, or are under investigation for online sexual offenses against children.

For contact, individuals can reach out to the project via the confidential helpline (phone: 0808 1000 900), live chat (<https://www.stopitnow.org.uk/helpline/live-chat/>), or secure email (<https://contactus.stopitnow.org.uk/>).

Subsequently, additional projects will be outlined, offering further formal assistance to individuals at risk of SOG:

- Austria: Männerberatung Wien – <https://www.maenner.at/>
- Austria: Pro Mente Plus – <https://promenteplus.at/>
- Czech Republik: Projekt Parafilik – <https://parafilik.cz/>
- Denmark: BrydCirklen – <https://www.psykiatri-regionh.dk/bryd-cirklen/behandlingsmuligheder/sider/default.aspx>
- Denmark: JanusCentret – <https://www.januscentret.dk/>
- Germany: Beratungsstelle Zweite Chance – <https://www.beratungsstelle-zweitechance.de/>
- Germany: Behandlungsinitiative Opferschutz (BIOS-BW) e. V. – <https://www.bios-bw.com/praevention>
- Germany: Fachstelle für Gewaltprävention, Niedersachsen, Bremen, Bremerhaven – <https://fgp-bremen.de/>
- Germany: Kind im Zentrum – <https://www.ejf.de/einrichtungen/beratungsstellen/kind-im-zentrum-kiz.html>
- Germany: Präventionsambulanz, Institute for Sex Research, Sexual Medicine and Forensic Psychiatry, University Medical Center Hamburg-Eppendorf (UKE) – <https://www.uke.de/english/departments-institutes/institutes/sex-research-and-forensic-psychiatry/index.html>
- Netherlands: De Forensische Zorgspecialisten (DFZS) – <https://dfzs.nl/over-ons/>
- Norway: Det Finnes Hjelp – <https://www.helsenorge.no/sykdom/psykiske-lidelser/pedofili/det-finnes-hjelp/>
- Netherlands: Plegerhulp – <https://www.plegerhulp.nl/>
- United Kingdom: The Aurora Project by the Safer Living Foundation – <https://www.saferlivingfoundation.org/what-we-do/adult-projects/aurora-project/>
- Swiss: Beforemore – Fachstelle für Prävention und Beratung bei Pädophilie und sexuellem Kindesmissbrauch – <https://beforemore.ch/>
- Swiss: DisNo – <https://www.disno.ch/>
- International: MAP friendly – <https://www.mapfriendly.com/>

Informal sources of support

Informal support is characterized as assistance provided by the social environment, including friends, partners, or like-minded peers. The subsequent paragraph will detail key projects, institutions, and organizations offering

informal support to individuals seeking help, particularly those at risk of (re)offending through SOG of children. Additional points of contact will also be provided.

“B4U-ACT”

B4U-ACT, established as a non-profit organization in 2003, is dedicated to preventing CSA through collaboration with diverse target groups, including mental health professionals, researchers, and individuals with pedophilia, also known as minor-attracted persons (MAPs). B4U-ACT extends various forms of help and referral services for individuals with pedophilia, such as a therapist directory and testimonials from affected individuals. As an informal resource, B4U-ACT provides an online forum for those affected to exchange experiences and thoughts with like-minded individuals, discussing topics like stigma, keeping the sexual interest for children hidden, and seeking help from therapists. The forum, which requires prior registration with B4U-ACT, is confidential and private.

Beyond aiding individuals with pedophilia, B4U-ACT also offers informal support for the social environment of those individuals, including family and friends. Through a private mail group, individuals can share information, discuss support options, and address topics like the fear of prejudice. For detailed information, visit <https://www.b4uact.org>.

“Virtuous Pedophiles”

“Virtuous Pedophiles” is an informal online forum for individuals with pedophilia, founded in 2012 by Ethan Edwards and Nick Devin (both pseudonyms). The platform’s goal is to provide mutual support for those affected, assisting them in leading a responsible life. One of the forum’s objectives is to educate people about pedophilia, pedophilic disorders, and CSA, breaking down existing social stigmas against non-offending individuals with pedophilia. The forum administrators explicitly condemn CSA on the website, emphasizing this stance in the group rules. With around 7000 users (as of September 2021), the forum aims to foster understanding and support among its community. For more detailed information, visit <https://www.virped.org>.

Additional initiatives that extend further informal support for individuals susceptible to SOG are:

- Belgium/Netherlands: Pedofilie – <https://pedofilie.be> and <https://pedofilie.nl/>
- Czech Republic: Pedofili CZ CEPEK – <https://pedofilie-info.cz/>
- Germany: P-Punkte – Moderated self-help chat on the topic of pedophilia and hebephilia – <https://p-punkte.de>
- USA: The Global Prevention Network – <https://theglobalpreventionproject.org>

Semi-formal sources of support

Semi-formal support refers to assistance provided by service providers and healthcare practitioners who do not hold specialized roles in the mental healthcare system, such as social workers, teachers, or chaplains. The subsequent paragraph will elaborate on essential projects, institutions, and organizations offering semi-formal support to individuals at risk of (re)offending through SOG of children, along with additional points of contact.

“Association for Sexual Abuse Prevention”

The “Association for Sexual Abuse Prevention” (ASAP) is a non-profit organization established in 2015 in the USA (Oregon), with a focus on the prevention of CSA. ASAP provides various support services (formal, semi-formal, and informal) for individuals with pedophilia. The organization not only aims to prevent CSA by offering specialized therapy for those seeking help but also attempts to raise awareness regarding CSA as a societal problem among therapists and the public. This includes reducing stigma towards individuals with pedophilia without a criminal record, generating funding for treatment programs, promoting or conducting research on the risks of CSA, and networking non-offending individuals with pedophilia. Additionally, ASAP operates an anonymous 24-hour helpline (phone: 567-772-ASAP (2727)) for individuals with pedophilia in urgent need of assistance. For more information, visit <https://asapinternational.org/>

“PrevenTell”

“PrevenTell” is an anonymous helpline (phone: 020-66 77 88) for individuals (and their social circles) concerned about losing control over their sexual behavior, acting out sexual fantasies, and potentially causing harm to others. Launched by ANOVA, formerly the Center for Andrology and Sexual Medicine in Stockholm, “PrevenTell” is staffed by both semi-formal (e.g., nurses) and formal support providers (e.g., psychiatrists, endocrinologists/andrologists, urologists, psychologists, psychotherapists). Apart from helpline assistance, affected individuals can also access therapeutic help on-site. For detailed information, visit <https://asapinternational.org/>.

Additional projects providing informal support for individuals at risk of SOG are:

- Netherlands: StopItNow (phone: 0800 266 64 36) – www.stopitnow.nl
- Spain: AngelBlau/Angel Bleu – <https://angelblau.com>

Sources for self-help

Self-help primarily involves the independent utilization of publicly available information and informational sources such as webpages, flyers, books, etc. These resources and tools can significantly enhance self-awareness, elaborate on healthier coping strategies, and improve emotional and mental well-being by offering informational and emotional support. Additionally, self-help provides advice and strategies to better comprehend how thoughts, emotions, and behaviors contribute to overall mental health and well-being. Below, we describe exemplary resources for self-help tailored to individuals with problematic sexual (online) behavior and/or a sexual preference for children:

“Troubled Desire”

“Troubled Desire” (<https://troubled-desire.com/en/>) is a global support resource designed for individuals troubled by sexual thoughts involving children and/or related behaviors, encompassing committing CSA or using CSAI. A distinctive feature of the platform is the diagnostic self-test, offering rapid feedback on sexual preferences and identifying problematic sexual behavior. Targeting individuals at risk, the ultimate goal is the prevention of CSA and the use of CSAI.

“Troubled Desire” is scalable and accessible in 20 languages. The predominantly text-based self-help modules are complemented by a series of short fiction films, and the visual design incorporates artwork in a hand-made illustration style, narrating small stories depicting a life with a sexual preference for children.

The modules are based on the BEDIT treatment manual (Berlin Dissexuality Therapy) and can be accessed individually or as a series. Users can receive an introduction to concepts of sexual preference and behavior, dispel myths on CSA, conduct behavioral analysis, challenge their own thoughts and perceptions, and work on empathy and their “good lives model”. All usage and functions adhere to the highest privacy standards, ensuring entirely anonymous and confidential engagement. The program is hosted on the Charité – Universitätsmedizin Berlin infrastructure.

“Help Wanted”

“HelpWanted” is an anonymous online course designed to provide assistance to individuals attracted to younger children (<https://www.helpwantedprevention.org/index.html>). The project aims to equip individuals with tools to support their commitment to living a safe, healthy, and non-offending life. Developed by faculty and staff at the Moore Center for the Prevention of Child Sexual Abuse, Johns Hopkins Bloomberg School of Public Health, the training course comprises five short psychoeducational video modules to help better manage one’s sexual attraction to younger children. The resources page shares links to transcripts, websites, materials, and videos providing additional support. The webpage takes specific precautions to protect user anonymity, ensuring no record of IP address or geographic location, no persistent or cross-site cookies, and no browser fingerprinting.

