

ONLINE SEXUAL GROOMING: THE ROLE OF OFFENDER MOTIVATION AND GROOMING STRATEGIES

**By
Helen Taylor**

A thesis submitted to The University of Birmingham for the degree of DOCTORATE IN
FORENSIC PSYCHOLOGY PRACTICE (FOREN.PSY.D)

Centre for Forensic and Criminological Psychology, School of Psychology
College of Life and Environmental Science
The University of Birmingham

May 2017

UNIVERSITY OF
BIRMINGHAM

University of Birmingham Research Archive

e-theses repository

This unpublished thesis/dissertation is copyright of the author and/or third parties. The intellectual property rights of the author or third parties in respect of this work are as defined by The Copyright Designs and Patents Act 1988 or as modified by any successor legislation.

Any use made of information contained in this thesis/dissertation must be in accordance with that legislation and must be properly acknowledged. Further distribution or reproduction in any format is prohibited without the permission of the copyright holder.

Acknowledgements

The research for this thesis was carried out at the Centre for Forensic and Criminological Psychology within the School of Psychology at the University of Birmingham. I would like to thank the Centre for Forensic and Criminological Psychology for providing me with a stimulating, encouraging and explorative academic environment and for deepening my understanding of psychological practice and research.

I would like to thank Professor Leam Craig for his supervision throughout my Doctorate and for sharing his vast knowledge base with me. I am grateful for his advice and guidance regarding my research area of interest. In particular, thank you for helping me to shape my research question and supporting my venture to further societies understanding of the phenomenon of interest in this thesis.

I would also like to thank Professor Anthony Beech for encouraging me to follow my passion and supporting me on my journey from my Undergraduate research project through to my Doctoral training. Thank you for encouraging my interest in Forensic Psychology and for building my confidence to pursue a career within the field. I am grateful to Dr Julianne Kloess's mentorship during my Undergraduate and Doctoral research, your kind words and support has meant so much to me and filled me with confidence. Further, I would like to thank Dr Ian Elliott for his correspondence during my Undergraduate and Doctoral training. Dr Ian Elliott inspired my interest in the phenomenon of online sexual grooming. For that I am extremely grateful. I would also like to thanks Dr Darren Bishopp for his invaluable advice regarding how to make sense of statistics and enthusing me about the statistical analysis and interpretation of my research project.

Thank you to Victoria Way (MSc) for helping me to ensure methodological quality through her excellent commitment to being my inter-rater throughout my thesis. And thank you for always being there to listen to my ideas and worries along the way. Your support and friendship has been invaluable.

Finally I would like to express my love and gratitude to my parents, sister and partner and for their continued efforts to support me, nurture me and keep me focused and balanced throughout my Doctoral training and research. I could not have done it without your patience, understanding, humour and unconditional love. Thank you for giving me those pushes when I have needed them and not letting me give up at times of confidence crisis! Your words of support have continued to motivate me along my doctoral journey- I could not have asked for better travel companions!

Abstract

This thesis explores the phenomenon of online sexual grooming and concentrates upon the methods used to explore this phenomenon, the strategies used by online sexual groomers and the role of offence motivation.

Chapter 1 reflects upon the harmful impact of Internet-mediated sexual offending and the difficulties of managing this risk effectively in an ever-expanding online world. Chapter 1 introduces the phenomenon of online sexual grooming, highlighting the importance of understanding the process of grooming in order to effectively safeguard young people online. Chapter 2 explores the assessment of Internet offenders with regards to the characteristics and personality profiles of this subset of offenders. Specific attention is given to the offence characteristic of sexual deviance and a critical analysis of the psychometric properties and utility of the Multiphasic Sex Inventory is presented. It is concluded that an increased understanding of the process of online sexual grooming may shed light on appropriate assessment tools for this population of offenders. A systematic review of the existing literature directly assessing grooming transcripts is presented in Chapter 3 following a discussion of the strengths and weaknesses of different research methods that have been utilised to investigate the phenomenon of online sexual grooming. This review identifies that in-depth qualitative findings require replication with larger statistically significant sample sizes and that automated computer programmes may assist with this endeavour. It is further identified that different grooming offence motives require further attention. Chapter 4 addresses this by identifying narrative themes in the grooming transcripts of 75 contact-driven and 75 fantasy-driven offenders. From a six-factor model of data reduction, the narrative theme of *Sexual Desensitisation* is found to be more present in the fantasy-driven transcripts and contributes to a predictive model for offence motive. Overall, the six-factor model is found to complement a recently developed integrative Self-Regulation Model of online grooming (Elliott, 2015), thus supplementing and enhancing the sparse pool of literature upon which grooming models are proposed and theorised. A discussion on the thesis is presented in Chapter 5 alongside conclusions regarding the utility of the thesis.

This thesis directly supports and justifies the introduction of a new law in April 2017 that criminalises the act of adults engaging in online sexual communications with children in the absence of a motive to commit a contact offence. This chapter also highlights the need for future research and peer review to validate the findings and practice recommendations presented in this thesis.

Contents

	Page
List of Tables	6
List of Figures	7
List of Appendices	8
List of Abbreviations	9
Chapter 1: Introduction	10
Internet-mediated sexual offending.....	11
Online sexual grooming.....	14
Aims and hypothesis of the thesis.....	16
Originality and potential benefits of the current thesis	17
Chapter 2: Critique and use of the Multiphasic Sex Inventory	18
Introduction.....	19
MSI overview.....	21
Characteristics of the MSI	24
Psychometric properties.....	25
Normative data	29
Utility and application of the MSI	30
Implications for the investigation of Internet offenders.....	32
Conclusions	34
Chapter 3:	35
Abstract.....	36
Introduction.....	37
Method.....	44
Results	54
Discussion.....	77

Conclusions	83
Chapter 4:	85
Title	86
Abstract	87
Introduction	88
Aims and purpose of research	101
Method	103
Results	114
Discussion	134
Conclusion	140
Chapter 5: Discussion	142
Summary of findings	143
Implications	145
Limitations	151
Future directions	152
Conclusions	153
References	154
Appendices	178

List of Tables

	Page
Table 1. Internet Offender Typologies Summarised in Existing Literature.....	13
Table 2. MSI Scales and Subtests.....	22
Table 3. Characteristics and summary of the fifteen papers included in the systematic review.....	54
Table 4. Concepts investigated in the systematic review papers	66
Table 5. Grooming strategies identified in published literature.....	95
Table 6. Descriptive and psychometric properties of LIWC2015.....	107
Table 7. PCA six factor solution using a varimax rotation.....	114
Table 8. Statistical tests of normality and difference.....	127
Table 9. Binomial logistic regression predicting group membership from Sexual Desensitisation, Risk Awareness, Planning, Positive Incentivisation, Disinhibition and Rapport factors.....	132

List of Figures

	Page
Figure 1. Flowchart demonstrating the study selection process for the systematic review	52
Figure 2. Graph of variables obtaining significant differences between contact-driven ($n=75$) and fantasy-driven ($n=75$) groomers.....	129
Figure 3. Histogram of the number of days over which contact-driven ($n=75$) and fantasy-driven ($n=75$) groomers interacted with the pseudo-victim.....	130
Figure 4. Possible pathway model for online grooming.....	146

List of Appendices

	Page
Appendices	174
Appendix I: Papers included in the systematic literature review.....	174
Appendix II: Search terms and syntax development for electronic database platforms.....	176
Appendix III: Screening and selection tool (inclusion/exclusion criteria).....	181
Appendix IV: Studies that met the exclusion criteria ($n=48$).....	182
Appendix V: Quality assessment tool.....	187
Appendix VI: Data extraction form.....	189

List of Abbreviations

- CEOP:** Child Exploitation and Online Protection
- CP:** Child Pornography
- CSA:** Child Sexual Abuse
- DSM-IV-TR:** Diagnostic and Statistical Manual of Mental Disorders, fifth edition, text revised
- EACL:** European Chapter of the Association for Computational Linguistics
- EOGP:** European Online sexual grooming Project
- ESIQ:** Explicit Sexual Interest Questionnaire
- HMPS:** Her Majesty's Prison Service
- IAT:** Implicit Association Test
- i-SOTP:** Internet Sex Offender Treatment Program
- KIRAT:** Kent Internet Risk Assessment Tool
- KMO:** Kaiser-Meyer-Olkin
- K-S:** Kolmogorov-Smirnov
- LIWC:** Linguistic Inquiry Word Count
- MMPI:** Minnesota Multiphasic Personality Inventory
- MSI:** Multiphasic Sex Inventory
- NSPCC:** National Society for the Prevention of Cruelty to Children
- OCSE:** Online Child Sexual Exploitation
- OGRS3:** Offender Group Reconviction Scale 3
- PCA:** Principle Components Analysis
- PICO:** Population, Intervention, Comparator, Outcomes
- PJF:** Perverted Justice Foundation
- PPG:** Penile Plethysmography
- RM2000:** Risk Matrix 2000
- SOTP:** Sex Offender Treatment Program
- SPIDER:** Sample, Phenomenon of Interest, Design, Evaluation, Research type
- STOP SO:** Specialist Treatment Organisation for the Prevention of Sexual Offending
- UK:** United Kingdom
- US:** United States

Chapter 1

Introduction

Since the mid-1990s the commercial and domestic use of the Internet has expanded rapidly (Shannon, 2008). The prevalence of sexual materials online and of users utilising the Internet for sexual purposes is increasing (Cooper, Golden & Marshall, 2006; Kloess, Beech & Harkins, 2014). Worryingly, there is an ever-growing number of reports that children are being exposed to sexually explicit material and interpersonal communications online (Child Exploitation and Online Protection Centre [CEOP], 2010). This is of particular concern given the view that the on-going development of technology is vastly exceeding the capacity of the criminal justice authorities to monitor Internet misuse and respond effectively (Carr, 2004; Durkin, 1997).

Internet-mediated sexual offending

Whilst the Internet provides many advances and benefits for 1:1 and mass/global communication, its ever-growing popularity has also increased the propensity for users to engage in deviant and offending behaviour online using a number of different online platforms including that of email, chatrooms and online forums (CEOP, 2013; Chase & Statham, 2005). The Internet has created a platform for users to engage in offences against children with increased anonymity, affordability and accessibility ('Triple A', Cooper, 1998; Gillespie, 2002). For example, in 2016, Childline provided 11,252 counselling sessions relating to online abuse and threats to safety ([National Society for the Prevention of Cruelty to Children] NSPCC, 2016). It is likely the 'Triple A' factors assist in offenders overcoming a number of internal barriers that may otherwise prevent offline sexual offences (Alexy, Burgess, & Baker, 2005; Quayle, Holland, Linehan & Taylor, 2000; Quayle & Taylor, 2001).

There is a wide range of terminology used to describe offenders who utilize the Internet to commit sexual offences against children, however 'Online Child Sexual Exploitation' (OCSE) is commonly used as an umbrella term for these offences. Durkin (1997) proposed a number of ways in which OCSE offences occur including: the distribution and exchange of Child Pornography (CP) or Indecent Images Of Children (IIOC); locating potential victims for sexually abuse; communicating in a sexually inappropriate way; and corresponding with likeminded adults regarding sexual interest in children. Ospina, Harstall & Dennet (2010)

additionally identify Internet-initiated incitement or attempt to sexual abuse children via sex trafficking and prostitution as a type of OCSE.

Internet offenders

In 2011, Aslan published a review of the literature that identifies different typologies of Internet sex offenders. It was noted that a significant focus in OCSE literature is placed on CP offences, nevertheless some researchers have distinguished between CP and other OCSE behaviours. These typologies are presented in Table 1. Aslan (2011) concluded that future empirical research should focus on understanding the potential differences between contact and non-contact offenders who utilise the Internet as part of their offending behaviour. More recently, in 2012, the European Online sexual grooming Project (Webster, Davidson, Bifulco, Gottschalk, Caretti et al., 2012) suggested that Internet offenders fall broadly into two categories; those who use the Internet to groom children in preparation for sexual abuse and those who produce and/or distribute IIOC.

Table 1. Proposed Internet Offender Typologies

Lanning, 2001		Durkin, 1997		Alexy, Burgess & Baker, 2005		Beech et al., 2008	McLaughlin, 2000	
<i>Situational</i>	Opportunistic	<i>Traders</i>	Traffic child pornography	<i>Traders</i>	Collect and trade child pornography	Access child pornography impulsively/ out of curiosity	<i>Collector</i>	Collect and trade child pornography
<i>Preferential</i>	Purposely and specifically target victim	<i>Networkers</i>	Communicate with others with similar deviant interests	<i>Travellers</i>	Use the internet to meet and groom children to then abuse offline	Access and trade images to meet deviant sexual interest	<i>Traveller</i>	Use the internet to meet and groom children to then abuse offline
<i>Miscellaneous</i>	May inappropriately access material as part of investigations, pranks, and young adults	<i>Groomers</i>	Sexual communication with children	<i>Trader-travellers</i>	Collect and trade child pornography as well as travelling to meet offline for further abuse	Use the internet as part of offending behaviour either to groom victims or to distribute produced child pornography	<i>Manufacturer</i>	Produce and distribute child pornography
		<i>Travellers</i>	Use the internet to meet and groom children to then abuse offline			Access abuse images for non-sexual purpose e.g. financial profit	<i>Chatter</i>	Collect child erotica (not pornography) may engage in online sexual communication with children

Differences in behaviours, offence motivation and demographics amongst different offence typologies suggest that online sexual groomers may be a distinct offending population (Navarro & Jasinski, 2015). For example, it has been found that online sexual groomers report less paedophilic interest yet greater use of CP and higher levels of sexual preoccupation than contact sexual offenders who met their victim offline (Seto, Wood, Babchishin & Flynn, 2012). With regards to demographic differences, a sample of groomers have been found to be less likely to have a forensic history, including substance misuse, than non-Internet child sexual offenders (Wolak & Finkelhor, 2013). Shelton, Eakin, Hoffer, Muirhead & Owens (2016) noted some cross-over behaviours between groomers, non-Internet child offenders and CP offenders, however noted that grooming offences also took place when there was no history of CP use or non-Internet-mediated contact offences. Yet, despite a significant number of offences reported to the police concerning this subgroup (Gallagher, Fraser, Christmann & Hodgson, 2006), a large proportion of empirical OCSE studies focus solely on CP offences. Consequently there is somewhat of a dearth of literature assessing the phenomenon of online sexual grooming (Seto, 2017).

Online sexual grooming

Grooming is defined as the process by which an individual prepares themselves, the child and the environment for the sexual abuse of that child (Craven, Brown & Gilchrist, 2006). In an interview with BBC Radio 4 in February 2017, Chief Constable Simon Bailey of the National Police Chief's Council and leader of Operation Hydrant (Child Sexual Abuse [CSA] investigation) stated that law enforcement agencies are struggling to cope with the large and ever-growing number of online Child Sexual Abuse (CSA) reports. He believed that the focus of investigations should be on identifying offenders who pose a risk of meeting children online with the motive of arranging and perpetrating offline CSA, given the risk these offenders pose to children. Simon Bailey's focus on online sexual grooming offences is not surprising given that in 2016 over 3,700 Childline counselling sessions related directly to online sexual grooming (NSPCC, 2016). Furthermore, it is likely that many cases remain unreported (Davidson & Gottschalk, 2011; Kloess, Seymour-Smith, Hamilton-Giachritsis, Long, Shipley & Beech, 2015). This may be in part due to the interaction being prematurely terminated where concerns or suspicions arise (where the child may be aware of the risks to physical and emotional safety, and/or the adult may become aware of the risk of detection) or coercive strategies employed by the offender to prevent victim disclosure (Bryce, 2010). Victim reports may also under-represent the prevalence of the phenomenon given that many

victims may not view the offender as an abuser but rather as a romantic partner (Webster et al., 2012; Wolak et al., 2004).

Online sexual grooming has been found to have significant behavioural and mental health implications for children and young people (Ospina et al., 2010). This type of abuse may result in victims experiencing low-levels of self-esteem, trauma, the development of poor coping-strategies, depression, maladaptive interpersonal skills, feelings of guilt and shame (Ospina et al., 2009; Webster et al., 2012; Ybarra, Leaf & Diener-West, 2004). However, to date it has received limited attention in the field of psychological research (Whittle, Hamilton-Giachritsis & Beech, 2013a). Given the harmful outcomes that online sexual grooming can have on victims, the importance of understanding the phenomenon in greater depth is clear.