For additional self-help resources, please refer to the following links:

- Blog: “Celibate Pedophiles” by Ethan Edwards – <https://celibatepedos.virped.org/>
- Blog and Podcast: The Global Prevention Network – <https://theglobalpreventionproject.org/realstoriesaboutmaps>
- Blog: “Not a Monster” by Todd Nickerson – <https://notamonsterblog.wordpress.com/>

- Podcast: “Ist das normal? – Nicht jeder mit einer Pädophilie begeht sexuellen Kindesmissbrauch” – <https://www.zeit.de/wissen/gesundheit/2020-07/paedophilie-therapie-kindesmissbrauch-praevention-sexpodcast>

Challenges and future directions

Focusing on prevention providers, this article gives an overview of the current prevention landscape. Although the featured prevention providers share similarities in terms of their client focus (adult males), scope (providing information and addressing psychological risk factors for SOG), and funding approach (payment by clients, court-ordered/mandatory intervention, limited research funding), they exhibit a high degree of diversity and heterogeneity. However, these providers collectively face common challenges and needs (see also Perkins et al., 2018):

1. *Digital dynamics:* The primary challenge in preventing SOG lies in the ever-evolving landscape of the internet. Ensuring the safety of children becomes increasingly complex as they access continually advancing technology at younger ages, often without adequate supervision. This trend is accompanied by expanding opportunities and technological capabilities for criminal activities, as discussed by Merdian et al. (2023). Addressing these challenges necessitates the ability to respond to the constantly changing technological landscape that impacts all facets of SOG from both the victim's and offender's perspectives. Consequently, it is crucial to analyze the adaptation of offender strategies and incorporate these insights to continually tailor appropriate measures and prevention services for SOG offenders.
2. *Enhanced funding and expanded access:* The majority of prevention providers operate without state funding, functioning at a non-governmental level, and often facing unstable financial support. Conversely, there is a pressing need for additional financial resources to effectively manage and broaden existing services, ensuring access for low-income clients and diverse population groups (such as women, juveniles, and relatives). Furthermore, there is a necessity to increase the number of qualified professionals and staff members in this field.
3. *Evidence-based research:* There is a crucial need for the generation and dissemination of scientific knowledge regarding SOG, with the goal of establishing a “stronger evidence base for current practices and grounding existing services in psychological theory and research,” along with

collaboration with non-academic institutions (Perkins et al., 2018). Funding should be allocated to research initiatives focusing on victims of SOG offenses, individuals at risk of SOG (re)offending, and the effectiveness of treatments related to crime and mental health prevention, emphasizing the implementation of controlled studies.

4. *Transition to prevention and public education*: It is paramount to prioritize a) educating children and adolescents about the risks associated with digital media use (e.g., social media use) and general sexuality, including intimacy and pornography; b) providing parents with education on SOG and technical prevention methods and fostering their awareness of their children's online behavior; c) offering anonymous interventions and support for individuals seeking help before or after engaging in SOG offenses, prior to police involvement; d) destigmatizing non-offending individuals with pedophilia; and e) enhancing general public awareness of existing prevention services and their effectiveness.
5. *Legal clarification*: There is a necessity for legal clarification, encompassing the criminal classification of SOG within criminal law. This entails the implementation of flexibility and consistency in court processes and sentencing, with a focus on assessing the harm caused by an offense and the individual risk level of the offender (in this volume, see Büchner in chapter 4.1).
6. *Mandatory reporting laws*: Internationally, therapeutic confidentiality laws vary, directly impacting potential preventive care services. In some countries, therapeutic help can only be provided to individuals who have never offended before, which severely limits the number of people eligible for preventive efforts. This restriction prevents therapeutic work with offenders or offenders at risk as some international legislations would demand a report to prosecution authorities. Simultaneously, studies suggest that the number of unreported cases of CSA may be up to 30 times higher than the reported cases to prosecution authorities (Stoltenborgh et al., 2011), highlighting the importance of treatment for undetected offenders.

Conclusion

To address the intricate issue of SOG, a comprehensive strategy involving prevention, intervention, and support is imperative. The widespread prevalence of SOG, intensified by the extensive reach of online platforms, under-

scores the urgency of effective preventive measures for both (potential) offenders and victims. Therefore, this chapter aims to provide an exemplary overview of the diverse landscape of CSA prevention providers for (potential) offenders, shedding light on shared characteristics and challenges. The evolving dynamics of the Internet pose one of the most significant challenges for providers, necessitating constant adaptation to technological advancements within their respective offerings. Simultaneously, many providers grapple with financing their therapeutic services, making evidence-based research crucial to justify sustainable funding models.

Besides, the transition to prevention and public education takes precedence, emphasizing comprehensive initiatives for the enlightenment of children, parents, and the public, destigmatizing non-offending individuals with pedophilia, and raising awareness about existing prevention services for (potential) offenders. Legal clarification is indispensable, with a focus on flexible court procedures, harm assessment, and individual risk levels. Addressing diverse laws regarding therapeutic confidentiality on an international level is crucial to ensuring prevention services are not constrained and acknowledging the significant treatment gap for undetected offenders. A compelling prevention landscape requires a holistic approach encompassing technological challenges, financial needs, research gaps, educational priorities, legal clarity, and international variations in therapeutic confidentiality laws.

Disclaimer

While this chapter aims to delineate various sources of help, it acknowledges the impossibility of naming or describing all existing offerings. There may be additional untapped sources of assistance for affected individuals beyond the scope of this chapter. Furthermore, by offering links or references, the authors do not assume responsibility or liability for the content, utilization, relevance, or accessibility of these websites. The accuracy, appropriateness, reliability, and completeness of the information on these websites have not been verified by the authors. All the provided information was retrieved in December 2023.

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4.4 Technical Perspectives of Sexual Online Grooming

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With the increasing popularity of social networks and chat rooms, new risks for children and adolescents are emerging. In particular, they are exposed to the danger of sexual online grooming. To address this problem, technical approaches have been developed to assist law enforcement in investigating sexual online grooming and protect young people while chatting. This chapter aims to approach the issue of sexual online grooming from a technical point of view. Research in this area has focused on developing methods to detect sexual online grooming in chats automatically. These methods already achieve a high level of reliability. Thus, they provide essential support for law enforcement agencies in analysing the often immense amount of chatlogs for evidence of sexual online grooming. In addition, technical approaches can assist investigators in undercover work, sometimes required to convict sexual offenders. This includes automatically generating a summary of the linguistic habits of the person whose identity the police officer intends to assume. Moreover, chatbots posing as adolescents to attract sexual offenders have been suggested. Furthermore, this chapter describes how semi-automatic and automatic linguistic methods can be used to analyse the phases of the sexual online grooming process and presents real-time protection tools against sexual online grooming.

Keywords: sexual online grooming, text analysis, automatic detection, protection tools, chatbots

Introduction

Digital communication, such as social networks and chat rooms, is becoming increasingly popular among children and adolescents. However, it also exposes young people to new dangers. In particular, sexual online grooming has developed into a growing risk. In 2021, the German Federal Criminal Police Office reported 3,539 cases of sexual abuse of children using internet communication technologies, which includes sexual online grooming (SOG) (Bundeskriminalamt, 2022). Compared to the previous year, the number has increased by 34.5% (Bundeskriminalamt, 2022).

Therefore, detecting sexual online grooming in chats constitutes an essential task for law enforcement agencies (Ngejane et al., 2021). However, a key challenge is that investigators are often confronted with immense amounts of chat logs to analyse for potential evidence (al-Khateeb &

Epiphaniou 2016). Manually examining the texts is time-consuming and tedious and increases the risk of overlooking essential clues (Anderson et al., 2019). Furthermore, when dealing with a sensitive topic such as SOG, an unintentional bias of the investigator is also a potential source of error (Anderson et al., 2019). In addition, the intensive and continual confrontation with online child sexual abuse can be a psychological burden (Seigfried-Spellar, 2018; Zuo et al., 2018). Consequently, there is a need for tools that can automatically detect SOG in chat logs and, thus, provide support in the investigation process (Ngejane et al., 2021).

The first attempts at automatically detecting SOG were already made in 2007 as part of the research project “Study for the Termination of Online Predators” (STOP) at Iowa State University (Harms & Ferlazzo, 2007; Pender, 2007). A primary goal of this project was to develop a method to identify participants in chats who are potential sexual offenders (Pendar, 2007). Most notably, research in this area was strongly driven by the International Sexual Predator Identification Competition at PAN-2012, where a total of 16 teams competed in various tasks related to identifying SOG in chat logs (Inches & Crestani, 2012).

However, research in the technical field has been broadened beyond the automatic detection of SOG for the assistance of law enforcement agencies. Efforts have also been made to understand the grooming process in more detail, develop real-time protection systems and support investigators’ undercover work. This chapter aims to present the different technical approaches that can be used to analyse and detect SOG.

First, we describe how the stages of the SOG process can be examined by employing semi-automatic and automatic linguistic analyses. Then, approaches for the automatic detection of SOG are presented and discussed. Subsequently, this chapter outlines current practical solutions to the problem of SOG. These include automated tools for protecting children during online communication and approaches to assist the undercover work of law enforcement agencies. An overview of the datasets available for research in SOG follows. Finally, we conclude and provide an outlook for future research.

Analysis of the sexual online grooming process using technical approaches

Semi-automatic or automatic linguistic-based text analysis can provide valuable insights into the SOG process. O'Connell (2003) identified five stages of SOG, i.e. friendship-forming, relationship-forming, risk assessment, exclusivity and sexual stage. Using Pennebaker's (2015) Linguistic Inquiry and Word Count (LIWC) tool, which calculates the percentage of words belonging to predefined psychological word categories as defined in the tool's dictionary, Black et al. (2015) and Gupta et al. (2012) detected specific types of characteristics in chat parts. Subsequently, the authors used the results to explore and evaluate O'Connell's (2003) five-stage model of the grooming process. The results suggest that the LIWC tool may be used to detect the different stages in chats.

Black et al. (2015) analysed the language used in these stages based on chat messages written by 44 convicted sexual offenders. Analogous to the five phases, the messages were divided into five equal-sized parts based on word count, which were then analysed with the LIWC tool (Black et al., 2015). For each stage, the authors selected specific LIWC word categories that may be expected to correspond to the respective stage, reflecting the intentions and purposes of the sexual offenders (Black et al., 2015). For instance, the risk assessment stage, in which the sexual offender tries to find out how likely a person from the child's private surroundings will discover him, was represented, for example, by words of the categories "family" and "anxiety" (Black et al., 2015). By examining whether the words in the specific categories of a stage were frequently used in the corresponding part of the chat, the authors found that the vocabulary defined in the LIWC dictionary in some cases does not correspond to the order of the stages defined by O'Connell (2003) (Black et al., 2015).

Gupta et al. (2012) also examined O'Connell's (2003) model using the LIWC tool but in contrast to the previous approach, they manually separated 75 sexual online grooming conversations into individual stages. In addition, the authors applied logistic regression analysis to the LIWC results for each grooming stage, intending to identify LIWC categories that are particularly indicative of a stage (Gupta et al., 2012). For example, they concluded that social category words (e.g., "mate" and "talk") are distinctive of the relationship-forming stage, in which the friendship between the child and the sexual offender becomes more intense (Gupta et al., 2012). The manual segmentation of the chats into stages also allowed the authors to determine the distribution of the stages within the grooming conversations.

They found that the most significant proportion of each conversation is taken up by the relationship-forming stage (Gupta et al., 2012).

Unlike the approaches discussed so far, the approach proposed by Zambrano et al. (2019) is not oriented towards O'Connell's (2003) model. Instead, they developed a model for describing the SOG process, which is inspired by life cycles proposed in the field of information security to describe the phases or steps of a successful computer attack (Zambrano et al., 2019). As a first step, they attempted to identify the stages of SOG using Latent Dirichlet Allocation (LDA) as a topic modelling algorithm and chats from convicted sexual offenders as input (Zambrano et al., 2019). LDA reveals a given number of topics, where the topics are described by a probability distribution over words (Blei, 2003). In the case of Zambrano et al. (2019), six topics were identified. In order to characterise these six topics with linguistic aspects, in the second step, LIWC categories were assigned to a topic if the most probable terms in this topic were included in the corresponding LIWC category (Zambrano et al., 2019). The assigned LIWC categories allowed the authors to derive the sexual offender's intention for each topic or stage, which in turn enabled them to describe the phases by comparing these intentions to those of each stage of selected life cycles of computer attacks mentioned in the literature (Zambrano et al., 2019).

Automatic detection of sexual online grooming

In recent decades, several approaches have been developed to detect SOG automatically. Their aim is primarily to assist law enforcement agencies in the forensic analysis of chat logs and to reduce the time needed to detect past grooming attacks (e.g., Bours & Kulsrud, 2019; Ngejane et al., 2021; Wani et al., 2021). The procedure usually used to achieve this goal is shown in Figure 1. As can be seen, SOG detection consists of several tasks that can be accomplished by employing a hierarchical approach (e.g., Bours & Kulsrud, 2019; Villatoro-Tello et al., 2012).

Usually, the first task is to identify the SOG conversations (see Task 1 in Figure 1) (Villatoro-Tello et al., 2012). Subsequently, a distinction is made between the sexual offender and his victim within the detected predatory conversations (task 2a) (e.g., Borj et al., 2020; Cardei & Rebedea, 2017; Villatoro-Tello et al., 2012). Finally, those messages are determined that are particularly indicative of the grooming process (task 3) (e.g., Peersman

et al., 2012; Tomljanović et al., 2016). In addition, two approaches were proposed that reduce the number of conversations to be studied (tasks 0a and 0b). In the first approach, Siva et al. (2021) suggest using automatic age detection to distinguish minors from adult social media users, primarily based on the assumption that the writing styles differ, for example, in terms of the use of slang and emoticons (task 0a). The second approach (task 0b) consists of examining only the conversations of users who have provided false information about their gender and age in their social media profiles based on the fact that sexual offenders sometimes pose as adolescents and, in some cases, male offenders pretend to be female (Ashcroft et al., 2015; Peersman et al., 2011; van de Loo et al., 2016). In this context, the authors again attempted – corresponding to task 0a – to determine from the chat data whether the users were minors or adults. In order to achieve this, they tried to determine gender based on the users' language style and vocabulary. They then identified the users whose age and gender information in their profiles did not match the predicted age and gender. These two approaches can not only be used for forensic purposes but are also particularly suitable for preventive systems that aim to notify social network moderators of grooming attacks on time (Peersman et al., 2011; Siva et al., 2021; van de Loo et al., 2016). Both approaches in this context aim to reduce the number of conversations that need to be continuously monitored (van de Loo et al., 2016). Furthermore, the first approach (task 0a), where only conversations involving an adolescent are monitored, prevents the intrusion of privacy in conversations between two adults (Siva et al., 2021).

It should be noted that there is no research concentrating on the entire process shown in Figure 1. Instead, several authors focus on one or more tasks (e.g., Pandey et al., 2012; Parapar et al., 2014; Wani et al., 2021; Zuo et al., 2018). For instance, some authors aimed to identify sexual offenders in social media texts without detecting grooming conversations first (task 2b) (e.g., Parapar et al., 2014; Wani et al., 2021).

The individual tasks of grooming detection are usually realized by employing text categorisation, which aims to group text documents into predefined categories (Dalal & Zaveri, 2011). The term “text documents” refers, in this case, to conversations for task 1, all messages a user has written for task 2x or single messages of a user for task 3, and the categories can be, for example, *predatory* and *non-predatory* or *victim* and *sexual predator*. The text documents are assigned to these categories based on their characteristics, known in this context as features.

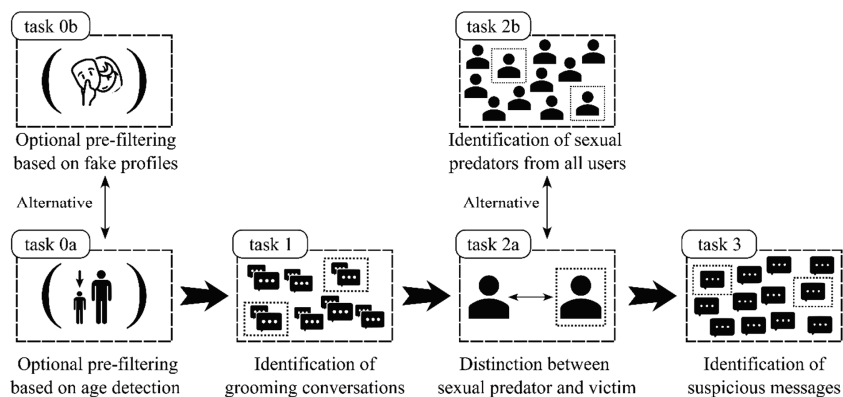


Figure 1: The procedure applied for the automatic detection of sexual online grooming

Notes. No author has applied all steps of the presented procedure.

Features

Previous work has analysed and compared different types of features, which will be described in the following.