Detecting online sexual grooming

In the United Kingdom (UK), legislation under Section 15 of the Sexual Offences Act 2003 (Home Office, 2003), states that it is illegal for a person to meet with, or travel with the intention of meeting, a child that they have been communicating with who is under the age of 16 years old for the purposes of perpetrating CSA (Home Office, 2003). However, the legislation has been criticised for not considering non-contact behaviours involved in the grooming process and for the reactive rather than proactive nature of the legislation (Craven, Brown, & Gilchrist, 2007; Gillespie, 2002; McGuire, 2013). This has clear implications for reprimanding offenders who have groomed children to engage in cyber-sexual activities, but who have not travelled to meet the young person offline for further abuse involving physical contact. Such offenders could however, prior to the new sexual communications law instated in April 2017, be convicted for offences relating to: the distribution and production of sexually explicit materials with a child under the age of 16 years old and/or inciting a child to watch or engage in sexual activity; causing or inciting a child to engage in sexual activity; engaging in a sexual activity in the presence of a child; causing a child to watch a sexual act; possessing and inciting the production of sexually explicit pictures of children (Home Office, 2003). However it is difficult to identify intent given that there is very little information available concerning how to distinguish between grooming offenders motives. Such information could have significant implications for the detection strategies employed by law enforcement agencies to monitor and detect online sexual grooming in a time and cost-efficient way.

Aims and hypothesis of the thesis

In light of the relative dearth of literature focussing upon online sexual grooming as distinct OCSE offending behaviour, the overall aim of this thesis is to increase understanding of the phenomenon of online sexual grooming and to consider the practical implications for responding to online sexual grooming offences. Specifically, the thesis aims to:

- Consider the utility of different research methods used to explore the phenomenon
- Identify patterns within the grooming narrative that have implications for the detection of online sexual grooming and analysis of the phenomenon
- Explore whether offence motivation impacts upon the selection and utilisation of grooming strategies

It is hypothesised that the communication characteristics and strategies utilised during online interactions with minors may differ depending on the offender's motivation and target offence behaviour.

Chapter 2 considers the utility of assessment of sexual deviance to assess online sexual groomers. A critique of the use and psychometrics properties of the Multiphasic Sex Inventory is presented and alternative methods of assessment are considered. The next chapter introduces the method of exploring direct data transcripts of online sexual grooming interaction compared to self-report methods obtained from offenders and victims. Chapter 3 uses a systematic literature review to explore the findings of the online sexual grooming research that utilises the method of directly analysing the transcripts of grooming interactions. The aim of this review was to deduce information about the characteristics and conversational strategies used by online sexual groomers to successfully groom a child (or someone they believe to be a child) and the methods used to analysis this form of data. The fourth chapter presents a research project that investigates the narratives of contact-driven (those motivated to meet a victim offline) and fantasy-driven (those motivated to engage in cybersexual acts without meeting a victim offline) grooming offenders with the view to exploring potential differences in the characteristics of these interactions and whether offender motive can be predicted from patterns in the offender narrative. Linguistic patterns identified in the transcripts are compared to Elliott's (2015) Self-Regulation Model of online sexual grooming to assess whether there is theoretical harmony between the data and the proposed model. The thesis concludes with a chapter discussing the implications of the research project with regards to the detection, assessment and intervention of online sexual groomers, alongside societal prevention strategies.

Originality and potential benefits of the current thesis

Furthering our understanding and knowledge of the grooming process has important implications for informing current theories and models, as well as informing support services for victims. Increased understanding of the phenomenon of online sexual grooming may lead to more effective responses with regards to detection, detention, treatment and rehabilitation of online sexual groomers.

Additional implications and potential benefits of the thesis include the enhancement in knowledge about the patterns of strategies utilised by different Internet offenders. Such information not only informs current legislation and policy (Marcum, 2007) that is otherwise heavily reliant upon research focusing on offline grooming data (Kloess et al., 2014), but may also have future benefits regarding detection and interpretation strategies employed by criminal justice enforcers and decisions regarding risk. For example, increased understanding of the grooming process may facilitate identification of the underlying motive of the offender.

Moreover, the focus on the dynamic processes within the interaction dialogue proposed in the current research will add to the sparse pool of studies utilising a direct interaction analysis approach. This method has benefits with regards to validating the findings of self-report data (Whittle, Hamilton-Giachritsis & Beech, 2015), as well as demonstrating the utility of producing linguistic-based results that may inform the development of socio-linguistic automated computer programmes that can filter and identify potential cases of online sexual grooming based on the language used within an interaction (McGhee, Bayzick, Kontosathis, Edwards, McBride & Jakubowski, 2011; Pendar, 2007).

Finally, there is a need to improve children's understanding and their ability to identify risks and warning signs during online interactions, as well as helping to develop their skills to manage adverse experience online (Finkelhor, 2014; Kloess et al., 2015). Enhancing our knowledge of the patterns and strategies used by both contact-driven and fantasy-driven offenders can strengthen and make more effective the information that we provide to young people and the strategies that society and children's services can suggest to help keep young people safe online.

Chapter 2

Critique and Use of the Multiphasic Sex Inventory

Introduction

The use of psychometric assessments can be vital in understanding the psychological profiles of offenders and in aiding an understanding of the factors that contribute to the risk of reoffending. This has obvious benefits with regards to assisting risk decisions and prioritising cases for investigation by law enforcement agencies. This chapter investigates the use of psychometrics to explore the online offending population and critiques the use of the Multiphasic Sex Inventory as a possible tool to explore this offender population. A useful starting point in considering which psychometric tools may be useful to assess the Internet offending population is to think about what we want to know about this population. The psychological profile of these offenders may provide useful insights to help inform potential avenues for treatment and management alongside the identification of factors that should be targeted by treatment and rehabilitation.

With regards to risk, there is mixed evidence regarding the likelihood of Internet offenders going on to commit a contact offence. Bourke and Hernandez (2009) found that a large number of their Internet offender sample had also committed contact sexual offences, however Seto and Eke (2005) suggest that the recidivism rates for Internet offenders is low for online and contact offences. Wakeling, Howard and Barnett (2011) also found low reoffending rates in a sample of 1,344 Internet offenders, and of those that did reoffend, around three-quarters reoffended online rather than engaging in contact offences. This highlights the existence of Internet-offence cross-over and the need to distinguish those who are most likely to go on to commit a contact offence.

Ward and Siegert's (2002) pathway model of sexual offending (formed through a process of theory knitting) proposes four pathways that can lead to sexual offending: emotional dysregulation, social difficulties, cognitive distortions and deviant sexual interests. Middleton, Elliott, Mandeville-Norden, and Beech (2006) demonstrated the applicability of this model for 60% of a sample of 72 Internet-mediated offenders based on self-report measures. They found that the sample was characterised for the most part by the intimacy deficits and emotional dysregulation pathways. However, when comparing Internet offenders to contact child sex offenders, researchers have found that a key distinguishing feature of Internet offenders is that of higher levels of sexual deviance and sexual preoccupation (Babchisin, Hanson & Hermann, 2010; Webb, Craissati & Keen, 2000).

Sexual deviance

When considering sexual deviance, the concept refers to sexual preferences that statistically lie outside the normal range of sexual interest. Whilst offending literature uses the term sexual deviance to describe sexual offending behaviour and the characteristics of sex offenders (*e.g.* Craig, Browne, Beech & Stringer, 2007), sexual deviance also refers to non-criminal behaviours such as some forms of sexual behaviour such as bondage. Some sexual deviant interests are described as paraphilias in the DSM-IV-TR (Diagnostic and Statistical Manual of Mental Disorders, fifth edition, text revised) as: sexual interests in children, non-consenting individuals and sexual interests regarding humiliation (American Psychiatric Association, 2000). Deviance is defined by what is considered socially unacceptable and as such the validity of what is deviant is subject to change, such as the societal views of homosexuality, which was once a paraphilia subject to psychiatric treatment (Gordon, 2008). Importantly however, in addition to the DSM-IV-TR defining sexual deviance by what is socially unacceptable, distress and social difficulties also form part of the diagnostic criteria for a disorder.

The development of sexually deviant behaviour is thought to originate from a preference for deviant sexual behaviours compared to non-deviant behaviours. This ‘sexual-preference hypothesis’ (Freund & Blanchard, 1989; Lalumiere & Quinsey, 1994) is supported by meta-analytic evidence that deviant sexual interest is a strong predictive risk factor for future sexual offending in convicted sex offenders (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005). However, this hypothesis does not explain where the interest or preference originated. There are a number of behavioural and physiological theories of deviant sexual preferences (such as: Kafka’s monoamine hypothesis, Kafka, 2006; Laws and Marshall’s Conditioning Theory, Laws & Marshall, 1990; McGuire, Carlisle & Young’s (1965) Sexual Deviation Theory). Description and analysis of such theories is beyond the scope of this chapter, however many of these theories can be criticised for being dated and for having limited evidence, based on small samples (Ward, Polaschek & Beech, 2006).

It is recognised that assessment of sexual preferences is a difficult pursuit confounded by issues of impression-management and faking, respondent anxiety about the legal consequences of further disclosure, and feelings of shame and embarrassment (Banse, Schmidt & Clabourn 2010; Kalmus & Beech, 2005). Nevertheless, in 1984, Nichols and Molinder developed as a tool to assess sexual deviance called the Multiphasic Sex Inventory (MSI). The MSI was designed to assess and evaluate the sexual characteristics of sex offenders, alongside treatment progress (related to levels of openness) (Nichols & Molinder,

2010). Since publication, the MSI has been used to assess sexual characteristics, treatment prognosis and outcomes for sex offenders (*e.g.* Beech, Fisher & Beckett, 1998) in over 1400 clinical settings internationally (Dowling, Smith, Proeve & Lee, 2000).

MSI overview

Nichols and Molinder (1984) defined sexual deviance as behaviours that are illegal and that also elicit cultural and clinical concerns. They labelled the latter concerns ‘atypical sexual outlets’, which include legal behaviours such as some forms of sadomasochism. They also noted that sexual dysfunction is a cultural concern and an individual difference within the sex offender population. The MSI is representative of the legal and social perspective of the 1980’s and therefore may not necessarily be applicable in today’s society where views have changed towards previously considered atypical sexual outlets such as transvestism. It should be noted that a second version, MSI-II was published in 1996 and updated in 2000 (Nichols & Molinder, 2010). However, there is limited published data regarding the utility and psychometric properties of this tool given that it requires external interpretation from Nichols and Molinder Inc. Unlike the MSI-II that has female and adolescent versions, the MSI is only generalisable to adult male convicted sex offenders.

At the time that the MSI was developed, few psychometrics directly assessed sexual deviance and of those that did exist, they were not at a stage of development where they could be used clinically (*e.g.* Clark Sexual History Questionnaire; Nichols & Molinder, 1984). The MSI differs to personality scale measures such as the Minnesota Multiphasic Personality Inventory (MMPI) that have sexual deviance scales (Dahlstrom, Welsh & Dahlstrom, 1975; Schiele, Baker & Hathaway, 1943), as the MSI focuses on sexual characteristics and does not make inferences about personality.

In the MSI manual (Nichols & Molinder, 1984), the authors consider the aetiology of sexual deviance as involving learning-based processes outlined in Bandura’s Social Learning Theory (1971). Nichols & Molinder (1984) postulated five propositions that are required for sexual deviance to reflect a psychological construct:

1. Existence of sexual deviance: the MSI is not intended to distinguish between deviant and non-deviant individuals in the general population.
2. Cognitive progression: antecedent thought, viewing self as a victim, cognitive distortions, powerthrust cognitions, optimism about success and deciding to proceed with the target behaviour.

3. Behavioural progression: victim selection, grooming the victim and initiating the target behaviour.
4. Individual differences: between and within different offender typologies including differences in atypical sexual outlets, sexual knowledge and sexual dysfunction.
5. Defending deceptions: deception through dishonesty, distortion, and denial.

The MSI is described as an additive model where proposition 1 is reached via a formulaic equation using the other four propositions as follows:

Existence of sexual deviance = (cognitive progression + behavioural progression) + individual differences + defending deceptions

MSI development and overview

The MSI takes approximately 45 minutes to complete using a pen and pencil technique. A taped version of the assessment is available for reading disabled clients (Nichols & Molinder, 1984).

Development of the MSI scales were in part informed by the pilot study conducted by Nichols & Molinder in 1977, through a feedback consultation process with professionals and sex offenders (Nichols & Molinder, 1984). The Sexual Knowledge and Beliefs scale and Sexual Dysfunction scales were informed by previous research and theory (McCary, 1972; Kaplan, 1974; Zilbergeld, 1980). The sexual history items were designed to mirror those typically asked in a sexual history interview (Nichols & Molinder, 1984). The MSI comprises of 6 scales and 20 subtests (Table 2.).

Table 2. MSI Scales and Subtests

Scales	Subtests
Paraphilias: Sexual Deviance	Child Molest Rape Exhibitionism
Paraphilias: Atypical Sexual Outlet	Fetish Obscene Calls Voyeurism Bondage and Discipline Sadomasochism
Sex Knowledge and Beliefs	(and Sex History)
Sexual Dysfunction	Sexual Inadequacies Premature Ejaculation Physical Disabilities Impotence
Validity	Sex Obsessions Social Sexual Desirability Lie Cognitive Distortion and Immaturity Justification Parallel Items
Treatment Attitudes	

Due to copyright issues that the Parallel Items scale is no longer part of the MSI as it was been taken from the MMPI (Nichols & Molinder, 1984). This scale is therefore not clinically applicable. From initial observation of the scales, there are some clear issues with the scales within the MSI. Firstly, proposition 1 explains that the MSI is only concerned with the presence of illegal sexual deviance, yet the tool includes scales that do not differentiate between offending and non-offending populations: sexual dysfunction, sex knowledge and beliefs and atypical sexual outlets. There is little by way of explanation as to how patterns on these scales relate directly to offending behaviour. Furthermore, the labelling of the Validity scale seems inappropriate given that it does not appear to sufficiently describe all of the subtests in the scale. For example, the Social Sexual Desirability scale is reported to assess responses to ‘normal’ sexual desires and interests. This label however makes no sense since describing a ‘normal’ sexual desire does not necessitate that a response has been affected by desirability and is invalid. It may be that an offender has a number of ‘normal’ sexual desires in addition to deviant sexual interests. For example, Banse, Schmidt and Clabour (2010) found that child sex offenders also demonstrated high levels of sexual interest in age appropriate individuals. The test scales also make distinctions that are not clear, particularly in the paraphilias (it is difficult distinguish between bondage and sadomasochism for example, given that many of the behaviours represented by these labels overlap).

The main problem with the construction of the MSI is that the test was developed by medical professionals who are familiar with the medical paradigm of classifications rather

than the psychometric concept of measuring multi-dimensional continua. The MSI attempts to look outside of the medical paradigm, but in scaling constructs it may at times utilise this approach inappropriately through measuring concepts that may in fact be categorical (with regards to the presence of deviance), such as paedophilia. Whilst preoccupation with paedophilic interests may be measurable along a continuum, the presence of paedophilic interests is dichotomous. As such, the finding that child sex offenders score higher than non-child sex offenders on the child molest scale (Nichols & Molinder, 1984) tells us little about this population that we did not already know. The MSI can thus be evaluated as somewhat tautological and the question may be asked as to why clinician's use the MSI? Simply put, it appears that there are few cost-efficient alternatives that assess sexual deviance. This premise will be explored in more depth later in the chapter.

Characteristics of the MSI

Level of measurement

The MSI psychometric items produce dichotomous nominal data. The subject of the test is required to decide whether the item statement is either a 'true' or 'false' reflection of their behaviours, cognitions and beliefs. The use of a binary code is interesting given that the MSI attempts to interpret the data as scales. Binary data misses subtle nuances that can contribute to variation across a scale. A rating scale such as a 5-point Likert scale of agreement may have yielded more informative data about how much an offender agrees with a given statement and may yield information about preoccupation and intensity of experiences and interests. Ultimately it is unclear in the methodology of data collection whether the MSI is attempting to measure multi-dimensional continua or taxons. To clarify the most appropriate level of measurement, clarification of whether the MSI is a test measuring *presence* or *intensity* of sexual deviance is required as these are two distinct concepts, which will have different implications for assessment and treatment.

Self-report

The MSI is a self-report measure. Compared to other assessments of sexual deviance such as penile plethysmography (PPG) and attentional measures, self-report measures have been found to be more cost and time efficient but easier to fake (Kalmus & Beech, 2005). There are often concerns around the accuracy of self-report information and it can be difficult to validate or corroborate (Elmes, Kantowitz & Rogers, 2006). It has been argued that incarcerated sexual offenders as a subject group often provide accurate information (Craig,

Thornton, Beech & Browne, 2007). However it has also been reported that sex offender reports are in fact influenced by social desirability demand characteristics (Goldman & Padayachi, 2000). Nevertheless, social desirability can be adjusted statistically to minimise the impact (Saunders, 1991). Nichols & Molinder (1984) attempt to account self-report biases with the different modes of denial in their propositions and measures of social desirability.

Psychometric properties

In 1983, Nichols and Molinder (1984) explored the psychometric properties of the MSI in a sample that consisted of 322 subjects. This sample included different treated and untreated offender types representing the three Sexual Deviance subtests: 140 child molesters (92 from the community and 48 from state hospitals), 30 rapists and 20 expositors. The control samples consisted of 56 subjects who had a 'normal' MMPI profile. Kalichman, Henderson, Shealy & Dwyer (1992) also assessed the psychometric properties of the MSI in a sample of 248 men convicted of sexual assaults (against female victims), 139 men incarcerated for sexual offences against women, 131 male paedophilia receiving outpatient treatment, 84 men incarcerated for sexual offences against children, and 113 men awaiting sentencing for sexual offences against children. Readers will note that the two studies above are the main citations for the psychometric discussion. This is due to the significant dearth of literature explicitly exploring the psychometric properties of the MSI.