Lexical features

Among the most commonly used features are lexical features, which are sometimes also denoted as textual features and capture the content and, respectively, the vocabulary of the conversation texts (Razi et al., 2021). Lexical features were often extracted using the standard Bag of Words (BoW) model (e.g., Anderson et al., 2019; Bours & Kulsrud, 2019; Zuo et al., 2018). BoW models consider a document as a set of its constituent terms, i.e. words, and represent it as a vector of so-called term frequencies (TF) (Salton, 1968). The TF indicates how often a word occurs in the document (Salton, 1968). Furthermore, some works applied the TF-IDF heuristic (e.g., Borj & Bours, 2019; Ngejane et al., 2018; Pendar, 2007), which combines the TF with the inverse document frequency (IDF), which gives more weight to specific words and attempts to capture the importance of a term (Jones, 1972).

Since a well-known problem of BoW is that it does not consider the relationships between words and the word order, phrases were sometimes used

as lexical features instead of individual words (e.g., Borj & Bours, 2019; Pendar, 2007). Besides, some authors included character level n-grams (e.g., Bogdanova et al., 2014; Popescu & Grozea, 2012; Ringenberg et al., 2019), which are understood to be a sequence of consecutive characters (Sapkota et al., 2015). These features have the advantage of being robust against spelling errors and different morphological variants of a word (Mladenović et al., 2021).

In order to address the problem that BoW ignores the semantic and syntactic meaning of words (Shao et al., 2018), it was proposed to use word embedding features. In those features, the words of a document are represented as low-dimensional vectors in such a way that semantically similar words have similar vector representations (Borj et al., 2020). Examples of word embeddings that have been employed to detect grooming are Word2Vec (e.g., Muñoz et al., 2020; Tomljanović et al., 2016) and GloVe vectors (Borj et al., 2020; Ebrahimi et al., 2016).

Finally, some authors created a dictionary containing typical words for grooming (e.g., Kontostathis et al., 2010; Wani et al., 2021). For this purpose, they analysed grooming conversations and identified terms that were frequently used by sexual offenders or by their victims. As lexical features, for example, the frequency of these dictionary words in the text documents was chosen (Wani et al., 2021).

Behavioural and stylistic features

In addition, behavioural features that describe characteristics of sexual offenders' chats and a participant's actions in conversations were used primarily for tasks 2a and 2b (see Figure 1) (Cardei & Rebedea, 2017). These features include a participant's response time (Morris & Hirst, 2012), the usual time of day a participant chats, the number of individuals contacted (Parapar et al., 2014) and the number of conversations started by a participant (Dhouioui & Akaichi, 2016).

Since a person's writing style also characterises their behaviour, the boundaries between behavioural and stylistic features are blurred. Features that are more stylistic in nature range from the proportion of slang words used by a conversation participant (Cardei & Rebedea, 2017) to the number of emoticons (Dhouioui & Akaichi, 2016) and imperative sentences (Bogdanova et al., 2014) to the average word length (Pandey et al., 2012) in a user's messages or conversation.

Moreover, Cardei and Rebedea (2017) introduced features that reflect the interaction between participants in a conversation and capture differences in their behaviour and writing style. For instance, they compared the proportion of questions, negations and misspelt words in a user's messages with those of their interlocutors.

Syntactical features

Another important aspect of a person's writing style is the usage of parts of speech (POS), which can be described by syntactical features (Cano et al., 2014). Here, either all detected POS within a message (Cano et al., 2014) or the (relative or weighted) frequency of certain word types (Bogdanova et al., 2014; Pandey et al., 2012) were used as features. In this context, Bogdanova et al. (2014) highlighted that personal pronouns, reflexive pronouns and modal verbs of obligation, such as "have to", "must", and "shouldn't", are particularly appropriate syntactical features for identifying predatory conversations (task 1, Figure 1) (Bogdanova et al., 2014). The increased use of these POS may indicate neuroticism (Argamon et al., 2009), which is often more prevalent in sexual offenders (Carvalho & Nobre, 2019).

Sentiment features

Based on the assumption that sexual offenders are generally considered emotionally unstable and suffer from mental health problems (Briggs et al., 2011; Nijman et al., 2009), some authors tried to reveal the emotional state of participants of a conversation using sentiment features (Bogdanova et al., 2014; Cano et al., 2014; Cheong et al., 2015; Wani et al., 2021). These features were determined using dictionaries with words associated with a positive or negative sentiment or a particular emotion, such as sadness, joy and anger. As features, for instance, the number of words belonging to a particular emotion category were used (Bogdanova et al., 2014; Wani et al., 2021).

LIWC features

Finally, psycho-linguistic patterns were considered features (Cano et al., 2014; Parapar et al., 2014) that can be identified with the LIWC tool presented in the previous section. Features based on the LIWC tool aim to capture a communicator's matters and interests as well as their psychological state and affective characteristics (Parapar et al., 2014). Examples of categories so far are the categories of words related to money (e.g., "cash", "owe"), to family (e.g., "daughter", "aunt") and to sex (e.g., "horny", "incest") and various emotional categories, including words that express anxiety and sadness (Cano et al., 2014; Parapar et al., 2014). Further categories refer to specific POS, such as pronouns, prepositions and auxiliary verbs (Parapar et al., 2014). Thus, overlaps with the syntactical and sentiment features exist.

Methods

These features are particularly needed for text classification by supervised machine learning, which is the most used approach for detecting SOG. In addition, rule-based classification systems and unsupervised machine learning methods, namely clustering, have been applied so far. The following subsection describes these three approaches in detail, which are also illustrated in Figure 2, where they were assigned to the tasks shown in Figure 1, for which they were primarily used.

Supervised machine learning algorithms

Supervised machine learning models can learn by example to classify the text documents into the categories mentioned at the beginning of this section, such as *predatory* and *non-predatory*, based on discriminative features (Zhai & Massung, 2016). For this, the models must be trained on large labelled datasets consisting of text documents and their corresponding categories (Zhai & Massung, 2016). After the training phase, they are able to make a prediction about the category of new, unlabelled text documents (Zhai & Massung, 2016). In SOG detection, mainly traditional machine learning algorithms, such as Support Vector Machines (e.g., Pandey et al., 2012; Parapar et al., 2014; Tomljanović et al., 2016), k-Nearest Neighbour (e.g., Pendar, 2007), Naïve Bayes (e.g., Bours & Kulsrud, 2019), Random

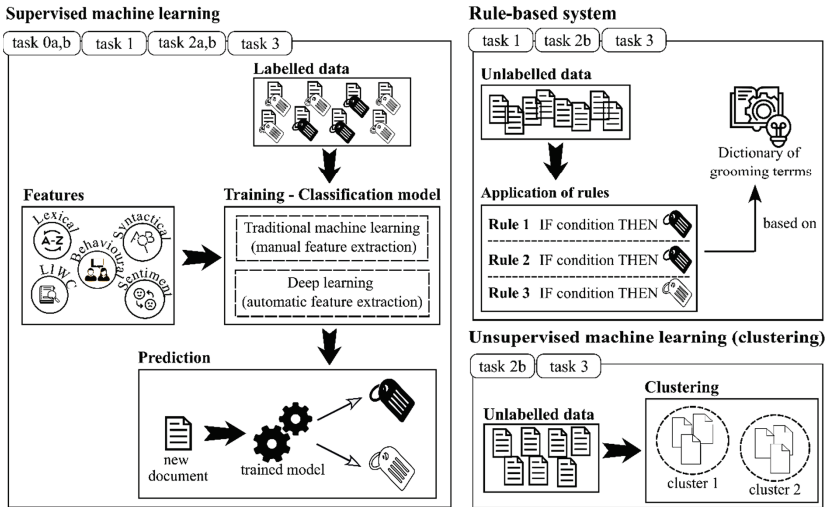


Figure 2: Methods used for the individual tasks of automatic sexual online grooming detection

Forest (e.g., Zuo et al., 2018) and Logistic Regression (e.g., Anderson et al., 2019), have been used.

However, deep learning models based on deep stacked artificial neural networks, which mimic processes of the human nervous system, are also gaining popularity (Yasaka et al., 2018). Convolutional Neural Networks (CNN) (e.g., Ebrahimi et al., 2016; Misra et al., 2019; Muñoz et al., 2020), Recurrent Neural Networks (RNN) (Kim et al., 2020) and Long Short-Term Memory (LSTM) (Ngejane et al., 2021) have been applied by now. Deep learning models differ from traditional machine learning models in that they can perform so-called automatic feature extraction. Based on this, Preuß et al. (2021) proposed an approach to address tasks 1, 2a and 3 of grooming detection, shown in Figure 1. The basic idea was to use a CNN to automatically extract the most important lexical features from the conversation texts. As reported before, previous approaches have tended to define lexical features based on a hand-crafted dictionary of terms characteristic of the grooming process. However, one challenge is defining which words are relevant for detecting predatory chats. This problem can be approached by CNN, which can learn lexical features appropriate for distinguishing predatory from non-predatory texts. These lexical features are, in this case, a specified number of semantically similar terms (Jacovi

et al., 2018), which are denoted as n-grams (Preuß et al., 2021). A major benefit of this approach is that, for example, regarding task 1, the CNN does not only identify n-grams that frequently occur in predatory conversations (Preuß et al., 2021). Instead, it also learns n-grams that are often used in everyday chats but rarely in the conversations between sexual offenders and their victims and are consequently suitable for distinguishing between suspicious and non-suspicious conversations. These automatically extracted features were used as input for training a further neural network, a multilayer perceptron, which serves as the actual classifier. Furthermore, for all tasks, except identifying the suspicious messages (task 3), behavioural and sentiment features were taken into account in addition to the lexical features.

Rule-based manual approaches for classification

The main drawback of supervised machine learning algorithms, especially deep learning methods, is that an immense amount of labelled data is required (Tyagi & Rekha, 2019). However, publicly available annotated datasets for detecting SOG, especially at the message level (task 3), are limited, and the manual labelling of datasets is time-consuming (Mladenović et al., 2021). An alternative to supervised machine learning algorithms for text classification, which does not require labelled datasets, is to manually create rules that contain conditions under which a text document is assigned to a specific category (Zhai & Massung, 2016). These rules are based on dictionaries consisting of terms and phrases commonly used by sexual offenders in SOG conversations (Gunawan et al., 2016; McGhee et al., 2011; Vartapetian & Gillam, 2012). For instance, Vartapetian and Gilliam (2012) defined the following four categories of keywords for the identification of sexual offenders (task 2b):

- phrases used to ask for the minor’s address (e.g., “the address”),
- phrases to refer to the child’s parents (e.g., “your mom”),
- phrases to emphasise the age difference between the sexual offender and the child (e.g., “you are young”) and
- phrases to express the desire for a sexual approach (e.g., “go down on you”).

Accordingly, a user was classified as a sexual offender if he utilised the phrases of these categories in a predefined occurrence.

Unsupervised machine learning algorithms (clustering)

Finally, besides the supervised machine learning algorithms mentioned above, few works have used clustering (Kodžoman et al., 2016; Toriumi et al., 2015) as a typical unsupervised machine learning method that does not require labelled data (Alloghani et al., 2020). The task of clustering is to detect groups of similar objects in a dataset (Alloghani et al., 2020).

For instance, Kodžoman et al. (2016) clustered all messages written by a user who had previously been classified as a sexual offender to identify those lines that were particularly indicative of his bad behaviour (task 3). Therefore, they applied the k-means clustering algorithm, described by Hartigan and Wong (1979), to detect two clusters of similar messages (Kodžoman et al., 2016). Subsequently, they determined which clusters contained the suspicious messages and which were the irrelevant ones.

Moreover, Toriumi et al. (2015) addressed task 2b, the identification of sexual offenders, by clustering. For this purpose, they used the Gaussian Mixture Model, introduced by Bishop (2006), to cluster users of private chat systems based on their communication behaviour (Toriumi et al., 2015). Private chat systems give users who have first met in multiparticipant chat systems the opportunity to exchange messages secretly in one-to-one chats and are, therefore, particularly attractive for sexual offenders to lure potential victims (Toriumi et al., 2015). The authors identified clusters of users that could be either sexual offenders or grooming victims, both characterised by highly active communication behaviour (Toriumi et al., 2015). They assumed that sexual offenders are users who start one-to-one chats with many other users, whereas those users who are contacted by many other users and receive many messages have a higher risk of becoming grooming victims (Toriumi et al., 2015).

Results and discussion

The final subsection compares different approaches to detecting SOG and discusses their results. Therefore, it is first necessary to understand how the performance of a method can be assessed.

Evaluation of approaches for the automatic detection of sexual online grooming

Those researchers who applied clustering methods tended to assess and interpret the results subjectively (e.g., Toriumi et al., 2015). In contrast, the performance of classification systems, i.e. supervised machine learning methods and rule-based systems, was measured quantitatively by calculating evaluation metrics, including precision, recall and F_β -score on a labelled test set (e.g., Cardei & Rebedea, 2017; Gunawan et al., 2016). For this purpose, the classification models' predictions about the documents' categories in the test set are compared with their correct labels. "Precision" describes the probability that a text document that is classified as the category of interest, in this case mostly *predatory*, is actually predatory. In contrast, "recall" indicates how many documents in the class *predatory* were detected by the classification algorithm. The F_β -score combines precision and recall using the weighted harmonic mean, where the parameter β controls whether precision or recall is deemed more important for the given task. As a standard, this parameter is set to one so that recall and precision are equally weighted. However, especially in the case of sexual offender identification (task 2a and task 2b), several researchers have used the $F_{0.5}$ -score, which emphasises precision (Cardei & Rebedea, 2017; Fauzi & Bours, 2020; Wani et al., 2021). Inches and Crestani (2012) justified this with the fact that it is more important that law enforcement agencies are presented with the right suspects than with all possible ones in order to reduce their required time to identify sexual offenders. Regarding task 3, the F_3 -score was often preferred (e.g., Kodžoman et al., 2016; Preuß et al., 2021; Tomljanović et al., 2016), which gives higher weight to recall (Borj et al., 2020). Accordingly, the focus was on recognising as many relevant lines as possible to gather the maximum amount of evidence against a suspect (Inches & Crestani, 2012).

Overview of the performance of the previous approaches

The fact that the authors used different metrics and different data sets to evaluate the performance of their methods makes it difficult to assess and compare the individual approaches. Nevertheless, it can be concluded from the results that task 1 and task 2a or task 2b of automatic SOG detection can be performed automatically with high reliability. A performance of up to 99% in the $F_{0.5}$ -score can be achieved in detecting SOG conversations

(task 1) (Fauzi & Bours, 2020). Current approaches can also obtain high results in the subsequent identification of the sexual offenders in these conversations (task 2a), with $F_{0.5}$ -scores of up to 93% (Fauzi & Bours, 2020). Furthermore, an $F_{0.5}$ -score of 96% was achieved in identifying sexual offenders from all users (task 2b) (Wani et al., 2021). The performance for task 3, identifying the most distinctive lines for grooming behaviour, is lower with F_3 -scores of up to 67% (Preuß et al., 2021). The approaches from which the performance measure was reported all used the PAN-2012 dataset for training and evaluation of their models (Inches & Crestani, 2012), which is described in the penultimate section.

Regarding the optional pre-filtering (task 0), it should be noted that the results for the distinction between underaged and adults, which is required for both subtasks (task 0a and task 0b), depend strongly on the chosen age limit at which a person was considered as adult. The authors set this age limit differently (Peersman et al., 2011; Siva et al., 2021; van de Loo et al., 2016). Nevertheless, the F_1 -score of 84% obtained by Siva et al. (2021) in classifying users as under or over 18 on a dataset of conversations from different adult and children chat systems indicates that these approaches have the potential to pre-select conversations for subsequent grooming classification. Regarding performance in the automatic detection of gender, van de Loo et al. (2016) obtained an F_1 -score of 75% on a dataset consisting of chat posts from the Belgian social network Netlog when *female* was the category of interest and an F_1 -score of 58% with *male* as the category of interest.

Comparison of the used features

Concerning the different types of features used, several studies have found that simple lexical features are suitable to differentiate between the sexual offender and his victim in a predatory conversation (task 2a) (e.g., Bours & Kulsrud, 2019; Fauzi & Bours, 2020; Pendar, 2007). Pendar (2007) concluded that sexual offenders have a characteristic vocabulary that distinguishes them from their interlocutors. In contrast, lexical features were considered insufficient by Pandey et al. (2012) and by Bogdanova et al. (2014) to recognise SOG conversations from legal chats on sexual topics between adults. Bogdanova et al. (2014) suggested that, in the more complicated cases of discriminating “cyber pedophiles’s” conversations from cybersex chat logs, a combination of different features, such as sentiment features,

psycho-linguistic features and syntactical features, should be used instead. Several studies have found that improvements over a single feature set can be achieved by combining different feature types. For example, addressing task 2b, Wani et al. (2021) combined sentiment features and lexical features and Parapar et al. (2014) lexical features, behavioural features and psycho-linguistic features. In particular, the analysis of behavioural features, for example, using the statistical distribution of features in the sexual offenders' and victims' chats (Morris & Hirst, 2012), also offers the opportunity to gain insights into the characteristics and behavioural patterns of sexual offenders. For example, studies considering behavioural features revealed that sexual offenders tend to dominate a conversation and are characterised by high user activity, starting conversations frequently, sending many messages (Morris & Hirst, 2012) and responding after a short time (Parapar et al., 2014).