Reliability

Internal consistency

In the original psychometric studies conducted by Nichols and Molinder, only three scales were assessed for internal consistency using a Kuder-Richardson test (Nichols & Molinder, 1984). The Kuder-Richardson test has strengths in its ability to assess dichotomous data (Kuder & Richardson, 1937). The authors argued that other scales in the MSI differed in difficulty and thus could not be subject to 'usual' measures of internal consistency such as alpha coefficients (Nichols & Molinder, 1984). This argument however makes little sense given that the Kuder-Richardson test was designed as an alternative to the 'usual' measures of internal consistency. Of the scales that underwent checks for internal consistency, Nichols and Molinder (1984) found that the Social Sexual Desirability scale had the highest internal consistency ($r_u=.71$) and the Sex Knowledge and Beliefs scale had the lowest internal consistency ($r_u=.4$). Kalichman et al. (1992) found, from a sample of 44 rape offenders, a low to high level of reliability (alpha coefficient=.5-.9) for all of the scales. However, 44 is a

relatively small sample size so the reliabilities presented by Kalichman et al. (1992) are in themselves unreliable due to susceptibility to errors. Furthermore, Kalichman et al.'s (1992) sample was restricted to one offender typology and may not be generalisable to other offender groups such as expositors. Given the dearth of information available, the variability in the reliability of different scales and poor sample sizes, little if anything can be concluded about the internal consistency of the MSI.

Test-retest reliability

The authors of the MSI assessed the test-retest reliability on all scales and subtests for 32 participants over a time period ranging from 6 to 67 days ($M = 21$) (Nichols & Molinder, 1984; Nichols & Molinder, 2010). Overall, the test-retest reliability of the MSI over an average of three weeks was calculated as $r = .89$, suggesting strong test-retest reliability (Nichols & Molinder, 1984). It has further been found that the MSI has a test-retest reliability of $r = .71$ over a three-month time period for a sample of child sex offenders (Simkins, Ward, Bowman & Rinck, 1989). However, the time periods over which these investigations of test-retest reliability took place are arguably too short and thus biased by learning effects. As with the internal consistency of the MSI, little can therefore be deduced about the test-retest reliability of the MSI.

Validity

Face validity

In 1983 Nichols & Molinder invited 11 judges who had specialist knowledge and practice in the field of sexual deviance and offending to assess the validity of the test items measuring the associated scales of the MSI (Nichols & Molinder, 1984). It was reported that there was generally a high level of agreement between the judges, however some scales resulted in more agreement than others. For example, the Child Molest scale had a high level of consistency with eight judges putting the same 39 items in this category, whereas scales such as the Social Sexual Desirability scale and Sexual Dysfunction scale were reported to produce less consistent item loading (Nichols & Molinder, 1984). Arguably this could be explained by the fact that sex offenders are not homogenous and thus do not present as such. As a result, 22 items were added to various scales within the MSI (Nichols & Molinder, 1984), however there is an absence of detail about upon what theory or evidence these new items were based.

Content validity

Theorists such as Cattell (1950) and Eysenck (1950) argue that tests measuring traits should undergo a factor analysis to ensure validity, but the authors of the MSI argued the traits in the MSI cannot be measured directly (Nichols & Molinder, 1984). However, they did develop a test that fits with testable propositions as supported by Chronbach and Meehl (1955). It could be argued that the MSI measures behavioural and cognitive tendencies rather than psychological traits. However, Craig et al. (2007) did carry out a functional analysis on the MSI and found four key factors that were labelled Sexual Deviance, Sexual Desirability, Dysfunction/Justification and Normal. With regards to the heterogeneity of different scales, Kalichman et al. (1992) found the highest level of heterogeneity between the Exhibitionism (Sexual Deviance), Sexual Inadequacy (Sexual Dysfunction), Cognitive Distortion and Immaturity (Validity), Sex Knowledge and Beliefs scales.

Construct validity

In 1983, Nichols & Molinder found interscale correlations amongst a number of samples: college students, paedophiles and rapists (Nichols & Molinder, 1984). Inverse relationships were found for Sex Obsessions and Social Sexual Desirability (Nichols & Molinder, 1984) reflecting debasement and desirability respectively. With regards to cause-effect relationships demonstrated by the MSI, within the 1977 pilot study a group of paedophile offenders at different stages of assessment completed the MSI (Nichols & Molinder, 1984). Scores on the Child Molest scale were found to correlate with the subject's stage of treatment in that subjects appeared to be more open about their offences as they progressed through their treatment programme. It should however be noted that conclusions regarding inter-scale correlations were based on weak to medium correlations in many cases (except between Sex Obsessions and the Paraphilias for the rapist subject group). Furthermore, whilst correlations demonstrate associations, cause-effect relationships cannot be inferred and scales with heterogeneous items may be assessing multiple dimensions that perhaps need picking apart and separating further. For example, the Child Molest scale may be not only looking at the presence of characteristics associated with child molestation, but may also be assessing denial. As discussed earlier, a scale is not necessary to determine whether someone is a child sex offender as the presence of this is a dichotomous construct. Differences along the Child Molest scale are thus likely to be measuring something beyond the presence of a child sex offence.

In the 1983 study, Nichols and Molinder further assessed the construct validity of the MSI by separating their sample of 332 offenders by treatment stage and offence type (Nichols & Molinder, 1984). Significant differences were found on the Sexual Deviance and Atypical Sexual Outlet scales between the untreated and treated groups for the child molester and rapist samples (Nichols & Molinder, 1984). The treated group showed similar scores to the control group (college students) in the Social Sexual Desirability Scale (Nichols & Molinder, 1984). Whilst this could be indicative of treatment progress, one should also be mindful that this could be the result of learned acquiescence. Even if it is a true measure of treatment progress, it appears the MSI is measuring the construct of openness and honesty (given the correlation with scores on the sexual deviance scales) rather than sexual deviance.

Kalichman et al. (1992) found a negative relationship between the age of the female victim and the offender's score on the Child Molest scale thus supporting the construct validity of the Child Molest scale. Further research has found that offenders who commit sexual offences against children obtain higher scores on the Child Molest scale compared to different sex offender typologies (Dowling, Smith, Proeve & Lee, 2000). Baldwin and Roys (1998) also support the notion that the MSI can differentiate between different types/groups of sexual offenders based on the Sexual Deviation scales. However, this is basic tautological science and these findings tell us nothing more than the presence of the offender typology that was already known prior to conducting the MSI.

Predictive validity

Craig, Browne, Beech and Stringer (2007) explored the predictive validity of the MSI with regards to its ability to predict sexual offence reconviction. Craig et al.'s (2007) UK sample consisted of 119 convicted male sexual offenders who were followed up over a 2, 5 and 10-year period. Using a ROC analysis, it was found that the Sexual Obsession and Paraphilia Scales reflected good predictive validity at the 2 and 5-year follow-up points. Furthermore, the predictive validity of the MSI was compared against the predictive power of the more widely used Static-99 actuarial risk assessment tool (Hanson & Thornton, 2000). It was found that the Sexual Obsessions, Sexual Social Desirability, Sexual Deviance and Sexual Dysfunction scales made statistically significant contributions with regards to the prediction of sexual offence reconviction independent of the Static-99 tool. It was noted by Nichols & Molinder (1984) that the coefficient for predicative validity was higher for offenders that had only offended against female victims compared to paedophiles that had

offended against both male and female victims. Therefore, it may be that the MSI has stronger predictive validity for those who offend against only females.

With regards to treatment variance, Simkins et al. (1989) found an association between high scores on the Lie scale and treatment failure, with the MSI predicting 30-47% of the treatment variance. Wing (1983) gave the MSI to 48 sex offenders in an inpatient setting and found that Child Molest and Rape scales correlated with stage of treatment. However, it should be noted that whilst the correlation was strong for the Rape scale (.74), it was relatively weak for the Child Molest scale (.21). This appears to suggest that admittance of rape related items is linked to treatment stage, but this pattern is not seen in child sex offenders. This finding is somewhat puzzling given that Nichols and Molinder (1984) reported that scores on the Child Molest scale related to treatment stage. It is likely that the relatively low sample size affected the correlations and it is unclear how many participants were rapists and how many were child sex offenders.

Concurrent validity

The most common comparative measure used to assess the convergent and divergent validity for the MSI is the MMPI. With regards to the convergent and discriminant comparisons with the MMPI, Nichols & Molinder (1984) have published data from a sample of 55 child molesters. It was found that the MSI correlated to three MMPI scales (Lie, Infrequency and Defensiveness scales) and there was discriminant validity with regards to the two Paraphilia scales (Nichols & Molinder, 1984). It should however be noted that the correlations between the MMPI validity scales and the MSI validity scales were only moderate in strength and came from a small sample size. In a much larger sample of incarcerated sexual offenders ($n=130$), Kalichman et al. (1992) found that 30% of the variance in the MSI can be accounted for by the MMPI but the MSI also established a significant amount of independent information when used in conjunction with the MMPI, thus suggesting that the MSI is not a redundant test.

Normative samples

Normative samples allow for comparison of an individual's score to what would be expected for a given population, enabling interpretation and inferences to be made. For the MSI, the normative samples were obtained in the original 1983 psychometric study (Nichols & Molinder, 1984). Normative samples included child sex offenders, expositors and rapists. However the exposer sample was too small to create a standardised normative sample and an

estimated score for a normative sample was devised instead. The exposure population was vastly underrepresented in the psychometric investigations. The Social Sexual Desirability and Sex Obsessions scales were derived from this study via comparison with the college control sample. The Cognitive Distortion, Treatment Attitudes, Lie and Justifications scale were standardised from the small sample of untreated sex offenders. The normative samples for the MSI are open to criticism due to the small sample sizes and can thus be considered to be insufficient. In addition to some offender typologies being under represented (exposers), the group distinctions of rape and child molest may not be sufficient to reflect the heterogeneity of sex offenders.

Utility and application of the MSI

The utility of the MSI has been compared to a number of different measures of sexual deviance (Kalmus & Beech, 2005). Physiological measures of sexual interest include penile plethysmography (PPG) tests which have been found to effectively predict sexual recidivism (although less so for rape than paedophilic interest (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005). Reviews of sexual interest place PPG as quite robust compared with other measures. Akerman and Beech (2011) reviewed physiological and cognitive and psychometric measures of sexual interest to reach this conclusion and also concluded that there is a need to develop a comprehensive psychometric that assesses all aspects of sexual arousal and adequately addresses the issue of faking. In their review, Snowden, Craig and Gray (2011), highlight that whilst cost-effective and less open to faking than psychometrics, Implicit Association Tests (IATs) do not explain the relationship between cognitions and sexual arousal whereas PPGs directly measure arousal.

PPG methods suffer from poor psychometric properties such as low-test-rest reliability, poor discriminant validity and a lack of robust procedure and standardisation of test materials (Banse et al., 2010; Kalmus & Beech, 2005). Indirect measures such as Implicit Association Tests (IATs) are argued to be less effected by the limitations of psychometric questionnaires given that it is more difficult for the participant to engage in impression-management strategies due to the physiological arousal and response latency measure (Banse et al., 2010). IATs are arguably as time and cost effective as psychometric questionnaires unlike PPG measures. Nevertheless, compared to other psychometrics such as personality inventories, the MSI has been found to be more sensitive to psychosexual characteristics (Becker & Kaplan, 1990) in that it has also been found to be more effective in distinguishing

between different offender groups than PPG measures (Stinson & Becker, 2008). The MSI is also not subject to ethical criticism that plagues PPG and attentional measure techniques with regards to the use of images of minors in the context of measuring sexual interest, however it should be noted that IATs are affected by the ethical concerns regarding PPG as it does not measure or necessitate sexual arousal (Abel, Huffman, Warberg & Holland, 1998; Kalmus & Beech, 2005; Marshall & Fernandez, 2003). Similarly, whilst Card sort technique has been found to have high internal reliability and discriminative validity in child sex offender subject groups (Holland, Zolodek, Abel, Jordan & Becker, 2000), there are ethical concerns about the content of the test items and it has been evaluated as less sensitive to 'faking' than the MSI (Kalmus & Beech, 2005).

Although the MSI was not designed to be a measure of denial, many studies have investigated the utility of the MSI in investigating this premise (*e.g.* Jung & Nunes, 2012; Waysliw, Haywood, Grossman, Johnson & Liles, 1992), leading some to argue that the MSI functions primarily as a measure of denial (Schlank, 1995). For example, Clarke and Grier (1995) found significant differences in scores on the Child Molest scale when comparing those who denied their offences compared to offenders who admitted their offences but had not yet begun treatment. Interestingly, there were no differences in the scores on the Validity scales (Clarke & Greir, 1995). Perhaps the Validity scales do not tell us about levels of openness, but tell us something about the mechanisms of denial/defence employed.

With regards to the relationship between openness and risk of recidivism, Mills, Loza and Kroner (2003) found that high levels of risk were associated with lower scores of Social Sexual Desirability. This begs the question as to whether measures of denial have clinical applications. It has been highlighted that the link between denial and risk of recidivism is somewhat tenuous due to the lack of consistent empirical evidence (Ware & Mann, 2012). There is now a growing body of empirical evidence suggesting that admittance is not essential for meaningful engagement in rehabilitation programmes and meeting treatment objectives (*e.g.* Blagden, Winder, Gregson & Thorne, 2014).

As highlighted on p24 during the discussion of the level of measurement, the MSI somewhat confusingly appears to use a dichotomous rating system of presence and non-presence to produce a scaled interpretation. Whilst this gives clinicians an idea of the number of sexually deviant behaviours an individual has engaged in, it gives little information that may help inform diagnosis. Work by Cantor and colleagues have highlighted the possibility of a paedophilic taxon and biological propensities for paedophilia. For example, lower white matter volumes have been found in the superior fronto-occipital fasciculus and the right

arcuate fasciculus (areas that respond to sexual cues) of paedophiles (Cantor, Kabani, Christensen, Zipursky, Barbaree, Dickey et al., 2008). Furthermore, the MSI does not distinguish between taxons of paedophilic interest such as the distinction between paedophilia and hebephilia, which have been distinguished by other measures such as PPG (Blanchard et al., 2008). As such the MSI tells us little by way of how scores translate into falling within a taxon of paedophilic interest; a criticism highlighted by Mackaronis and Strasber (2011) with regards to the Child Molest scale.

The MSI requires the existence of sexual deviant behaviour, however it has been suggested that deviant sexual fantasy often precedes sexual offending (Abel, Becker, Cunningham-Rathner, Mittelman, Murphy & Rouleau, 1987; Ward, Polaschek & Beech, 2006). Furthermore not all individuals who have a deviant sexual interest in children go on to offend against children (Seto, 2008). This creates difficulties when assessing Internet-offenders who have not engaged in a contact or IIOC offence. If this group of offenders is deemed to be in the cognitive processing or fantasy stage of sexual deviance then the MSI would not be an applicable measure to assess this sub-group of offenders. The problem with the MSI is that it assumes that deviance is a categorical distinction and lacks the bandwidth to measure 'normal' to 'deviant'. Furthermore the MSI was developed in an era where the Internet was in its infancy particularly with regards to commercial and personal use, as such the MSI may be somewhat out of touch with the unique characteristics the Internet-provides with regards to a new virtual reality that allows for non-contact sexual offences beyond exposure.

Implications for the investigation of Internet offenders

If use of the MSI is insufficient/inappropriate to yield in-depth, clinically useful information about such Internet offenders, then other methods of assessment need to be considered.

In an updated meta-analysis of 30 Child Pornography (CP), contact child sex offenders and mixed child sex offender samples, Babchisin, Hanson and Van Zuylen (2014) furthered the findings from their 2011 meta-analysis and reported contact and mixed offenders to be characterised by higher levels of antisociality than Internet offenders. Elliott, Beech, Mandeville-Norden and Hayes (2009) compared the psychological profiles of Internet CP offenders with contact child sex offenders using a number of different psychometric self-

report measures¹. They found that fantasy, under-assertiveness and motor impulsivity scales had predictive properties for identifying Internet offenders. Like Babchisin et al. (2014), Elliott et al. (2009) found that the characteristics that predicted contact offending related to cognitive distortions that in turn related to the antisocial cognitive pathway described by Ward and Seigert (2002). Elliott and colleagues (2009) suggested that the finding that Internet offenders appear to demonstrate less pro-offending attitudes may reflect the premise that these offenders are less likely to progress to commit contact offences. To explore this premise further, Elliott, Beech & Mandeville-Norden (2013) conducted a similar study with the addition of a mixed Internet/contact sex offender group. They found that mixed offenders' psychological profiles were more similar to the Internet only group than the contact only group. Findings that have obtained significant results in terms of differentiating between Internet offenders and contact offenders could thus inform the development of a psychometric tool specific to Internet offenders which could have applications in predicting the risk of contact offending. With regards to existing risk assessment tools, Wakeling, Howard and Barnett (2011) compared Risk Matrix 2000 scales (RM2000) and Offender Group Reconviction Scale 3 (OGRS3) and reported that these tools had moderate to very good predictive properties with regards to assessing recidivism in Internet offender populations. It appears that Wakeling et al. (2011) did not use the adapted version of the RM2000, designed for use with CSEM offenders. This is interesting given that has previously been found that the standard RM2000 may over-estimate risk of reconviction in CSEM populations (Osborn, Elliott, Middleton & Beech, 2010).