Comparison of the methods

Considering the results of the different methods investigated, it can be said that, in accordance with the so-called No Free Lunch Theorem (Wolpert & Macready, 1997), no single algorithm consistently produces the best result. However, different algorithms have to be considered appropriate, depending on the data set, the selected features and the task. Both traditional machine learning algorithms, such as the Support Vector Machine (e.g., Borj et al., 2020) and Random Forest (e.g., Cardei & Rebedea, 2017), and deep learning methods (Kim et al., 2020) yielded promising results.

To our knowledge, rule-based systems cannot outperform machine learning approaches when evaluated on the same dataset (PAN-2012 dataset). Their performance was less than 55% in terms of $F_{0.5}$ -score in identifying sexual offenders (task 2b) (e.g., Vartapetian & Gillam, 2012; Vilariño et al., 2012) and 42% or less in terms of F_3 -score in marking the most relevant lines for the grooming process (task 3) (e.g., Kontostathis et al., 2012). One of the major limitations of rule-based systems pointed out by Kontostathis et al. (2012) is that they fail to detect subtle, less explicit sexual innuendoes. In addition, rule-based systems require that categories are clearly defined (Zhai & Massung, 2016). However, this is not always the case in SOG detection because SOG conversations may contain words also found in conversations of sexual nature between adults and common chats about arranging meetings (Kontostathis et al., 2012).

Moreover, rule-based systems are inflexible and rigid, so even if they have shown promising results for a particular data set, new data may require adaptation of the rules or the creation of new rules (Zhai & Massung, 2016). For example, Hidalgo and Díaz (2012) attempted to apply an existing rule-based system for detecting suspicious messages in Spanish (task 3) to classify English messages mainly through automatic translation, resulting in an F_3 -score of 0%. This result was attributed, among other things, to the lack of rules taking into account typical phrases for English grooming conversations and to the fact that the system was designed for grooming cases where the sexual offender took months to lure his victim slowly. In contrast, in the English dataset, sexual intentions often became apparent after a short time (Hidalgo & Díaz, 2012). This example thus underlines that rule-based systems are not easily transferable to slightly different application scenarios.

Regarding clustering, it is impossible to draw a meaningful comparison between this method and the other two approaches for SOG detection (see Figure 2) since only very few approaches were based on it (Kodžoman et al., 2016; Toriumi et al., 2015). The main disadvantage of clustering is that the researcher must interpret which of the created clusters, containing, e.g., messages, are considered suspicious (Meyers, 2000). In contrast, in the case of classification, they are provided with direct information about whether a message belongs to the relevant or irrelevant category. Apart from an additional error-proneness due to the subjective interpretation, clustering is unsuitable for a fully automated pipeline for grooming detection.

Early detection of sexual online grooming

The approaches presented so far have investigated the problem of automatic grooming detection from a forensic perspective and have focused on classifying complete conversation sequences as *grooming* or *non-grooming* (Milon-Flores & Cordeiro, 2022). Consequently, they are only suitable for detecting grooming attacks that have already been performed (Milon-Flores & Cordeiro, 2022). However, from the point of child protection, it is of higher importance to develop methods that address the detection of SOG in a preventive way (Milon-Flores & Cordeiro, 2022). It is, therefore, necessary to detect SOG attempts as early as possible in order to trigger an alert while the communication between the sexual offender and his victim is still ongoing and especially before an actual physical encounter has been arranged (Milon-Flores & Cordeiro, 2022).

Few methods have been developed for this scenario, known as early text classification (e.g., Escalante et al., 2016, 2017; López-Monroy et al., 2018; Milon-Flores & Cordeiro, 2022). Several authors focused on finding a more appropriate document representation than standard approaches such as BoW to model the short partial conversations that contain only minimal information (Escalante et al., 2017; López-Monroy et al., 2018; Milon-Flores & Cordeiro, 2022). Furthermore, in previous work, Escalante et al. (2016) addressed the problem of early text classification by adapting Naïve Bayes, a traditional supervised machine learning algorithm, for this scenario. Besides, Milon-Flores and Cordeiro (2022) identified several sentiment, behavioural and stylistic features, including the start time of a conversation and the proportion of correctly spelt words, which they considered particularly suitable for the early detection of SOG. López-Monroy et al. (2018) demonstrated that it is already possible to reliably identify a conversation with an F_1 -score of 94% as SOG when only 50% of the course of the conversation is known.

Solutions in practice

Solutions in practice to the problem of SOG include both automated tools designed to increase the safety of children while chatting online and approaches to support the work of law enforcement agencies.

Tools for the protection against sexual online grooming

First, software tools and frameworks to protect children from sexual offenders are presented. While the focus has tended to be on the development of general parental control software, such as Bark (Bark, 2022), FamiSafe (Wondershare, 2022) and Qustodio (Qustodio LLC, 2022), which allow parents to monitor their child's communication on social media platforms, emails or list of contacts (Winters & Jeglic, 2022), there are only few software tools that focus specifically on the protection against SOG. Moreover, these are mostly limited to the English language.

One such system is SafeChat, developed by MacFarlane and Holmes (2016), an automatic monitoring and security system that can be integrated into any instant messaging and communication service. The system checks every message the child intends to send to another user if it contains

personal information, such as their address or phone number, and blocks it. In addition, messages in which the child arranges to meet with another user are blocked. The detection of appointments is based on a comprehensive ontology, which is generally defined as a model for representing knowledge in a domain (Gruber, 1995). In this case, it captures the vocabulary commonly used for meeting arrangements in a conversation and describes the relationships between the terms in that vocabulary (MacFarlane & Holmes, 2016). In addition to blocking the messages, a notification is sent to the parents and a warning message to the child (MacFarlane & Holmes, 2016). The authors' studies demonstrated that their system is already successful in preventing the transmission of personal data (MacFarlane & Holmes, 2016) while they continue to work on improving the reliability of meeting arrangement detection (MacFarlane & Holmes, 2016).

Another framework for early detection of grooming, the Grooming Attack Recognition System (GARS), was developed by Michalopoulos et al. (2014). This system continuously monitors a child's internet communication and calculates a score that describes the current risk of grooming to which the child is exposed. After each new message, this score is updated. As soon as the computed risk value exceeds a threshold that is determined based on the age and gender of the child (InfoSec, 2022), a warning message is sent to the parents, and the child is notified of the current danger via a coloured signal (Michalopoulos et al., 2014). For the determination of the risk score, the results of different methods are combined, including classification by supervised machine learning, as described in the previous section, and the automatic identification of the child's personality type and interlocutor (Michalopoulos et al., 2014). In addition, the development of the risk score in the course of the conversation with the respective interlocutor is also taken into account, as well as the amount of time the child's user profile was visible online (Michalopoulos et al., 2014). The authors' experimental studies indicated that one issue with the system is the high number of false negatives, which means that actual grooming attacks do not raise an alarm, yet the results are also highly dependent on the appropriate threshold of alarm activation (Michalopoulos et al., 2014).

Furthermore, Penna et al. (2010, 2013) aimed to protect adolescents from the increasing risk of SOG in Massive Multiplayer Online Games (MMOG), which are usually understood as internet games in which hundreds or thousands of participants play against each other or together against the game (Barnett & Coulson, 2010; Yahyavi & Kemme, 2013). For this purpose, they developed a prototype system installed on a child's

computer that automatically detects when the child arranges an actual physical meeting in the online game chat (Penna et al., 2013). In order to do so, the tool records all conversations during the online game (Penna et al., 2013). Subsequently, each stored message is checked for indicators of an appointment, where indicators comprise words and phrases such as “meet you at” as well as regular expressions. With the help of regular expressions, stereotypical sequences, such as addresses, can be described. Based on the presence of these indicators, it is determined whether a message is suspicious while additionally taking into account whether it contains indicators that argue against SOG, for example, words and phrases that are typical for the game or general English (Penna et al., 2013). In the case of a suspicious message, the child’s parents are notified by email, for example (Penna et al., 2013). The authors’ experiments, which consisted of inserting simulated conversations about arranging a meeting into the MMOG “World of WarCraft” game chats, yielded that in 88% of these scenarios, the corresponding messages triggered an alarm (Penna et al., 2013).

Finally, AiBA, a tool for the continuous monitoring of chats and the real-time detection of SOG, has been developed based on research by the Norwegian University of Science and Technology (AiBA AS, 2022). AiBA targets both social networking platforms, where the tool is designed to support moderators in detecting sexual offenders in their chat rooms, and private persons, where AiBA is installed on their devices and then monitors their chats (NTNU, 2022). On the one hand, the system automatically detects fake profiles (AiBA AS, 2022), as described above. For this purpose, the age and gender of a user are predicted based on their writing style and typing rhythm (Raffel et al., 2020). As a result, AiBA can reveal when an adult pretends to be a child or their predicted gender does not match the stated gender in their profile (Raffel et al., 2020).