Unfortunately, Babchisin et al. (2014), Elliott and colleagues (2009; 2013) and Wakling et al., (2011) were unable to include online sexual groomers in their samples given both the dearth of literature relating to this offender group and the sample sizes of existing

¹ Victim Empathy Distortion Scale (Beckett & Fisher, 1994); Children and Sex Questionnaire (Beckett, 1987); Short Self-Esteem Scale (Webster, Mann, Thornton, & Wakeling, 2006); University of California Los Angeles (UCLA) Loneliness Scale (Russell, Peplau, & Cutrona, 1980); Kingston Sexual Behavior Clinic: Social Response Inventory (Keltner, Marshall, & Marshall, 1981); Interpersonal Reactivity Index (Davis, 1980); Nowicki-Strickland Locus of Control Scale (Nowicki & Duke, 1974); Barratt Impulsivity Scale—11 (Barratt, 1994); Paulhus Deception Scales (Paulhus, 1998)

studies exploring this phenomenon. As such, the findings and subsequent applicability of the tools used by these researchers require validation within grooming populations. Such investigations could inform the development of specific Internet grooming offence tools akin to the Kent Internet Risk Assessment Tool (KIRAT), that has been developed as an investigation prioritisation tool for offenders found in possession of IIOC, (CEOP, 2012) and risk assessment tools such as the Child Pornography Offender Risk Tool (CPORT). The CPORT was specifically design to assess CSEM offender risk and has been found to have statistical significance in predicting reoffending for CSEM users with a previous contact offence, however it should be noted that it does not accurately predict risk where there is not a history or presence of a contact offence (Seto & Eke, 2015).

Conclusions

Caution should be exercised when using the MSI and quoting the psychometric properties of the test given the small sample sizes utilised, limited generalisability to different offender samples and the reliance of weak-moderate correlations. The most studied sample group in the MSI research is that of child sex offenders. This is likely due to this group being the largest normative sample in the original studies used to design the MSI and some of the strongest psychometric evidence coming from this offender group (Nichols & Molinder, 1984). However, the MSI is out-dated in the sense that it is not designed for the modern world and modern approaches to offending such as use of the Internet to perpetrate CSA offences. Furthermore, whilst the MSI provides useful information about the sexual characteristics of sex offenders and can give insight into treatment progress, it does not tell us about the strategies used during the phenomenon of offending and how these strategies are employed. The MSI may therefore overlook some of the phenomenological (behavioural progression) concepts of sexual deviance described in the behavioural progression proposition of the MSI.

It has been argued that neither the legal nor the clinical approach to assessing sexual deviance are currently sufficient to conceptualise and infer deviant sexual interest (Marshall & Fernandez, 2003; Marshall, 2007). In order to design conceptually valid assessment tools for online sexual grooming there is arguably a need to better understand the phenomenon with a focus on the *how*, as well as the *who* and *why*. Furthermore, given that sex offenders are not a homogeneous population and that there has been found to be significant differences in the profiles of different offender typologies (*e.g.* Elliott et al., 2009; Elliott et al., 2013), investigation of potential differences in the *how*, is warranted.

Chapter 3

Systematic Literature Review

What does analysis of offender-victim interactions tell us about the process of online sexual grooming and the strategies employed by online sexual groomers?

Abstract

The increasing popularity of the Internet has created a new medium for offenders to groom children online for the purpose of sexual abuse. This systematic review aims to synthesise the sparse pool of research that directly analyses offender-victim interaction transcripts with a view to gaining a deeper understanding about what grooming transcripts reveal about the process of online sexual grooming and the strategies employed by online sexual groomers.

A scoping strategy was employed to assess the need for the current review and inform the development of the research question and search terms to be included in the search strategy. The search strategy was conducted across four electronic databases and a grey literature database. Additional hand searches and correspondence with experts was also undertaken to ensure saturation of the available literature regarding the phenomena of interest. A screening and selection tool alongside a quality analysis and data extraction tool were applied.

The search produced fifteen research papers relevant to the research question. A narrative synthesis was applied comparing the methodology and key findings of the selected papers. The findings of the studies were complimentary and corroborated police data and self-report literature from both offenders and victims of online sexual grooming with regards to identifying strategies employed by groomer. The findings suggested that grooming transcripts have distinct narrative qualities that can be distinguished from other online interactions and can be analysed using automated computer programmes. Furthermore, the systemic literature review revealed that online sexual grooming may not be a linear sequential process and offenders do not appear to be homogenous in the strategies employed.

Understanding the dynamics of offender-victim interactions may lead to improvement in the detection and prevention of future online and offline sexual abuse. Further advances in analytic methods, alongside improvements with regards to the use of larger, statistically significant sample sizes are required to validate the findings of the reviewed studies.

Introduction

Online sexual grooming

Sexual abuse of a child is reported to be more likely to occur following the act of grooming (Durkin, 1997; Ost, 2004) and is thus likely to be widespread in its use among child sexual offenders. The Sexual Offences Act 2003 (Home Office, 2003) does not provide an operationalised definition of online sexual grooming (Whittle, Hamilton-Giachritsis, Beech & Collings, 2013a). This may be due to a somewhat incomplete understanding of the phenomenon alongside a lack of in-depth knowledge about individuals who use the Internet to groom children for sexual abuse (Seto, Wood, Babchishin, & Flynn, 2012). The most current and widely accepted multifactorial definition of grooming was proposed by Craven, Brown and Gilchrist (2006). Craven et al. (2006) describe three systemic processes involved in grooming: grooming the self; grooming the victim's environment; and grooming the child. 'Grooming the self' refers to the offender overcoming internal inhibitions by providing justification, minimisation or denial of their behaviour (Craven et al., 2006; Finkelhor, 1984). Grooming the victim's environment includes the grooming of significant others in the child's life with regards to assessing how accessible and vulnerable the child is and how distant they are physically and emotionally from their support system (Craven et al., 2006; Finkelhor, 1984; Kloess, Beech & Harkins, 2014; McAlinden, 2006). 'Grooming the child' involves identifying a potential victim who are susceptible to grooming strategies and is thus likely to comply with the grooming strategies. Characteristics of such young people can be in part described by some of the vulnerabilities identified by Kloess et al. (2014), Ospina, Harstall and Dennett (2009) and Whittle Hamilton-Giachritsis, Beech and Collings (2013b) with regards to psychosocial vulnerabilities such as low self-esteem, mental health difficulties, social isolation, a lack of resilience, and previous victimisation. The function of this behaviour is to gain compliance, maintain secrecy and avoid disclosure, all of which may act to increase the offender's justification and minimisation regarding the impact of the offender's behaviour (Craven et al., 2006).

There is a general assumption that grooming is a primarily manipulative preparatory process whereby the victim is coerced into behaving a certain way and is prepared for subsequent Child Sexual Abuse (CSA) (Berson, 2003; Whittle et al., 2013a). Grooming has been described broadly as the strategies and behaviours employed by an offender to prepare a child for sexual abuse (Kloess et al., 2014; McAlinden, 2006). A key feature of grooming is described as the building, and subsequent abuse, of trust (Wolak, Finkelhor & Mitchell,

2004). A key component of the grooming process is therefore the development of trust and rapport (Olson, Daggs, Ellevold & Rogers 2007). The development of a perceived exclusive relationship acts to groom the victim's environment by distancing the victim from peers, family and positive role models (McAlinden, 2006). This increases victim dependence on the groomer increases the groomer's power and control (Cossins, 2002, Craven et al., 2006; Shannon, 2008). Fundamental elements of grooming also include the introduction of sexual themes and assessment of the young person's willingness to engage in sexual behaviour and activities (Katz, 2013; Leclerc, Wortley & Smallbone, 2011).

Some groomers may pose as a child to mirror and attract a specific victim demographic (Dowdell, Burgess, & Flores, 2011) or target chat rooms or online forums geared towards child users (Lanning, 1998; Malesky, 2007). However, this is not a homogenous trait amongst all online sexual groomers. For example, Kloess, Seymour-Smith, Hamilton-Giachritsis, Long, Shipley and Beech (2015) found that, whilst groomers may adjust their professed age to minimise the age gap, they are often honest about the fact that they are adults. These findings have been replicated in further research (*e.g.* Wolak, Finkelhor, Mitchell & Ybarra, 2008) and it has been questioned whether offenders who present a false persona may have different offending motivations to those that do not (Williams, Elliott & Beech, 2013).

Grooming strategies

Grooming strategies ultimately function to increase the power held by the offender and ultimately lead to increases in victim compliance, secrecy and avoidance of detection (Abel, Becker, & Cunningham-Rathner, 1984; Cossins, 2002; O'Connell, 2003; Shannon, 2008). The Luring Communication Theory, developed by Olson et al. (2007), describes the dynamic process of grooming and the strategies utilised by sexual groomers. As with much of the grooming literature, this model is based upon evidence regarding offline grooming in the physical world. The theory was developed following a grounded theory (Strauss & Corbin, 1998) qualitative analysis of existing grooming literature. It attempts to capture the process of grooming by identifying how offenders initially gain emotional and physical access to their victim and describes the maintenance or disruption of sexual abuse (Olson et al., 2007). Key features of the model include the cycle of entrapment, whereby the offender reduces the victim's sense of agency, self and notion of right and wrong. The cycle is achieved via methods of deceptive trust development with the victim and grooming of the environment, including significant others in the victim's support network (van Dam, 2001).

The theory proposed by Olson et al. (2007) highlights that offenders employ a number of strategies and techniques to aid successful grooming of their victim. Strategies to avoid detection and reporting by the victim have been suggested to include the development of an exclusive relationship and the building of trust and rapport (Olson et al., 2007), achieved via giving attention, affection, and showing appreciation of the victim (Shannon, 2008). Identified strategies employed by the groomer to gain the victim's trust include the use of bribes, gifts, affection and empathy (Bennell, Alison, Stein, Alison & Canter, 2001; Elliot, Browne & Kilcoyne, 1995; Gilgun, 1994). The development and maintenance of rapport not only increases the chances of successful grooming with regards to the victim perceiving the offender positively (Ospina et al., 2010), but also serves to groom the environment by distancing the victim from protective support networks and relationships by placing emphasis on the importance and perceived benefits of the victim-offender relationship (McAlinden, 2006). This ultimately increases the victim's dependence on the offender subsequently increases the offender's control (Cossins, 2002; Craven et al., 2006; Shannon, 2008).

Further grooming techniques that are highlighted by Olson et al. (2007) include communicative sexual desensitisation and reframing (highlighting the benefits of sexual contact for the child) (Lang & Frenzel, 1988). Physical and mental isolation of the victim acts to enlarge and/or capitalise on pre-existing emotional distance from the victim's support network (Conte, Wolf & Smith, 1988; Finklehor, 1984). Additional offender approaches outlined include verbal seduction, mentoring and physical escalation/sexual desensitisation (Olson et al., 2007).

An important aspect of successful grooming is the avoidance of detection and ensuring victim compliance with secrecy; thus managing the victim's response to sexual abuse. The literature suggests that the use of gifts, rewards and incentives may be employed, whilst the use of illicit substances and exposure to pornographic images may also be used to desensitise the victim and lower their inhibition (Beech et al., 2008; Leclerc, Proulx, & Beauregard, 2009; Singer, Hussey & Strom, 1992). However, offenders may also employ more coercive strategies as previously discussed (Cossins, 2002; Craven et al., 2006). Furthermore, it has been suggested that offenders may capitalise on victim feelings of guilt and shame (Cossins, 2002; Craven et al., 2006).

Coercive techniques may include threats to remove affection and exclusivity, threats that the victim will not be believed or if believed may be blamed, and threats of physical/emotional harm to the victim or the victim's loved ones (Berliner & Conte, 1990; Conte et al., 1988; Elliot et al., 1995; Palmer, Brown, Rae-Grant & Loughlin, 1999).

Alternatively, the offender may maintain isolation and rapport building techniques to increase victim dependency (Leberg, 1997; Warner, 2000). Finally, the offender may employ controlling and manipulative communication to give child a perceived choice and thus a sense of responsibility about the abuse (Lawson, 2003; Leberg, 1997; Warner, 2000). Again, such coercive and incentivising techniques function to increase the power held by the offender and ultimately lead to increases in victim compliance (Abel, Becker, & Cunningham-Rathner, 1984).

Characteristics of online sexual groomers

Whilst the Luring Communication Theory of grooming provides a comprehensive and dynamic model of the grooming process over time, it was developed to explain sexual grooming in the physical world rather than *online* sexual grooming. Although many aspects of Olson et al.'s (2007) theory may have initial face validity and generalisability to online sexual grooming, it is also possible that, given the different platform of communication, online sexual grooming may differ qualitatively from physical grooming and thus require the development of a separate and more specialist theory. For example, with online sexual grooming as opposed to offline sexual grooming, unless both interactants have a web-camera or voice recording device, there is a lack of real-time visual reaction feedback. Thus interactants cannot judge whether the desired self-representation they are attempting to exhibit is conveyed and the risk of miscommunication increases (Smith, Cadiz & Burkhalter, 2000). Therefore it is likely that to increase the likelihood of success in meeting their motivational needs, online sexual groomers may employ a number of different strategies tailored to the online environment (Beech, Elliott, Birgden, & Findlater, 2008).

Quayle, Allegro, Hutton, Sheath and Löf (2014) wanted to understand how qualities of the Internet impacted on sexual grooming processes. Twelve offenders were interviewed and themes that emerged included the private space the Internet creates, access to young people and opportunities for rapid skill acquisition with regards to successfully grooming a victim. The Internet allowed for multiple simultaneous contacts to screen potential victims, which facilitates rapidly learning skills to effectively select victims. Offenders reported that the Internet allowed them to manipulate their identity and avoid detection.

Online sexual groomers have been cited to differ qualitatively from low risk contact offenders and Child Pornography (CP) offenders with regards to sexual preoccupation, education level and relationship stability (Seto et al., 2012) and are characterised by fewer

criminogenic factors (Briggs, Simon & Simonsen, 2011). Furthermore, it has been suggested that online sexual groomers are not a homogenous group and are thus likely to have different goals regarding the utility of grooming strategies (Elliott & Beech, 2009; Elliott, Beech, Mandeville-Nordon & Hayes, 2009; Itzin, 2001). For example, Quayle and colleagues (2014) found that in their sample there appeared two distinct offender groups, those who were motivated to meet the victim offline and those who were satisfied by the sexual communication and fantasy aspects of the communication. They also noticed that not all interactions appeared to be driven by sexual motives, and that some interactions appeared to be focused upon the relationships between the interactant and developing rapport. These offenders can be categorised as contact-driven and fantasy-driven offenders respectively.

Empirical research and methodology

Empirical data regarding online sexual grooming is largely obtained from methods of offender and/or victim self-report and data obtained from police records (Berson, 2003). With regards to evidence from police records, Shannon (2008) obtained a relatively large number of police reports regarding offences relating to online sexual grooming ($n= 315$). It was reported that the strategies used by contact-driven and fantasy-driven offenders differed in terms of the strategies deployed. This supports the premise for differences in motivation impacting on the grooming process (as stipulated by: Elliott & Beech, 2009; Elliott, Beech, Mandeville-Nordon & Hayes, 2009; Itzin, 2001). Police records, whilst useful sources of information about the phenomenon of online sexual grooming, may miss some of the interactional nuances and subtleties found in the dialogue of the grooming interaction and such details may not be the focus of the investigation.

With regards to self-report data, it is noted that many studies either focus on the reports of the victim (*e.g.* Whittle et al., 2014) or the offender (*e.g.* Malesky, 2007). Although informative, such methodology has a number of limitations with regards to reliability (Whittle et al., 2014) and the reliance upon subjective memories and interpretations of not only the participant's own behaviour, but those of the other interactant (Whittle et al., 2014). In response to such limitations, a recently published study by Whittle, Hamilton-Giachritsis and Beech (2015) highlighted similarities and differences in offender versus victim reports from interview data obtained from three female victims and the adult male groomers who abused them. The themes derived from the interviews that had the highest level of agreement between groomers and their victims included regular/intense contact, deception, kindness and flattery, erratic temperament and 'nastiness', secrecy and grooming others. However, it was

noted that in the case of regular/intense contact, groomers and victims disagreed as to who was the main initiator and the results were consistent with victim blaming. Yet, given the feeling of ‘love’ some of the victims described towards their abuser it is also possible that they were in fact likely to pursue further contact. The victim-offender pairs also disagreed with regards to who initiated the introduction of sexual content. Offenders were more likely to report mutual progression with regards to the development of a sexual relationship, whereas all victims stated that the sexual narrative was initiated by the offender.

Whittle et al. (2014) demonstrated that whilst there was some level of agreement between offender and victim reports of abuse, there were also a number of discrepancies that would have otherwise been potentially missed if the study only collected data from one interactant population. With self-report data there are report biases that may affect accounts from both victims and offenders with regards to minimisation, perceived responsibility and fear of consequences (Whittle et al., 2015). For example, two offenders in Whittle et al.’s (2014) sample demonstrated minimization, a characteristic that is known to be inherent in sexual offending populations (Marshall, Anderson, & Fernandez, 1999). However there is also a possibility that victims may reported biases with regards to the attribution of the sexualisation of the relationship and may have minimized the extent of their role in the development of a sexual relationship as a protective coping strategy in response to feeling of shame and embarrassment (Whittle et al., 2015). This preposition is supported by evidence that many victims meet offenders with the knowledge the offender is an adult desiring sexual contact (Wolak et al., 2004; Wolak et al., 2008).

A further limitation of self-report data and data obtained from police records is the reliance on:

- the reliability of the participant’s memory of behaviours and events
- the author of the police report’s interpretation of behaviours and events
- the researcher’s interpretation of the interviewee’s interpretation of events

This creates problems of ‘double-hermeneutics’ (Smith, Flowers & Larkin, 2009) which clouds the objectiveness of the data being interpreted.

Gaps in literature

Whilst much research has ignored or failed to explicitly explore the process of online sexual grooming offences as a separate entity to offline grooming (Craven et al., 2006; Kloess et al., 2014), a number of self-report and secondary report studies have been

published. However, there is little research that collects primary interaction transcript data to directly analyse the process of online sexual grooming. Direct evidence of the process of online sexual grooming is becoming more readily available via access to chat logs and stored computer-mediated communication data (Berson, 2003). Direct grooming transcript data provides an unbiased source of data regarding the process of grooming and thus is not affected by research double-hermeneutics.

Systematic reviews and meta-analyses of Internet offending literature published thus far are scarce and have primarily focused upon prevalence, offender characteristics, the consequential impact on the victim and risk/vulnerabilities of youth (Ospina et al., 2010; Babchishin, Hanson & Hermann, 2010). Therefore, in addition to the lack of direct evidence of the dynamic grooming interactions cited within published empirical papers, the process of online sexual grooming, the strategies employed by online sexual groomers and the review of the different online sexual grooming typologies (offender-driven versus fantasy-driven offenders) have been somewhat neglected in the review process to date.

Current systematic review

There is a need to develop a greater understanding of the complex dynamics regarding the online interactions between online sexual groomers and their victim (Whittle et al., 2013a). With little direct evidence and analysis, it is difficult to get an accurate view of the experiential process of online sexual grooming. Furthermore, without detailed and systematic synthesis of the sparse data available, it is difficult to draw conclusions regarding generalisable patterns and trends within the data. This is a particularly pertinent issue given not only the sparse literature pool available regarding the phenomenon, but also the typically small sample size associated with qualitative interaction analysis (Sandelowski, 2007). Therefore, the focused and organised synthesis of available information may be useful in informing the development and validity of theories regarding the process of online sexual grooming.

The current systematic review aims to address gaps within the literature with regards to synthesising the available research that utilises methods of direct analysis of the dynamic interaction between an online groomer and the victim. Not only will this contribute towards drawing meaningful comparisons and verifications of the findings from self-report and secondary report data, but the review will also provide a further source of information to enhance current understanding of the process of grooming. It is hoped that this in turn will

provide a further source of evidence that may inform policies and legislation, that is to date heavily informed by offline grooming data (O'Connell, 2003).

Aims and objectives

The overarching objectives of the current review are to synthesise the sparse pool of research that directly analyses offender-victim interactions and to further explore the process of online sexual grooming and the characteristics of online sexual groomers.

Specific objectives of the systematic review are outlined below:

- To synthesise findings obtained directly from online sexual grooming transcripts
- To synthesise findings and considerations regarding the process and trajectory of grooming
- To explore and synthesise findings regarding offender heterogeneity and offender motivation

Method

Scoping search

A scoping search was designed in December 2014 and carried out in March 2015 to establish the novelty of the current review's aims and whether existing systematic reviews have been published. The scoping search was repeated in March 2017, to ensure that information from the initial review was still up to date. Several databases were searched, including the Cochrane Database of Systematic Reviews, the Campbell Collaboration, PsychInfo, Applied Social Sciences Index and Abstracts (ASSIA) and Excerpta Medica dataBASE (EMBASE). The search terms used in the scoping search were selected to encapsulate the phenomenon of online sexual grooming and the wider phenomena of Internet mediated sexual offences that may encompass online sexual grooming. The search terms utilised are presented below:

online groom* OR internet groom* OR online child* exploit* OR internet child* exploit* OR online sex* offend* OR internet sex* offen*

Many of the reviews found during the scoping search were not systematic in nature and reviewed online sexual offending by largely focussed on CP offences. The scoping

search identified one existing systematic review by Ospina et al. (2010) that aimed to assess and synthesise statistics regarding the frequency of online sexual grooming and reviewed a number risk factors and effects. Additionally, this study aimed to review assessment tools used with victims, explore any existing interventions and assess resources available with regards to Internet safety in Canada. Notably the paper did not include studies that assessed the content of computer mediated offender-victim interactions via direct investigation of transcripts. Furthermore, the paper was largely victim-orientated with regards to impact of grooming and thus did not address or investigate the strategies employed by online sexual groomers during the process of online sexual grooming. The current review was therefore considered sufficiently dissimilar and novel.

In addition, existing narrative reviews were searched to identify the likelihood of being able to retrieve appropriate papers to address the current research question (Cherry & Dickson, 2014). This search was exercised with the view of assessing the feasibility of the current research question. When scoping literature reviews, it was noted that many papers comment on the prevalence of online sexual grooming, offender and victim typologies, different types of online sexual offences, legislation, and models of sexual offending/problematic Internet use (*e.g.* Beech et al., 2008; Kloess et al., 2014; Whittle et al., 2013a; Whittle et al., 2013b). With regards to the process and content of online sexual grooming, whilst the reviews made references to the process and the strategies employed by online sexual groomers, they are not reviewed systematically. Also, in some cases the reviews did not adequately distinguish between online sexual groomers and offline groomers in the physical world. Babchishin, Hanson & Hermann (2010) carried out a meta-analysis of literature assessing the characteristics of online sex offenders. The meta-analysis compared similarities and differences of demographics and psychological variables of online and offline sexual offenders. It should be noted that online sexual offending in this context was a broad concept, under which online sexual grooming represented one out of a number of Internet-mediated sexual offences. It was noted that in Babchisin's most recent meta-analysis (Babchisin, Hanson & VanZuylen, 2014), they only included CP offender samples.

From reviewing the references utilised in the literature reviews, it appeared that primary empirical research regarding the analysis of offender-victim interaction data is available but sparse. It was therefore anticipated that additional reference list searches and inclusion of grey literature would be required to obtain a sufficient and representative number of papers in the current review. Furthermore, it was anticipated that given the scarce data available, the quality of the papers included in the current review would vary.

Overview of search strategy

The systematic search was conducted in eight stages:

1. Development of search terms
2. Systematic search of four electronic databases: PsychInfo (1967-present), EMBASE (1974-present), (ASSIA, 1987-present) and the National Criminal Justice Reference Service (NCJRS, 1975-present)
3. The removal of duplication and screening of the titles and abstracts for relevance
4. Application of a screening and selection tool via inclusion and exclusion criteria
5. Hand search of reference lists for each paper that met the inclusion and exclusion criteria
6. Personal correspondence with experts in the research field of online sexual grooming
7. Grey literature search
8. Quality appraisal

Search terms

The term ‘online sexual grooming’ can be described in many different ways from ‘Internet sexual offenders’ (*e.g.* Elliott et al., 2009) to ‘online predators’ (*e.g.* Marcum, 2007). Therefore, during the initial scoping search a list of relevant terminology encapsulating the phenomena was devised from existing literature review and their associated reference lists. A similar strategy was employed to search for terms relating to Internet-mediated communicative technology.

The search of the database with a finalised search term list was conducted on the 16th of April 2015. This followed an extensive period of adapting and modifying the search terms until a satisfactory balance of sensitivity and specificity was considered to be reached (Dundar & Fleeman, 2014). This was assessed using a trial-error method. The search was repeated on the 21st March 2017 to ensure that the systematic literature review was up to date with any additional research that was published after the 16th April 2015. The final search syntax is presented in Appendix I and the basic terms from which the final search syntax were derived is presented below:

groom* OR p?edophil* OR (sex* adj3 (groom* OR exploit* OR exploited OR exploitation* OR offen* OR predator* OR abus*))

AND

internet *OR* online *OR* web* *OR* online communicati* *OR* internet communicati* *OR* relay chat* *OR* IRC *OR* computer mediated communication* *OR* CMC *OR* chat room* *OR* chatroom* *OR* chat-room* *OR* chat* *OR* forum* *OR* email* *OR* instant messag* *OR* social media

AND

(explor* *OR* observ* *OR* investigat* *OR* analys*) *adj3* (transcri* *OR* convers* *OR* communicati* *OR* interact* *OR* narrative* *OR* content* *OR* language* *OR* linguistic* *OR* discourse* theme* *OR* thema* *OR* pattern* *OR* strateg* *OR* styl* *OR* skill* *OR* approach* *OR* practic* *OR* process* *OR* tactic* *OR* technique*)

Systematic search of databases

PsychInfo and EMBASE databases were accessed via the OvidSP platform. These databases were searched using a combination of free text word searches within the title and abstract of the papers, as well as use of adjacency searching and mapping search words to maximise the efficiency of the search (Dundar & Fleeman, 2014). The ASSIA and NCJRS databases were accessed via the Proquest platform and thus had different search options as compared to the OvidSP platform. Search constructs such as *adj3* (OvidSP) and *NEAR/3* (Proquest) were used to bring general terms such as “process” within three words of each other to further specify the search and focus the terms in line with the phenomenon of interest i.e. online sexual grooming. It should be noted that, unlike OvidSP, Proquest does not have the function to map search words to subject headings. All databases were searched using the Boolean operators AND and OR, however the NOT operator was not utilised due the risks of inadvertently excluding potentially relevant studies (Lefebvre, Manheimer & Glanville, 2008).

Screening of studies

233 papers were retrieved from the database search using the search terms outlined above. The results for each search were exported into RefWorks for storage. Using the RefWorks programme, duplications of papers within the results were removed ($n=27$). The titles and abstracts of the remaining papers ($n=206$) were screened for relevance. ForAny

papers not concerned with CSA were removed at this stage. Furthermore, papers regarding sexual abuse not specific to online sexual offences and papers concerning adolescent use of the Internet where papers did not directly assess online sexual abuse (beyond commenting upon the generic risks of adolescent Internet use) were removed. Of the remaining papers ($n=60$), full copies of the papers were retrieved via the elibrary at the University of Birmingham, Google search engine and time-limited purchases from online journals.

Screening and selection tool: inclusion and exclusion criteria

From the scoping search, it was identified that much of the data likely to be selected for the current review would be qualitative or mixed-method in design and would not be likely to employ a comparative design or assess the effectiveness of an intervention. The development of the inclusion and exclusion criteria was thus informed by a Sample, Phenomena of Interest, Design, Evaluation and Research type (SPIDER) framework (Cooke, Smith & Boothe, 2012). The SPIDER framework was developed from the PICO framework (Davies, 2011). However, it is appropriate for qualitative and mixed method research designs (Cooke et al., 2012) and was thus considered to increase the sensitivity and specificity of the search. A comprehensive copy of the screening and selection tool is presented in Appendix II, whilst a summary of the SPIDER framework and additional inclusion and exclusion criteria that in combination formed the screening and selection tool is presented below:

Sample: Adult male online sexual groomers (18 years+). Female groomers were omitted given the finding that female sex offenders may be qualitatively different sex offender population (Sandler & Freeman, 2007; Vandiver & Kercher, 2004).

Phenomenon of Interest: Online interactions via Internet relay chat programmes between offenders and either children below the age of 16 years old or adult decoys posing as a child under the age of 16 years old. Interactions consisted of the adult grooming the child for online or offline sexual communication/contact.

Design: Qualitative, quantitative and mixed methods.

Evaluation: Analysis of online interaction transcripts themes, patterns, strategies and characteristics.

Research type: Cross-sectional and observational were the most likely research design types, however the aim of the review is primarily to synthesise information regarding the phenomenon of interest, therefore all empirical research was included.

Additional inclusion criteria:

- English language only
- Full text available

Additional Exclusion criteria:

- Studies exclusively addressing the frequency of online sexual grooming
- Studies exclusively addressing offline grooming
- Studies exclusively based on self-report data from victims
- Studies exclusively grounded in theories of sexual offending without primary empirical evidence
- Book chapters and unpublished dissertations or theses

Following the application of the inclusion and exclusion criteria, 55 papers were removed from the sample of papers ($n=5$). Appendix III contains a record of all excluded studies following the application of the selection and screening tool.

Reference list search

The reference lists of the remaining papers ($n=5$) were hand-searched for titles that appeared relevant to the research question. From this search an additional 10 papers were identified that met the screening and selection inclusion/exclusion tool ($n=15$). A further free hand-search paper was conducted following this process. Three papers that met the screening and selection process were subsequently considered appropriate for inclusion in the review ($n=18$). Although these papers were not found via the systematic process, in the author's considered opinion it was appropriate to include them in order to give a holistic and accurate view of the literature and data currently available with regards to the research question.

Personal communication

Two research experts in the field were contacted to seek their knowledge of important or relevant research papers regarding the process of online sexual grooming utilising direct interaction transcripts. One expert responded (Ethyl Quayle), however she was unable to provide suitable references for the current review.

Grey literature

Grey literature often constitutes a small, but significant, proportion of the study's references in systematic review (Mallett, Hopewell & Clarke, 2002). PsycEXTRA is a grey literature database twinned with PsychINFO, and therefore the same search terms, screening and selection tools were used. No additional papers were retrieved via this process. Nevertheless, two papers that were retrieved from the reference hand-search (O'Connell, 2003; Webster, Davidson, Bifulco, Gottschalk, Caretti, et al., 2012) would be deemed to be grey literature given that, although they are publicly accessible, they have not been formally published in an academic journal (Dundar & Fleeman, 2014).

Quality appraisal

To ensure that all relevant studies that use interaction transcripts to collect data were included in the current review, all research designs were included in the inclusion criteria. The current systematic review can therefore be described as a mixed studies review (Grant & Booth, 2009; Pluye, 2013).

Critical Appraisal Skills Program (CASP, 2015) is a popular appraisal tool and has strengths in providing a comprehensive assessment for qualitative data. However, it lacks specific tools of assessment for both cross-sectional and mixed methods designs. Although permissible in practice, at the author's discretion, it was considered that utilising a number of different tools together for different study designs would increase the likelihood of discrepancies in the content and thus reduces meaningful comparability of the overall percentages derived from each tool. Therefore, the Mixed Methods Appraisal Tool (MMAT) was selected (Appendix IV). The MMAT was designed for use within systematic review via the examination of 17 systematic mixed study reviews and aims to account for a previous lack of consensus regarding specific criteria for assessing mixed-method studies (Pluye, Robert, Cargo, Bartlett, O'Cathain et al., 2011; Pluye, 2013). The MMAT permits the concurrent assessment of quality for three methodological domains: qualitative, quantitative and mixed methods designs (Crowe & Sheppard, 2011). The tool therefore provides a unique and efficient way of quality assessing a number of studies in a comparable fashion.

With regards to the psychometric properties of the MMAT, a pilot study was carried out to assess the inter-rater reliability of the tool. Intra-class correlations were reported to be approximately 0.8 suggesting good reliability (Pace, Pluye, Bartlett, Macauley, Salsberg et al., 2011). Whilst the MMAT is considered an efficient tool (Souto, Khanassov, Hong, Bush, Vedel et al., 2015), it should be noted that items 1.3 and 1.4 (*1.3 'Is appropriate consideration given to how findings relate to the context, e.g., the setting, in which the data*

were collected?'; 1.4 'Is appropriate consideration given to how findings relate to researchers' influence, e.g., through their interactions with participants?') in the qualitative research domains should be read carefully and interpreted consistently (Souto et al., 2015). It is suggested that understanding and interpretation of '*appropriate consideration*' should be considered prior to commencing the quality appraisal (Pluye, 2013). Given the lack of standardised threshold (Pace et al., 2011; Souto et al., 2015), in the current review '*appropriate consideration*' included the presence of any explicit reference to information outlined in the items i.e. whether data was collected from online sexual grooming interaction transcripts and whether the authors considered researcher bias. In 2011 revisions were made to the tool with regards to validity following feedback from four workshops and the development of a comprehensive framework for assessing quality of mixed-methods research (O'Cathain, 2010; Pluye, 2013).