On the other hand, AiBA also applies classification methods for early detection (AiBA AS, 2022). Therefore, the tool determines a risk score for each message and informs the user on a dashboard that a current conversation is likely to be SOG as soon as the aggregated risk value of the previous messages of the conversation exceeds a threshold value (AiBA AS, 2022). A unique feature is that AiBA considers not only text messages to determine the risk value but also voice messages and images (AiBA AS, 2022). On average, only 20 messages of the conversation are sufficient for the identification of SOG (AiBA AS, 2022).

Support of law enforcement agencies

Furthermore, efforts have been made to support law enforcement agencies in undercover online policing, which may be required to identify and apprehend sexual offenders (MacLeod & Grant, 2017). One possible scenario is that police officers have to assume a child's or adolescent's identity after it has been revealed that this person has been the victim of SOG (Grant & MacLeod, 2016). The police officers then impersonate the child to maintain an online conversation with the sexual offender, gather further evidence against him and arrest him (Grant & MacLeod, 2016). Beyond that, it may also be necessary to take over the identity of an arrested sexual offender to investigate his contact network and arrest other sexual offenders (Grant & MacLeod, 2016).

In this context, the UK-based project “Assuming Identities Online” was established under the leadership of Aston University (MacLeod & Grant, 2016). The focus of this project is on describing the linguistic persona of an individual in such a way that it can be assumed by an Undercover Officer (UCO) (MacLeod & Wright, 2020). In order to reduce the preparation time usually needed before adopting an online identity, the software tool “IDentik” was developed as part of this project (MacLeod & Grant, 2017; MacLeod & Wright, 2020). This tool automatically creates a linguistic summary about an individual based on their conversation record, which includes, for example, information about their habits regarding capitalisation, punctuation, variant spellings of words and patterns of turn-taking (MacLeod & Grant, 2017; MacLeod & Wright, 2020). In addition, the tool provides a “translation” of the UCO's language into the chosen individual's language (MacLeod & Wright, 2020). However, MacLeod and Grant (2017) recommended not relying entirely on the software's results, as the UCO must also be able to recognise important aspects of the individual's language use from their chat logs on their own. Therefore, another important component of the project was to enhance the UK's national “Pilgrim” training program for UCO, as described in (HMIC, 2014), with linguistic elements (MacLeod & Grant, 2017).

Chatbots

Another approach that can be used to convict sexual offenders is that police officers or volunteers pose as adolescents in chat rooms from the beginning

and serve as decoys for the sexual offenders (Callejas-Rodríguez et al., 2016). One of the best-known organisations that followed this approach is the American Perverted Justice Foundation, which will be described in more detail in the next section (Perverted Justice Foundation, 2022).

However, one problem with this approach, as highlighted by Callejas-Rodríguez et al. (2016), is that police officers and volunteers will never be sufficient to discover all sexual offenders. In addition, pretending to be a pseudo-victim over a more extended time can be emotionally stressful (Callejas-Rodríguez et al., 2016). Therefore, chatbots – i.e., machine dialogue systems that can communicate with humans in natural language (Callejas-Rodríguez et al., 2016) – were proposed to assist law enforcement agencies (Callejas-Rodríguez et al., 2016; Laorden et al., 2012; Sunde & Sunde, 2021). In countering SOG, chatbots, police officers and volunteers pose as children or adolescents in social networks and chat rooms (e.g., Callejas-Rodríguez et al., 2016; Laorden et al., 2012). For instance, Callejas-Rodríguez et al. (2016) developed a chatbot that mimics the language of adolescents in Mexican Spanish. This chatbot works based on conversational rules that specify which words and phrases in the interlocutor's messages trigger which response from the chatbot. The experimental results by the authors revealed that the chatbot could generate messages similar in the diversity of vocabulary and syntax to those a human adolescent would formulate. The main limitation of their system, however, is the lack of a mechanism to automatically detect whether the chatbot is currently talking to a sexual offender.

This issue is approached by the chatbot developed by Laorden et al. (2012) called Negobot, also known as Lolita (BBC, 2013). Negobot pretends to be an adolescent, more precisely a 14-year-old girl (BBC, 2013) and automatically assesses whether the current conversation partner has sexual intentions (Laorden et al., 2012). As soon as the bot has concluded that the user it is talking to is a potential sexual offender, it alerts the responsible authorities and sends them the entire recorded conversation with the corresponding person (Laorden et al., 2012). The particularity of the system can be seen in the fact that it applies methods of game theory by regarding the conversation as a competitive game (Laorden et al., 2012). Similar to a game player, the chatbot attempts to find the best (conversation) strategy depending on the behaviour of its opponent, i.e. its communication partner, to achieve its goal of gathering enough information to identify them as a sexual offender without arousing suspicion (Laorden et al., 2012). In contrast to the previously presented system, Negobot is language-indepen-

dent (Laorden et al., 2012). So far, the chatbot has been tested on Google's chat service (Kent, 2013), where it was found that Negobot already has extensive conversational capabilities but that improvements are still needed, for example, concerning the recognition of irony (Kent, 2013) and topic changes (Laorden et al., 2012).

However, the legal framework conditions of the respective country must be considered when using such chatbots.

Datasets

As mentioned above, sufficiently large data sets are required for training models to detect SOG automatically. Almost all previous work was based on two data sets in English: chats from the Perverted Justice website (Perverted Justice Foundation, 2022) and the PAN-2012 dataset (Inches & Crestani, 2012), which is, however, based on the Perverted Justice data.

Perverted Justice data

The Perverted Justice Foundation Inc., usually referred to as Perverted Justice or abbreviated as PeeJ, is an American non-profit organisation that, from its inception in 2003 until early 2019, trained volunteers to pose as minors in chat rooms in order to serve as decoys for sexual offenders (Faraz et al., 2022; Perverted Justice Foundation, 2022). Close cooperation with law enforcement agencies was intended to enable the arrest and conviction of sexual offenders (Perverted Justice Foundation, 2022). For this purpose, the organisation provided law enforcement agencies with recorded conversations as evidence. In addition, meetings between the sexual offender and the pseudo-victim offered an opportunity for arrest (Perverted Justice Foundation, 2022). In the case of a conviction of the sexual offender, the conversation between him and the pseudo-victim was published on the website of Perverted Justice (Perverted Justice Foundation, 2022). A total of 622 chat logs of convicted sexual offenders are publicly available (Perverted Justice Foundation, 2022).

Although many researchers have used the Perverted Justice data (e.g., Bogdanova et al., 2014; Gunawan et al., 2016; Pandey et al., 2012; Pendar, 2007), its suitability as a data basis for the creation of systems for automatic grooming detection is controversial. On the one hand, a major criticism is

that the conversations were not conducted with actual victims (e.g., Cheong et al., 2015; Kontostathis et al., 2010). This can be particularly problematic for distinguishing between a victim and a sexual offender (see Figure 1, task 2a) because, as pointed out by Ashcroft et al. (2015), the writing style of actual minor victims and pseudo-victims posing as children can differ. On the other hand, it is at least ensured that the conversations are SOG with an actual sexual offender involved, as the chats were only published after the conviction (Kontostathis et al., 2010). Moreover, it is difficult to gain access to chats with real victims, as law enforcement agencies are often unwilling to hand them over or, depending on the legal framework of the respective country, are not allowed to do so (Inches & Crestani, 2012).

If the data was used to train a model for the distinction between *grooming* and *non-grooming* conversations (see Figure 1, task 1), the Perverted Justice chats were taken as examples of suspicious conversations. In contrast, either chats about common topics (Kontostathis et al., 2010) or legal chats about sex, for example, cybersex conversations between adults (Bogdanova et al., 2014) or posts on pornographic sites (e.g., Gunawan et al., 2016), were used as *non-grooming* conversations.

PAN-2012 dataset

The second major data source is the dataset provided by the organisers of the International Predator Identification competition as part of PAN-2012 (Inches & Crestani, 2012), a series of scientific events and contests, among other things, in digital forensic text analysis (Webis Group, 2022). This dataset consists of Perverted Justice data as *predatory* chat texts and two types of *non-predatory* chats: Internet Relay Chat (IRC) logs and Omegle chat logs (Inches & Crestani, 2012). The chat logs of IRC, which allow users to communicate in so-called channels about specific topics via short text messages (Ziegler, 2004), are not sexual and comprise general discussions (Inches & Crestani, 2012). In contrast, conversations on the website Omegle, which randomly connects two adult users in a one-to-one chat, are predominantly about sexual matters and, accordingly, more challenging to distinguish from SOG (Inches & Crestani, 2012; Ngejane et al., 2018). The PAN-2012 dataset contains significantly more *non-grooming* than *grooming* conversations, accounting for less than 4% (Inches & Crestani, 2012), in order to be as close to reality as possible.