A strength of the MMAT is the inclusion of a tutorial that assists in the correct use of the tool (*available at*: <http://mixedmethodsappraisaltoolpublic.pbworks.com>). Qualitative studies are assessed using section 1 of the tool, whilst quantitative studies utilise sections 2, 3 and 4 (controlled, non-randomized, and descriptive) and mixed methods studies utilise section 5. The quality appraisal scoring system follows a dichotomous scoring system:

Yes =1 (criteria met)

No = 0 (criteria not met) (& Unclear = 0)

Visual comparison scores can be calculated as percentages and visually represented using asterisks.

25 % (*): when qualitative=1 *or* quantitative=1 *or* mixed method= 0

50% (**): when qualitative =2 *or* quantitative =2 *or* mixed method =1

75% (***): when qualitative =3 *or* quantitative =3 *or* mixed method =2

100% (****): when qualitative=4 *and* quantitative =4 *and* mixed method =3

For mixed methods studies, the overall score is determined by, and cannot exceed, the quality of the weakest component. When it is unclear whether a criterion has been met, it is considered best practice to contact the authors of the corresponding publication and it is often common practice when appraising qualitative and mixed method research designs (Pluye, 2013). However, given time constraints, this was not feasible during the current review.

For the current systematic review a cut off of 75% was utilised to ensure that all papers included in the review were of high methodological quality. An inter-reliability check was performed on the quality appraisal process with a second rater completing the quality appraisal in addition to the author. The proportion of agreement was calculated as a percentage of overlap. This was calculated to be 88.8%. This met the 80% threshold for minimum acceptable level of inter-rater agreement as stipulated by McHugh (2012), with a kappa value of .806 ($k=.806$, $p<.001$). The kappa value also suggested good strength of agreement. From the quality appraisal, three papers were excluded (Grosskopf, 2010; McLaughlin, 2004; and Webster et al., 2012). Although these papers included direct evidence from online sexual grooming transcripts, there was a lack of information about the qualitative analysis methods used to explore the data and draw theoretical conclusions. Also information regarding consideration of researcher influence and bias was unclear in the write-up of these studies. It is of note that Webster et al.'s (2012) European Online Grooming Project (EOGP) is not published in an academic journal. As such, it is considered grey literature and therefore a lack of methodological detail may be expected. The information presented on online sexual grooming transcripts formed one chapter of a multi-chapter project.

Outcomes of search strategy

Following the completion of the search strategy, fourteen papers remained. The search strategy is presented in a flow diagram, illustrating the papers received and removed at each stage of the search strategy.

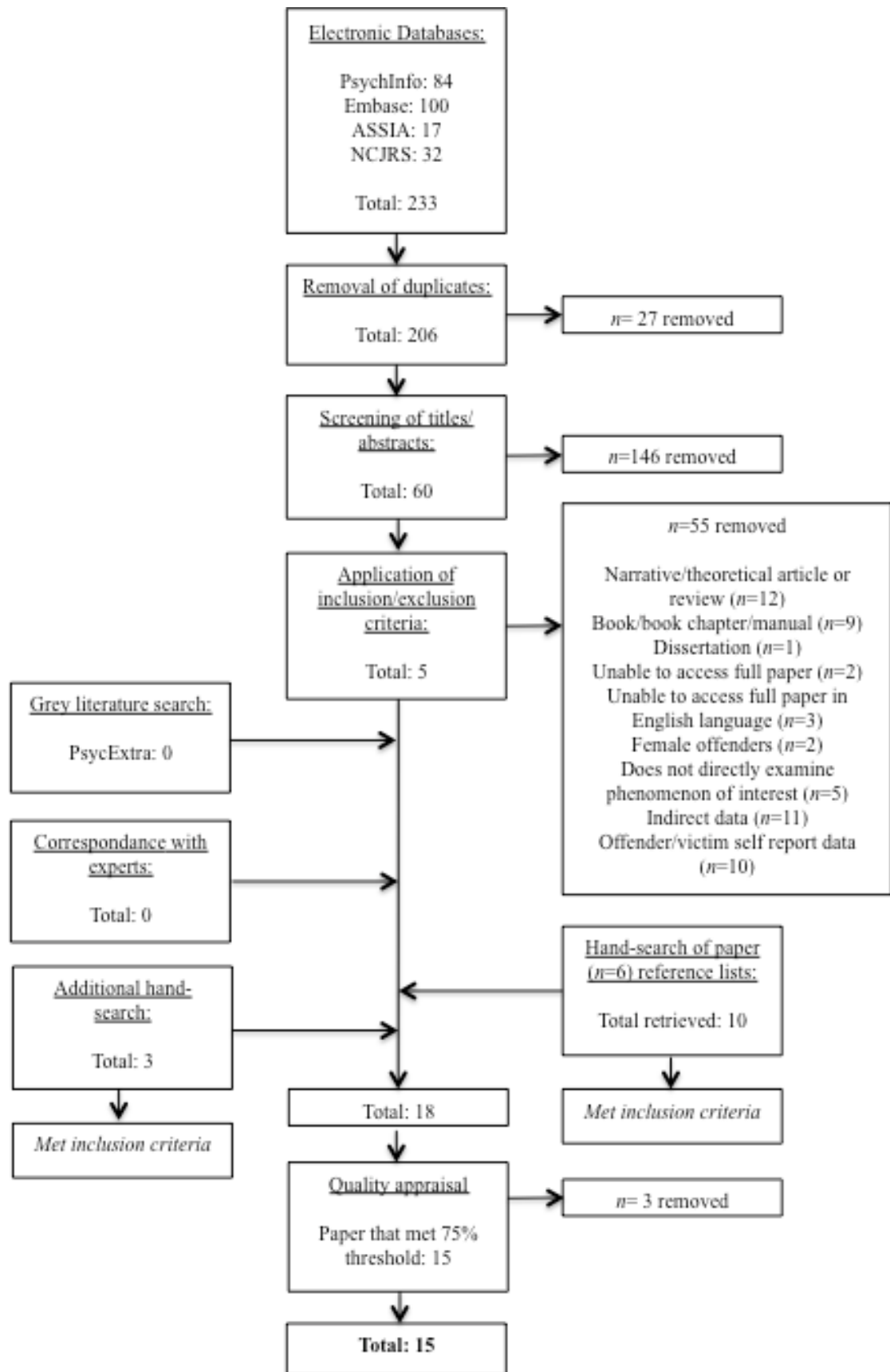


Figure 1: Flowchart demonstrating the study selection process for the systematic review
Data extraction

A bespoke data extraction form (Appendix V) was developed to aid the consistent extraction of relevant data for each study selected for synthesis. The form uses a qualitative evidence and grounded theoretical standpoint (Cherry, Perkins, Dickson & Boland, 2014) whereby the findings from the papers will be synthesised and analysed within the context of the phenomenon of interest. The same extraction form was used for different study designs for consistency and comparability between the studies included. The extraction form was designed to highlight both general characteristics of the study as well as information about results and outcomes specific to the aims of the current systematic review. Information regarding the outcome of the MMAT quality appraisal is also included for comparison of methodological quality.

The extraction form consisted of the following key variables:

- General information- authors, year, title, journal/source, country of study
- Study characteristics- design, aims/objectives, concept measured
- Method- sample size, recruitment method, characteristics of sample, method of data collection
- Results- analysis, findings, conclusions
- Quality- reliability and validity, limitations, quality assessment score

Results

Overview

The fifteen papers retrieved for data synthesis are summarised in Table 3. Given the mixed methodology of the reviewed papers, the results are presented via a narrative method of data synthesis (Fleeman & Dundar, 2015) to highlight the key themes identified from the data extraction procedure. Critical review of the papers and consideration of methodological and interpretative limitations can be found in the overview of the study characteristics and design and is also interspersed throughout the results section.

Table 3: Characteristics and summary of the fifteen papers included in the systematic review

Author, year & country	Design	Study Aim	Sample	Method of data collection	Analysis	Findings	Reliability & validity	Quality
Black, Wallis, Woodworth & Hancock (2015)	Mixed-method Cross-sectional Observational	To explore the similarities and differences in the grooming process via the internet compared to existing literature. To explore themes and word category frequencies suggestive of strategies employed by online sexual groomers.	44 interaction transcripts between online sexual groomers and a decoy posing as 12-15 year old minors (38 female, 6 male) Groomers were convicted males (25-54 years).	Transcripts of interactions via the Perverted Justice website (US). Transcripts randomly selected- no further detail given.	Linguistic Inquiry Word Count Content analysis: Transcripts were coded for the presence and frequency of O'Connell's (2003) model.	<i>Content analysis results:</i> All offenders used at least one identified strategy. Significant results for strategies employed in the first stage obtained for flattery, risk assessment of family factors, talking about the dangers of communicating over the internet and mention of their behaviour being inappropriate. Introduction of sexual themes was found to be significant. Accessibility assessment was found in 52% of the transcripts. <i>LIWC results:</i> Flattery and friendship forming were not more common in the first stage of grooming. Relationship terms were not more common in the second stage of grooming compared to other stages. Risk assessment terms were more common in stage 1 and stage 2 than stage 3. Exclusivity terms were more frequently used in stage 3 and stage 4 compared to stage 1. Stage 5 did not have more meeting terms. Stage 3 had more sexual terms	Content analysis carried out by two researchers (first author and undergraduate student). Inter-rater reliability correlates ranged from .34-.96 for frequency of use for each category. Kappa values ranged from .72-.95 for the presence of strategies.	**** 100%

than stage 1.								
Bogdanova, Rosso & Solorio (2012)	Quantitative	To explore the use of fixed discourse to help detect online sexual grooming.	Offender-decoy transcripts ($n=?$).	Transcripts of interactions via the Perverted Justice website (US).	Used Java WordNet Similarity library to compare sex-related lexical chains across the different samples.	Lengths of sex-related lexical chains varied depending on the sample the transcript belonged to.	Comments upon factor impacting on validity including the absence of victims/partner interaction, the use of pseudo-victims in the data, only looking as sex as a lexicon category.	****
United States	Cross-sectional							100%
	Observational	To compare sex-related lexical chains between different samples (grooming, cyber-sexual and non-sexual online transcripts).	Cyber-sex log transcripts ($n=68$).	Cyber-sex log from online archive		Grooming sample had longer sex-related lexical chains than the non-sexualised sample. Cyber-sexual sample had the longest sex-related lexical chains out of the three samples.	Discusses the impact of spelling mistakes <i>e.g.</i> incorrect spelling of sex on the WordNet programme reliably detecting lexical chains.	
			Non-sexualised text ($n=65$).	Non-sexualised text from NPS corpus.				
DeHart, Dwyer, Seto, Moran, Letourneau & Schwarz-Watts (2017)	Mixed-method	To identify key elements of online solicitation cases.	200 files of chat, text and social network chats from male offenders interacting with under cover police officers.	Case files from 7 different US task forces obtained. 251 files included chat, test and social network chat file. The first 80% of PDF files received were used $n= 200$.	Qualitative coding via an iterative process.	<i>Four classifications:</i> Cyber-sex only Cyber-sex schedulers Schedulers Buyers (includes 3 rd party)	Coding carried out by two researchers with frequent debriefing on consensus.	***
United States	Cross-sectional							75%
	Observational	To differentiate and describe different online solicitor typologies.			ANOVA/ Chi squared exploration of differences between offender classification.	No difference in age of offenders across groups. Association found between offender type and exposure behaviours. Exposure most common amongst cyber-sex only offenders.	Argue that a qualitative method of reliability has strengths over quantitative methods and does	

						Association found between offender types and seeking sexual photos of victim. Most common in the cyber-sex classifications.	not compromise validity.	
						Similar pattern for incest themes.	Discusses validity of undercover officers.	
						Association found for length of time interacting with schedulers and buyers interacting for a shorter amount of time than cyber-sex offenders.	Sample not nationally representative.	
						Association with cancelling meet up and offender classifications with cyber-sex schedulers over-representing the sample compared to schedulers and buyers.		
Drouin, Boyd, Hancock & James (2017)	Mixed methods Cross-sectional Observational	To use the LIWC language analysis program to analyze chat transcripts of convicted online sexual groomers. Assess sexual language, word usage and clout across samples of offenders approaching female victims	1180 offender-decoy interactions. 590 male offenders from 43 US states. Average age 33.99 years. Decoys posed as 12-15 years old minors. Average age 13.29 years. 91% decoys posed as females, 9% as males.	Transcripts of interactions via the Perverted Justice website (US). Web scraping process pulled all 590 files from the archive and separated by username 1180 different chat logs.	Linguistic Inquiry Word Count Dictionaries and function used: - word count - clout - sexual t-tests	Significant differences found for male victim and female victim interactions: Offenders interacting with female were significantly younger, Both female victim offenders and decoys used more words and had higher clout. Female decoys used significantly less sexual words Offenders used significantly more sexual words than both male decoys and female decoys. Offenders used significantly more words than the decoy in the female victim group but not male decoy group.	Reliability of the sexual and clout measures calculated using split-half reliability across the first and second halves of the texts Very strong correlations reported (sexual $r = .67$; clout $r = .72$). Discusses validity of decoys and limitations of LIWC.	**** 100%

		compared to male victims.				Offenders used significantly more clout than decoys in the female and male victim groups.		
						Significant positive correlation found between offender word count and number of months of jail time sentenced ($r = .22, p < .001$) but no significant correlations found for sexual words and clout with amount of jail time.		
Egan, Hoskinson & Shewan (2011)	Qualitative	To explore the language used by online sexual groomers during their online interactions with their victims.	20 offender-decoy interaction transcripts.	Transcripts of interactions via the Perverted Justice website (US).	Relational analysis using NVivo.	Eight recurrent themes: 1. Content of discourse-implicit and explicit 2. Online solicitation-initiation and transference 3. Fixated discourse- focus on offenders choice of discussion and dismissal of victim 4. Use of colloquialisms- child-like responses from the offender 5. Conscience- empathic and unempathic 6. Acknowledge illegal/immoral behaviour 7. Risk minimization 8. Preparing to meet offline	Generalizability of offender-decoy to offender-child interactions	***
United Kingdom	Cross-sectional		Adult male online sexual groomers.	Transcripts randomly selected- no further detail given.	Coded and categorized emergent and recurrent themes.		Paper highlights the need for a larger sample of data in order to efficiently address reliability, validity and generalizability of the findings.	75%
	Observational		(No further demographic information available).		Explored between category relationships.			
			Decoy victims posing as females under the age of 16.					

Gupta, Kumaraguru & Sureka (2012) India	Mixed-methods	To assess whether the sexual stage of O'Connell's model of online sexual grooming is the most central process in online sexual grooming transcripts.	75 offender-decoy interaction transcripts divided into the 6 stages of online sexual grooming (O'Connell). <i>n</i> = 450 transcript segments	Transcripts of interactions via the Perverted Justice website (US).	Process of data cleansing.	The sexual stage only covered 24% of the lines in the transcripts. The friendship forming stage was more dominant accounting for 40% of the lines.	Discusses the validity of using decoys and whether they accurately represent a naturally occurring grooming interaction.	**** 100%
	Cross-sectional				Transcripts manually annotated by a professional psychologist to identify O'Connell's stages of online sexual grooming.			
	Observational	To assess the presence of the groomer approaching the victim to meet in the concluding stage. To assess whether linguistic predictors can distinguish different stages.	Adult male online sexual groomers. Decoys posing as children under the age of 16. (No further demographic information available).		Linguistic Inquiry Word Count on the manually segmented transcripts. Logistic regression.	The concluding stage (indicators of conclusion) did not appear to occur at the end of interaction in all cases and was evaluated to be a non-sequential recurrent stage. A logistic regression revealed that social words were more indicative of the relationship forming stage. Sexual words were predictive of the sexual stage. Family and negative emotion words were associated with the risk assessment stage. Positive emotions were indicative of the exclusivity stage and motion and time words were association with the concluding stage.	No comment on the reliability of the manual coding.	
Kloess, Seymour-Smith, Hamilton-Giachritsis, Long, Shipley & Beech	Qualitative	To analyse the modus operandi of online sexual groomers and strategies/discursive tactics used by such offenders.	5 male convicted online sexual groomers aged 27- 52 years old.	29 transcripts of online interactions from the 5 cases.	Thematic analysis.	<i>Four predominant themes:</i> - Directness in initiating online sexual activity - Pursuing sexual information - The next step (towards physical meeting) - Fantasy rehearsal	Inter-rater reliability checked by second rater checking 10% of transcripts through 55 random exerts.	**** 100%
	Cross-sectional				Framework provided by Braun and Clarke (2006).			
	Observational		3 female and 2 male victims	The 5 cases were selected from three	Inductive,	Manipulative strategies identified	85% agreement found.	

(2015)								
United Kingdom		To identify the offender motivation and underlying function of the interaction.	aged 11-15 years old.	police force's intelligence systems. Only analysis of offender contributions presented to protect identity of victims.	content-driven approach. Iterative process.	as: supplementing sexual stimulation (e.g. use of digital sexually explicit imagery and language) and security (minimizing detection). Two interactions appeared to resemble the development of a relationship. Used discursive strategies such as flattery, compliments, advice and jokes or games to introduce sexual themes. Maintained through more directed language and negative affect imitation. Three offenders used a more direct communication approach. More aggressive style. In only two cases was the offender motivated to meet the victim in the physical world. Much of the content of transcripts suggested imaginary element of the conversation were highly arousing for offenders	Remaining 15% were discussed and agreements reached. Comments on small sample size and lack of generalizability.	
Marcum (2007)	Qualitative Case studies	To increase awareness and understanding of the strategies employed by online offenders to perpetrate abuse and successfully	Three offender-decoy interactions Case 1 Offender-male, aged 24 years old Decoy pretence-	Transcripts of interactions via the Perverted Justice website (US). Three most recent cases available (transcripts on the website	Latent coding of sexually explicit advances and cue suggestive of manipulation techniques and sexual satisfaction from the offender towards the	<i>Case 1:</i> Offender offered to show his genitalia via web camera shortly after initial introductions. Quickly asked the decoy to meet to engage in sexual activity. Offender showed care, trust and concern for decoy/victim when decoy indicated uncertainty. Offender utilized manipulation to make decoy/victim believe they	Subjectivity of the method of coding- no inter-rater reliability.	**** 100%

		manipulate victims.	female, aged 13 years old.	present in chronological order from most recent).	decoy.	have a choice- beneficial in maintaining secrecy if victim believes it was their choice.		
		To understand the speed and qualitative nature of online solicitation of minors.	Case 2 Offender- male, aged 50 years old Decoy pretence- female, aged 12 years old. Case 3 Offender- male, aged 51 years old Decoy pretence- female, aged 13 years old.			<p><i>Case 2:</i> Differences in offender motivation to meet with victims, case 2 for example was not motivated to meet with the victim and pursue offline sexual abuse Quick escalation of content to sexual themes. Offender exposed self to decoy/victim Offender spoke about previous sexual conduct with minors to demonstrate other minors enjoying and accepting sexual activity with him. In response to victim/decoy uncertainty, offender used reassurance techniques Offender did not appear to be interested in rapport building, more aggressive and less patient in his approach.</p> <p><i>Case 3:</i> Offender pretended to be younger and gave a false name. Conversed over a 3 month period Included sexual themes around loss of virginity. Disclosed concerns he was a paedophile.</p>		
McGhee, Bayzick, Kontosathis,	Quantitative Cross-	To integrate communication theories and	50 offender-decoy interactions.	Transcripts of interactions via the Perverted	Classifications: 200–Exchange of personal	Accuracy of ChatCoder 2 ranged from 51.95-83.9% where as the 2	2 trained undergraduate analysts analysed	**** 100%

Edwards, McBride & Jakubowski (2011)	sectional Observational	computer science algorithms to create a detection program for online sexual grooming. To compare automatic versus human coding.		Justice website (US). Randomly selected. Due to file formatting issues, only 33 transcripts were used to generate truth sets for the machine learning algorithms.	information, 600–Grooming, 900–Approach, 000–Lines containing none of the other three classes. Classifiers: -Human manual coding (2 undergraduates, and a coding expert), -Decision trees, -Instance-based learning algorithms, -ChatCoder 2	analysts ranged from 80.4–83.43%. ChatCoder 2 performed best in the grooming classification. Neither decision trees nor instance-based learning algorithms were able to significantly improve upon the 68% accuracy of ChatCoder 2.	the data and both manually coded 3 scripts to ensure reliability. 10-fold cross validations of classifiers.	
O’Connell (2003)	Qualitative Cross-sectional Observational	To develop a typology of child cybersexexploitation To explore the nature and process of online exploitation of children and online sexual grooming.	Sample size- N/A. Male online interactants with a sexual interest in children. Author posed as a decoy interactant. (No further information available).	Web based and IRC based chat rooms where the author posed as an 8, 10 or 12 year old child (typically female) on chat rooms with a standardised fictitious background story.	Sociolinguistic analytical techniques.	<i>Identified 6 stages in the process of online sexual grooming:</i> 1. Friendship forming stage 2. Relationship forming stage 3. Risk assessment stage 4. Exclusivity stage 5. Sexual stage 6. Methods of concluding the encounter.	No comment- on going research Does not account for author’s role and potential biases.	*** 75%

Pendar (2007) United States	Quantitative Cross-sectional Observational Pilot study	To pilot the effectiveness of developing an automated text categorization programme to detect online sexual grooming. To increase awareness of online sexual grooming and possible detection solutions.	280 chat log transcripts. Divided into 140 offender interaction transcripts and 140 pseudo-victim transcripts.	701 transcripts of interactions via the Perverted Justice website (US) divided into offender interaction files and pseudo-victim interaction files (1402 total). 1122 files used as a training set, 280 as a test set.	Test classifiers: -k-NN (simple and distance), -Support Vector Machines-SVM.	The distance weighted k-NN classifier successfully distinguished between the pseudo-victim and online sexual groomers.	Ensured the sample included a spread of above and below median rating (ratings of 'sliminess' reported on the Perverted Justice Website).	**** 100%
Rahman Miah, Yearwood & Kulkarni (2011) Australia	Quantitative Cross-sectional Observational	To investigate the effectiveness of text classifiers to identify child exploitation in online chat transcripts.	CE sample (n=200): child exploitation SF sample (n=85): sexual fantasy conversation between adults. GN sample (n=107): General chats.	CE sample: Transcripts of interactions via the Perverted Justice website (US). SF & GN: anonymous chat log websites.	Two sets of experiments one with term-based features and one with Linguistic Inquiry Word Count (LIWC) psychometric and categorical information. Put through different experiments using <i>classifiers</i> : - Classification-via-Regression, -J-48-Decision-Tree,	Psychometric and categorical information for LIWC can be used by classifiers to predict suspected child exploitation in chats. LIWC features significantly improved the performance of Naïve-Bayes and some of the case processed by Classification-via-Regression. It did not improve the J-48-Decision-Tree.	Training, testing and 10-fold cross validations of classifiers.	**** 100%

-Naïve-Bayes.								
van Gijn-Grosvenor & Lamb (2016) United Kingdom	Mixed-method Cross-sectional Observational	To qualitatively and quantitatively describe the behaviour of those who groom male and those who groom female children online.	Sample of 101 convicted online sexual groomers aged 19-69 from 24 US states. Offender-decoy interactions. 52 decoys masquerading as female minors (12-15 years), 49 decoys masquerading as male minors (12-15 years).	Transcripts of interactions via the Perverted Justice website (US). 550 transcripts in database. All male victim decoys were selected. Female victim decoy transcripts randomly selected.	Qualitative coding using 4 thematic categories: offence characteristics, offender's rapport building, conversations about sexual matters, ways to conceal contact. Statistical tests of difference including Chi-squared, Mann Whitney-U.	<i>Offence characteristics:</i> Offenders grooming girls were significantly younger than offenders who groomed males. Male victim groomers deducted more from their true age. Interactions were significantly longer for female victim groomers. Different victim groups were just as likely to send pornographic material, however the female victim group expose themselves via webcam more. <i>Offender's rapport building:</i> Offenders approach boys appeared more focused on sexual gratification. <i>Conversations about sexual matters:</i> More sexual topics were addressed with female victims. <i>Ways to conceal contact:</i> Girls were asked more often where their parents were, where the computer was located and instructed not to tell others about the contact.	Second researcher coded approximately 10% transcripts. 94% inter-rater agreement. Discusses validity of decoys.	*** 75%
Williams, Elliott & Beech (2013)	Qualitative Cross-sectional Observational	To establish grooming strategies employed within the first initial hour of	Eight offender-decoy interactions. Offenders-	Transcripts of interactions via the Perverted Justice website (US).	Inductive thematic analysis. Framework provided by	<i>Super ordinate themes identified:</i> rapport building, sexual content and assessment. <i>Rapport building:</i> - Coordination (deception	Inter-rater reliability- a second researcher analysed 10% of the transcripts with a third	**** 100%

United Kingdom		contact. To understand how the process of grooming is initiated and early rapport/connection is made.	male, aged 24-38 years old Decoy pretence-female, aged 12-14 years old.	Examined first hour of interaction.	Braun and Clarke (2006).	regarding demographics to minimize age gap, and/or elevation of child to level of adult) - Mutuality (interests and understanding, peer mutuality and/or faux guardianship, empathy, support, guidance) - Positivity (friendliness, trustworthiness, harmlessness, good intentions, polite, responsible, sensitive, caring, playful, sensible), can interact with negativity (passive-aggressiveness, impatience, focusing victims attention) <i>Sexual content:</i> - Introduction (as a game, advice, ‘mutual fantasy’, force) - Maintenance/escalation (repetition, force, boundary pushing) <i>Assessment:</i> - Of child (trust/vulnerability, receptiveness) - Of environment (obstacles, opportunity, information) Sequencing- assessment interlaced throughout.	researcher arbitrating disagreements. Identified potential gender biases within sample. Decoy biases-acting as a ‘fantasy’/perfect victim.	
Winters, Kaylor & Jeglic (2017)	Mixed methods Cross-sectional	To investigate online groomer and victim characteristics as well as the	100 offender-decoy interactions. Offenders-male aged 19-	Transcripts of interactions via the Perverted Justice website (US).	Qualitative coding using inductive and deductive techniques (based on	<i>Offence characteristics:</i> All offenders were male with a mean age of 35.33. Around a third lied about their age with all but 1 stating they were younger than their actual age. None stated that	Pilot of coding protocol with two primary researchers obtained 82.1% agreement,	*** 75%
United								

States	Observational	dynamics of the grooming narrative.	64. Decoys posed as 12-15 years old minors, 95 % posed as females.	16.9% of available (593) transcripts were randomly selected.	literature). Three categories: offender characteristics, victim characteristic, and conversation dynamics. Descriptive statistics and frequencies.	they were under the age of 18 years. Very few had usernames that were sexual in content. <i>Victim characteristics:</i> 95% decoy posed as female, 5% male. Mean age 13.21 years. No sexual content in usernames. 88% lived in same state as offender. <i>Conversation dynamics:</i> Average days of contact were 9.52 (1-74). Mean number of days between first and last contact was 24.77 (1-335). Total number of conversations on average was 10.97. 89% introduced sexual content in first conversation, 98% by second conversation. 85% sent or had a profile picture the victim could view. 83% contact victim through another medium. 96% arranged a meeting. $\frac{3}{4}$ that did not arrange a meeting still engaged in conversations about meeting.	leading to adaptations and training of Master students with report 100% inter-rater reliability for sexual content and usernames. Discusses validity of decoys.
--------	---------------	-------------------------------------	--	--	---	---	--

Table 4. Concepts investigated in the systematic review papers

Paper	Grooming strategies and themes	Sequence of grooming	Distinguishing grooming transcripts	Offender typology
Black et al., (2015)	X	X		
Bogdanova et al.,			X	
DeHart et al., (2017)	X			X
Drouin et al., (2017)				X
Egan et al., (2011)	X			
Gupta et al., (2012)		X		
Kloess et al., (2015)	X			X
Marcum (2007)	X			X
McGhee et al., (2011)				
O'Connell (2003)	X	X		
Pendar (2007)			X	
Rahman Miah et al., (2011)			X	
van Gijn-Grosvenor & Lamb (2016)	X			X
Williams et al., (2013)	X	X		
Winters et al., (2017)	X	X		

Study characteristics and quality

The papers were published over a 12-year period ranging from 2003 to 2017. Six of the studies were conducted in the United Kingdom (UK) (four of which used data from United States archive Perverted Justice Foundation (PJF), seven in the United States (US), one from Australia (using US data from PJF) and one from India (using US data from PJF).

All fifteen papers employed a phenomenological design (Creswell, 2008). Four papers used a quantitative design, six had a mixed methods design and five used a qualitative design. Although some papers collected data with varying time frames that were often not explicitly stated or verified, the designs were not longitudinal; rather the observation of a cross-sectional period of time (Stangor, 2007). Many of the papers were limited in that they did not explicitly state their design, thus leaving the reader to deduce the design from the methodology. It is likely that many of the researchers utilised an eclectic and bespoke

approach to developing a research design to meet their specific research aims (Creswell, 2008).

All papers can be described as utilising a purposive sampling method to select a sample directly from the phenomena of interest (Palinkas, Horwitz, Green, Wisdom, Duan et al., 2013). Sample sizes varied greatly depending on the research design. The smallest sample size came from Marcum's (2007) qualitative case series consisting of three interaction-pairs whereas Drouin et al.'s (2017) had an 1180 interactant-pair quantitative sample. For many of the qualitative and mixed-methods studies it was unclear whether the themes and patterns identified were unique to the online sexual grooming process given the lack of comparison groups. The studies/papers of Bogdanova et al. (2012), Pendar (2007) and Rahman Miah et al. (2011) have strengths in that they compare groomers and non-groomers and thus differentiate between narrative characteristics and patterns that distinguish groomers from non-offending/grooming online communications.

A variety of analysis methods were utilised a variety of qualitative coding techniques including sociolinguistic analytic techniques, Linguistic Inquiry Word Count (LIWC, 2015) and other computerised algorithms. Coding content in the qualitative and mixed-methods studies allowed for inferences (Stemler, 2001) and was carried out inductively and deductively across different studies. For example, Marcum (2007) utilised inductive latent coding, rather than predefined word categories, to consider the underlying meaning of the interaction. Whereas Black et al. (2015) and Gupta et al. (2012) utilised a deductive coding process based upon O'Connell's (2003) findings.

With regards to validity, many of the qualitative and mixed-methods papers acknowledge the limitations of small sample sizes with regards to generalisability of the results (Golafshani, 2003; Winter, 2000). Although all the studies had internal validity in that the phenomenon of interest could be directly analysed and did not rely on secondary reports, only one paper (Kloess et al., 2015) did not rely on data obtained from pseudo-victim interaction and utilised data from online interactions between convicted online sexual groomers and 'real' child victims. Although Black et al. (2015) discuss the utility of decoy data and suggested the lack of offender suspiciousness demonstrates the use of decoys as a realistic and useful tool, other researchers (not included in the current review) have noted that decoys will often present as the 'ideal' victim with regards to encouragement, compliance and willingness to engage in the interaction (McLaughlin, 2004). It is therefore possible that much of the data in the current review does not accurately and holistically reflect both variety of victim responses and subsequent range of offender strategies employed. The quantitative

studies described validation functions of automated computer programmes and the generalisability of the variable with regards to understanding the phenomenon of online sexual grooming.

With regards to reliability, it was noted that within the studies reviewed there was a wide variation with regard to the methodological detail presented. For example, O'Connell's (2003), paper presents very little methodological detail, thus affecting the replicability of the study and Gupta et al. (2012) did not consider the utility of testing inter-rater coding reliability to ensure methodological rigour. A variety of methods were utilised by many of the remaining qualitative and mixed-methods designs to ensure reliability including inter-rater reliability and split-half reliability. Egan et al. (2011) and Marcum (2007) do not comment upon the reliability beyond stating that larger sample sizes would be required to effectively assess reliability and validity.

Quality of the studies ranged from 75% to 100% using the MMAT quality assessment tool and application of a 75% quality threshold for inclusion. Those with lower quality percentages were characterised by a lack of consideration of the limitation associated with mixed methods designs (for example if qualitative and quantitative outcomes are divergent), the reliability and validity of the measures used for quantitative designs, and consideration of researcher influence in qualitative designs. For example, in O'Connell's (2003) study, where the researcher posed as a child online and interacted with online groomers to collect data, there is no explicit acknowledgement of potential researcher biases that may have influenced the direction and content of the interactions in line with the author's preconceived ideas and hypotheses.

Offender characteristics

The offender characteristics explored in the reviewed studies largely focussed on offender age and victim gender preference. van Gijn-Grosvenor and Lamb (2016) and Drouin et al. (2017) noted in their samples that offenders who groomed female victims were significantly younger than offenders who groomed male victims. Furthermore, Drouin et al.'s (2017) finding that offenders who groomed females had significantly higher word counts in their transcripts complemented van Gijn-Grosvenor and Lamb's (2016) finding in their sample that offenders interacting with females interacted significantly longer with their victims than those who offended against males online. It appears that victim gender preference is a characteristic that potentially differentiates between the strategies used and the

process of grooming with regards to the length of time spent on moving through the grooming process. This will be discussed further later in the review.

One third of Winters et al.'s (2017) sample lied about their age and van Gijn-Grosvenor and Lamb (2016) found that those who groomed male victims were more likely to deduct more from their real age in their reported age to their victim. This suggests a significant proportion of offenders reduce their age in their online persona. Interestingly however, Winters et al. (2017) found that no offenders pretended to be under the age of 18-years, i.e. none of the sample pretended to be a minor whilst talking to pseudo-victims. Kloess et al. (2015) found that whilst groomers occasionally presented as younger, they did not tend to hide the fact that they were adults.