Conclusion

Sexual online grooming has become an increasing problem and poses a particular risk to children and adolescents. To counter this issue, technical approaches can offer valuable support in obtaining insights into the process of SOG, assist criminal prosecution and increase protection against SOG.

Research in this area has mainly focused on assisting law enforcement agencies in reducing the time required to analyse the vast number of chat logs from social media. Therefore, methods have been developed that automatically identify SOG conversations, suspicious users, i.e. potential sexual offenders, or the most relevant messages for the grooming process. For these purposes, mainly supervised machine learning algorithms have been used, which have already achieved high performance in experimental studies, especially in detecting grooming conversations and identifying sexual offenders. The selection of suitable features has a considerable influence on the results, whereby combinations of different types of features, including lexical features, behavioural features and psycho-linguistic features, have proven particularly promising.

In addition, the safety of children while chatting can be improved by systems that monitor a child's chats and alert the parents as soon as possible if SOG is suspected. However, compared to a high number of general parental control systems, few tools have been developed so far that focus specifically on protection against grooming. Unfortunately, these predominantly provide support only for the English language. They either also use supervised machine learning techniques or are based on checking whether phrases indicating SOG can be found in the chat messages.

Another field where technical approaches can assist in countering SOG is undercover policing. Here, tools can automatically provide a police officer with information about the language use of a person whose identity they need to assume. Moreover, chatbots have been developed that mimic the language of children and adolescents to serve as bait for sexual offenders. However, further improvements to the chatbots' communication capabilities and clarification of the legal conditions for use in the respective country are required before actual practical use.

The main challenge at present is the limitation of appropriate data sets that are needed both for developing systems to detect grooming and, for example, for studies on the stages of the grooming process. Almost all existing studies were based on conversations in English provided by the organisation Perverted Justice, where the sexual offender communicated with a

volunteer posing as a child. A possible approach to generate additional data sets in other languages could be to consider the recorded conversations of the presented chatbots. However, conversations with actual victims would be of higher interest but are hardly available, mainly for legal reasons.

Furthermore, almost all approaches to detecting SOG for law enforcement and prevention purposes only consider text messages. An interesting approach for future research, which has so far only been used by one tool for detecting SOG, is the inclusion of voice messages and images, which are often necessary to understand the context of a text message in a conversation. In addition, as sexual offenders sometimes request revealing or nude photos in their conversations with the victim, a combination with existing procedures for automatically detecting child pornography could prove helpful.

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Acknowledgment

This edited volume aims to provide a comprehensive overview of the various aspects of sexual online grooming (SOG). The contributions from the authors shed light on this phenomenon not only from specific perspectives but also through their unique interpretations of SOG. Thus, the book encompasses insights not only from researchers but also from therapists and individuals dedicated to prevention strategies, investigation, and prosecution within the context of SOG. By incorporating this diversity, our intention is to engage a wide audience on a topic that, much like child sexual abuse in general, often remains relegated to tabooed spheres and thus lacks presence in social discourse, despite its high prevalence. However, it is important to note that this book does not claim to cover all dimensions of SOG. There are still numerous research gaps in this field that have received limited or no attention, such as female sexual online groomers, SOG among peers, and the utilization of artificial intelligence for early detection and prevention of SOG.

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SOG remains a societal issue that requires heightened awareness. Effective prevention necessitates the establishment of evidence-based knowledge at individual, societal, legal, and technological levels.

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Dr. rer. medic. Janina Neutze, Dipl.-Psych., is research assistant at the German Forensic-Psychiatric District Hospital in Ansbach, sexual therapist and training supervisor. She co-established and coordinated the “Prevention Project Dunkelfeld” at the Institute of Sexology and Sexual Medicine, Charité – Universitätsmedizin Berlin and was head of the research project MIKADO (Sexual abuse of children: etiology, Dunkelfeld and victims) at the department of Forensic Psychiatry and Psychotherapy, University of Regensburg. Her clinical and scientific focus is on etiology and impact of child sexual abuse. Since 2019 she does research on granting leave to patients in forensic-psychiatric hospitals.

Svenja Preuß, M.Sc., received her B.Sc. in General and Digital Forensic Science from Mittweida University of Applied Sciences in 2021. In 2023, she obtained her M.Sc. degree in Forensic Sciences and Engineering at BTU Cottbus. She currently works as an expert of forensic image and video analysis.

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Prof. Dr. Martin Rettenberger is the Director of the Centre for Criminology (Kriminologische Zentralstelle – KrimZ) in Wiesbaden, Germany, and is Professor at the Department of Psychology at the Johannes Gutenberg University Mainz (JGU), Germany. Since 2021, he is President elect of the International Association for the Treatment of Sexual Offenders (IATSO) and editor of the open access journal “Sexual Offending: Theories, Research, and Prevention” (SOTRAP). He has published more than 250 research articles, book chapter, and books about risk assessment, sexual and violent offending, and about several other aspects and topics in criminology and forensic psychology.

Dr. sc. hum. Halina Schmid, Dipl.-Psych., is a research assistant at the Forensic-Psychiatric District Hospital in Ansbach and an external lecturer at the University of Regensburg. She qualified for a PhD at the Ruprecht-Karls-University of Heidelberg in 2016. Her research focus deals with online sexual abuse and has been extended to granted leave in forensic psychiatry since 2019. She also works as a psychological consultant in criminal proceedings.

Prof. Dr. Alexander F. Schmidt is a supernumerary Professor in Legal Psychology at the University of Mainz in Germany. He is a licensed cognitive-behavioral therapist and does forensic expert assessments in court. His research interests focus on the indirect assessment of sexual interests as well as atypical/paraphilic interests and how these are linked to sexual offending. He also works on the stigmatization of pedohebephilia and risk factors for online sexual offending. He currently serves as Associate Editor for the Archives of Sexual Behavior.

Dr. Petya Schuhmann, Dipl.-Psych., is a practicing psychological psychotherapist and works as a lecturer at the Training Institute for Behavior Therapy Regensburg (AVR). Her scientific focus is on sexual preference, offline and online child sexual abuse and child sexual abuse images. She coordinated the prevention project “Dunkelfeld” at the Department of Forensic Psychiatry and Psychotherapy, University of Regensburg. Since 2019 she has been working in her own practice as a psychological psychotherapist with a focus on sexual therapy.

Dr. rer. medic. Miriam Schuler studied psychology and clinical neuroscience in Maastricht, NL and Hong Kong. Miriam works as research associate at the Institute of Sexology and Sexual Medicine at the Charité – Universitätsmedizin Berlin and wrote her doctoral thesis on empathy in pedophilia and child sexual abuse within the NeMUP research initiative (<http://www.nemup.de>). She is enrolled in a postgraduate psychotherapy training at the Psychologische Hochschule Berlin.

Dr. rer. nat. Anja Schulz, Dipl.-Psych., works as a lecturer for the Society of Behavioral Modification (Arbeitsgemeinschaft für Verhaltensmodifikation, AVM) and is involved as the clinical manager of the AVM outpatient-treatment center in Regensburg in training future psychological psychotherapists. She also works in her own practice as a licensed psychological psychotherapist. She has focused her prior research and clinical work on forensic psychology. As member of the MiKADO project (Sexual abuse of children: etiology, Dunkelfeld and victims), she has conducted studies on online child sexual abuse and sexual preference at the Department of Forensic Psychiatry and Psychotherapy, University of Regensburg. She further worked as a clinical psychologist at the forensic clinic of Parsberg with a focus on violent crimes and addiction.

Prof. Dr. rer. nat. Michael Spranger was appointed Professor of Forensic Text Mining and Computational Linguistics at Mittweida University of Applied Sciences in 2023. He is particularly interested in knowledge-based systems for forensic science support and has co-authored a research book, chapters, and scientific publications in this field.

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Jennifer Vogel, M. Ed., studied at the University of Education in Ludwigsburg and completed a bachelor's (2019) and master's (2021) degree in elementary school education. She currently works as a primary school teacher. Her bachelor's thesis focused on researching prevention concepts for primary school children to protect them from SOG.

Julia von Weiler, Dipl.-Psych., studied psychology at New York University and at the Freie Universität – Berlin. She previously worked at the “Children’s Safety Project” in New York City, at the “Mädchenvilla” in Germany and at a specialized counseling center with survivors of child sexual abuse. She was also head of psychology at “Kind in Düsseldorf”. Since 2003, she is managing director of “Innocence in Danger e.V.”, fighting against sexual violence using digital media – especially against the distribution of child sexual abuse material. Since 2010 she has served on different advisory boards to the German government. Currently she is also an expert member of several working groups of the German “National Council against Sexual Violence against Children and Young People”. She participated in various international research projects and is the author of various (specialist) articles and book chapters.