Whilst the ethnic background of offenders was reported in some studies, only one study explored the relationship between ethnicity and online sexual grooming. Using a Chi-squared analysis, DeHart et al. (2017) noted that the cyber-sexual only and cyber sexual schedulers tended to be white, whereas schedulers and buyers tended to be ethnically diverse (these classifications are discussed in more detail later in the review). However, the sample was somewhat skewed in that more cases of scheduling and buying came from Florida which is a more ethnically diverse state than the other states included in the study. Given that the sample in the review studies largely represented US-based offenders (with two UK samples), the offender characteristics may only be generalisable to these populations and may only reflect westernised perceptions of grooming in westernised cultures.

Victim characteristics

Although many samples commented upon victim characteristics (for example, Drouin et al., 2017; Winters et al., 2017), the author feels that it is inappropriate to dwell too much upon these characteristics given that twelve out of fifteen studies utilised pseudo-victims who do not represent the reported victim demographics and may not accurately represent the communicative characteristics of the target population. For example, the finding that the pseudo-victims did not have sexual content in their username (Winters et al., 2017) is somewhat meaningless given that their sample came from the Perverted Justice Foundation. Decoy victims are trained to be mindful of entrapment and therefore use of a sexualised username as a decoy could well support an offender's case for entrapment. Therefore it is not surprising that none of this sample had sexualised usernames. Similarly, Drouin et al. (2017) comment upon the clout and sexual language used by victims, but this could have been biased by the decoy's motivation to secure a conviction. Kloess et al. (2015) utilised a 'real'

victim population, but did not report victim characteristics in order to protect the identity of the victims. Furthermore, assessing victim characteristics was not an aim of the present review, since details of this can be found in a literary review conducted by Whittle et al. (2013b).

Grooming strategies

Superordinate themes in the reviewed studies included: rapport building, initiating online sexual activity, pursuing sexual information, fantasy rehearsal, manipulation, risk minimisation, assessment/security, preparation to meet offline, ending the online contact and linguistic themes. In order to organise and summarise the key themes succinctly, they are presented under the following subtitles: development and maintenance of rapport, avoiding detection, sexual content, manipulation, discursive strategies and ending the contact.

Development and maintenance of rapport

Strategies that were identified regarding the development and maintenance of rapport included: showing care and concern for victim, empathy, flattery, exclusivity, minimising age gap (mirroring the child's language or bringing the child up to the platform of an adult), providing guardianship, support, displaying friendliness, and presenting as 'harmless'. Other techniques included assessing the victim's receptiveness to the interaction with regards to location/accessibility and likely compliance with the grooming process.

Avoiding detection

With regards to avoiding detection, common strategies identified in the studies included: development of trust, encouragement of secrecy, use of manipulation, risk assessment of the victim's support network and environment (obstacles and opportunities), the victims vulnerability and receptiveness, and risk assessment of police involvement.

Sexual content

Strategies regarding the initiation of a sexualised relationship and preparation for sexual abuse included supplementing sexual stimulation using desensitisation techniques via sexualised language, normalisation (for example disclosures of previous sexual contact with minors), exposure of genitalia via a web camera, use of pornography, requests for sexualised pictures, and fantasy enactment. Other strategies include the introduction of sexual content as a game, the offender providing reassurances or presenting as a sexual mentor/advisor for the

victim. Sexualisation was introduced and maintained via repetition, force, manipulation and boundary pushing.

Manipulation

Specific strategies related to manipulation included coercion, aggression, impatience, control and threats. Manipulation techniques also included exploitation of power imbalance and shifting responsibility to the victim by presenting the victim with ‘choices’. Marcum (2007) concluded that the latter is likely to be beneficial with regards to avoiding detection as the victim may self-blame and thus be fearful and subsequently less motivated to disclose the abuse.. Similarly, Black et al (2015), Marcum (2007) and Egan et al. (2011) noted offender’s propensity to acknowledge the illegal nature of their behaviour and the dangers of communicating over the Internet. This may function to manipulate the victim to evoke a sympathetic or excusive response that minimises/justifies the interaction.

Discursive strategies

Different discursive strategies were identified by Kloess et al. (2015), who noted an affectionate-manipulative style and a direct-aggressive style in their sample of five offenders. This is discussed in further detail in the ‘*Offender motivation*’ results section. Egan et al. (2012) and Williams et al. (2013) attempted to identify recurrent themes within the strategies and linguistics used by online sexual groomers. Communicative techniques identified included egocentric discourse, use of colloquialisms, fixated discourse and presenting as empathic towards the victim.

Ending the contact

Many studies identified the preparation and planning of a physical contact meeting for subsequent abuse offline. O’Connell (2003) also identified damage limitation (praise, repetition of mutuality, exclusivity and secrecy) and a ‘hit and run’ tactic as methods for ending online contacts. A ‘hit and run’ tactic is likely aided by the ‘Triple A’ characteristics of the Internet (anonymity, affordability and accessibility; Cooper, 1998).

Sequence of grooming

With regards to the process and trajectory of online sexual grooming, O’Connell (2003) attempted to provide a model of online sexual grooming that encompasses a number of

grooming strategies. O'Connell's stages of online sexual grooming consists of six stages (O'Connell, 2003; Gupta et al., 2012):

1. Friendship forming stage: this stage encompasses basic rapport-building strategies to find out about the interactant demographics and likely the willingness/receptiveness of the child to continue with the interaction.
2. Relationship forming stage: this stage utilises rapport-building strategies to build the relationship between the interactants and includes conversations about the victims environment, family, interests and hobbies.
3. Risk assessment stage: in this stage the groomer is reported to assess how much risk there is of being detected and engage in behaviours to ensure security such as ensuring victim secrecy and encouraging the victim to delete evidence of the interaction.
4. Exclusivity stage: this stage focuses upon gaining the victims trust and also utilises rapport-building strategies to increase the victims dependence on the groomer and subsequent compliance. This stage may also disinhibit the victim given the increased perception of intimacy.
5. Sexual stage: this stage includes the sexual desensitisation of the child and the systematic increasing of the intensity of sexual communications.
6. Concluding the encounter: this stage involves damage limitation, arranging an offline meeting and the potential use of a 'hit and run' tactic. In this context, 'hit and run' refers to the offender simply ending the contact after meeting their offence need without any ending dialogue or use of ending strategies to minimise risk of detection (possibly due to the anonymous nature of the Internet).

Gupta et al (2012) found in their PJF sample of 75 transcripts that the friendship-building stage was the most prominent stage accounting for 40% of the narrative, with the sexual stage only accounting for 24% of the lines in the transcripts. This highlights that grooming is preparatory process that systemically prepares the victim for future sexual abuse. As such it is not surprising that more time was spent building rapport than engaging in online sexual communications which without the emphasis on the friendship forming stages may have increased risk of detection or alerted the victim to the potential risk of the interaction without incentivising the victim to continue with the interaction.

Williams et al. (2013) also found evidence of similar strategies to O'Connell (2003), but found the process of grooming to be largely non-sequential with elements of assessment interlaced throughout the grooming process. Hence the process of online sexual

grooming may not be linear. Nevertheless, it should be highlighted that O'Connell (2003) was explicit in stating that the model is not rigid and that the sequence and number of stages as well as the length of each stage may depend on differences in offender motivation.

Black et al. (2015) similarly did not find a sequential pattern for O'Connell's (2003) model when they assessed the presence of strategies within their associated trajectorial stage. For example, flattery and rapport building was not more common in the first stage of grooming (compared to other stages) and relationship terms were not more common in the second stage. However, exclusivity terms were more frequently used in stage three and stage four compared to stage one and declarations of trust were more frequent in the relationship forming and exclusivity stages. With regards to risk assessment, it appeared that associated terms and strategies appeared early on in the interaction, during the friendship forming stage. A similar pattern was found for the introduction of sexual content. This risk assessment may form part of a triaging process where the offender assesses not only the likely willingness and vulnerability of the young person but also the likelihood of being caught. Further evidence for sexual content taking place earlier in the interaction comes from Winter et al. (2017), who reported that 89% of their sample introduced sexual content in the first conversation (the mean number of conversations for the sample was 10.97). By the second conversation 98% had introduced sexual content, suggesting that sexual content was most likely to occur in the initial stages of grooming. Gupta et al. (2012) noted that the conclusion stage of arranging an offline meeting did not necessarily occur at the end of the transcripts and that this stage was a recurring theme throughout the transcript. Again this may have formed part of an assessment process in which the offender assesses the willingness of the victim to engage in the target sexual behaviour.

Although not included in this systematic review due to the paper being a review rather than an empirical study, it is worth noting here that Kloess et al. (2014) suggest that the grooming process is a fluid process in which grooming strategies reoccur in different stages of the interaction in line with the response of the victim and the motivation of the offender. For example after introducing sexual communications the relationship-building stage may reoccur to re-establish the rapport and trust to ensure future compliance and the risk assessment stage may reoccur to ensure the victim will not report the abuse.

Offender motivation

Whilst victim gender preference has been discussed in the offender characteristic section, many of the findings suggest that there may also be motivational differences between

those who offend and against females and those who offend against males. For example, van Gijn-Grosvenor and Lamb (2016) found that offenders interacting with female victims were more likely to expose themselves via a web camera, but were also more risk-aware than offenders interacting with male victims. Offenders with male victims appeared more focused on sexual gratification than those who offended against females and, when requesting photos, were more likely to ask for pictures of genitals. There also appeared to be a difference in the focus upon the strategies used to achieve sexual gratification.

In the reviewed studies, the process of achieving sexual gratification and measures taken to achieve this have been shown to differ amongst different offenders. In a series of three case studies, Marcum (2007) found that one offender was not motivated to meet his victim to pursue offline physical sexual abuse. Compared to the two offenders who were motivated to meet their victim, this offender appeared less willing to be patient or participate in the building of a relationship and appeared more motivated by sexualising the content of the online interaction.

Moreover, Kloess et al. (2015) noted that there appeared to be two fairly distinct interactional styles within their sample of five convicted online sexual groomers. They found that whilst two offenders appeared to interact in a way to develop the relationship (perhaps concentrating more on the rapport building and exclusivity stages of grooming), three offenders were more direct in their approach. The former group appeared to use discursive strategies such as flattery, compliments, advice and jokes or games to introduce sexual themes and used imitation of negative effect as a manipulation technique to maintain the sexual interaction. The latter group immediately introduced sexual content through explicit statements, exposure via an Internet-mediated device and making sexual requests. They were less concerned about rapport building or the victim's personal life. Kloess et al. (2015) also noted that, for many of the interactions in their sample, the motivation of the offender did not appear to be that of a physical meeting for contact sexual offences rather they were motivated by the arousing nature of the sexual fantasy rehearsal played out in the online communication.

DeHart et al. (2017) identified four classifications of online sexual grooming. This complements Kloess et al.'s (2015) and Marcum's (2007) findings that not all online sexual groomers are motivated to meet their victim in the physical world. DeHart and colleagues (2017) noted the following classifications:

- Cyber-sex only: The offenders engaged in cyber-sexual activities (such as masturbation to online sexual communications) without scheduling a physical

meeting with the victim.

- Cyber-sex schedulers: These offenders engaged in cyber-sexual activities and organised a physical meeting with the victim.
- Schedulers: These offenders organised a physical meeting without engaging in cybersexual activities.
- Buyers: In these communications there was involvement of a third party for the purposes of child sex trafficking.

Unlike Kloess et al.'s (2015) and Marcum's (2007) studies investigating small samples, DeHart et al. (2017) utilised a large sample of 200 transcripts and statistical analysis gave weightings to the classifications identified. Analysis revealed associations between offender type and offending behavior. In line with the proposed classification system, exposure, incest themes and seeking sexual photos of the victim were most common in the cyber-sex only classification. Schedulers and buyers spent less time interacting with victims. This supports/validates the classifications since scheduler and buyer offenders would find the interaction process itself less arousing than the cyber-sex offenders. Furthermore, cyber-sex schedulers overrepresented the sample of offenders who cancelled schedule meet ups compared to schedulers and buyers. Again, this makes theoretical sense and the cyber-sex scheduler may have obtained motivation gratification through fantasy rehearsal rather than actual physical contact.

Utilising grooming transcripts to differentiate groomers from non-groomers

Not only do the studies in the review utilise transcript data to review offender/victim characteristics, strategies, processes and motivation for grooming, but they also look at how transcript logs may be utilised to identify distinguishing aspects of the grooming process compared to other online communications. Pendar's (2007) pilot study suggested that classification programmes may be able to distinguish between groomers and pseudo-victims, suggesting that the linguistic properties and characteristics of a groomer's language is quantifiably different to other types of dialogue and interactant role. It is possible that as the pseudo-victim is playing the role of a child, difference detected in the role may simply reflect difference in child and adult interaction styles. However, Rahman Miah et al. (2011) and Bogdanova et al. (2012) provide evidence that computer algorithms can successfully distinguish groomers from non-groomers including non-sexualised transcripts and highly sexualised transcripts between adults. This suggests that it is not just the sexual content that defines a grooming transcript, and that phenomenologically specific narrative themes and

strategies distinguishes online sexual groomers from other Internet-mediated communication users.

Utilising automated computer programmes to analyse and detect online sexual grooming

Detecting grooming interactions utilising automated computer programmes has practical advantages with regards to informing and developing current detection methods in law enforcement agencies, as well as potentially making the process of surveillance and detection more time and cost efficient. McGhee et al. (2011) noted a moderate to high degree of accuracy in their programme ChatCoder 2 in detecting grooming related content within transcripts. However, it was noted that the accuracy of trained human analysts was the similar to the higher range of accuracy of the ChatCoder 2 and they had a smaller range of variance. Thus the ChatCoder 2 was no more accurate than human coding but, once developed, the programme is likely to provide a faster method of identifying pre-defined categories. ChatCoder 2 was not improved by decision trees or instance-based learning algorithms. However, Rahman Miah et al. (2011) noted that using psychometric properties and categories from Linguistic Inquiry Word Count dictionaries improved the accuracy of their classifier programmes, demonstrating that the development and modification of computer programmes can result in improvements in accuracy.

Discussion

Overview

Internet chat rooms have the propensity to act as a medium for socially advantageous communications, however they have also become a medium for a new wave of sexual offending (Briggs et al., 2011). Despite the prevalence of online sexual grooming, research regarding the characteristics of online sexual grooming is scant in comparison to offline grooming research (Martellozzo, 2013). This was evident early in the scoping search and was confirmed further within the screening and selection process, whereby flexibility with regards to the inclusion criteria were required to reach an adequate number of papers for review. The initial review included all papers retrieved that had evidence of transcript analysis, with no quality assurance cut-off. However, it was noted that in the two years that passed between the first systematic search (April 2015) and the final search (March 2017), five high quality studies were published and therefore were subsequently included in the final review. This increase in papers allowed for a more stringent search protocol and the use of a 75% quality

threshold in this study. Just five studies over the last two years suggests that, whilst there is on-going interest in the phenomena of online sexual grooming and the utility of assessing direct phenomenological data, this is still an emerging line of research. Nevertheless, the sparse pool of literature using this direct data source is certainly growing. As such it is considered that the overarching objective of the review to synthesise the sparse pool of research that directly analyses offender-victim interactions was met. With regards to the specific aims of the review, it was concluded that each aim was met as discussed in turn below:

To synthesis findings obtained directly from online sexual grooming transcripts

The results of the current review regarding the process of online sexual grooming, associated strategies and differential offender motivations, largely mirror and reflect that of the current literature obtained from self-report and police report data. Furthermore, the results complement theories derived from the phenomenon of offline grooming, such as that proposed by Olson et al. (2007). Key differences with regards to offline literature were the offender's willingness to take risks and apparent minimisation of risk with regards to detection. This difference may possibly be explained in part by the 'Triple A' properties of the Internet, which may disinhibit the victim as well as the groomer. Furthering this premise, Egan et al. (2011) concluded that online sexual groomers may be more direct in their approach and less subtle with regards to the sexualisation of the interaction as compared to offline groomer, attributing this difference to the anonymity that the Internet provides.

The review of online sexual grooming transcript data also complemented findings from self-report methods with regards to online sexual groomers being distinguished from other offenders. Furthermore, the review identified that online sexual groomers are not likely to be a homogenous group; a premise also held by a number of researchers and theorists of grooming (e.g. Elliott & Beech, 2009; Elliott et al., 2009; Itzin, 2001; Whittle et al., 2013).

To synthesise findings and considerations regarding the process and trajectory of grooming

The strategies identified within the reviewed papers were largely similar, with most if not all differences relating to the terminology used to describe a given strategy. O'Connell's (2003) study encompassed many of these themes and organised them into a theoretical typology of the grooming process. Although the model is presented in a linear fashion, O'Connell (2003) is explicit with regards to the model's flexibility depending upon the

offender's motivation. As a result, different stages may be reached and maintained over variable time trajectories for different offenders. It may be that the time required for perceived successful grooming may be influenced by the offender's goals and needs (Webster et al., 2012). Given that interactions may not neatly or inclusively follow the six stages presented by O'Connell (2003; Black et al., 2015; Williams et al., 2013), a potentially fruitful avenue for future research may be the modification of the six-stage model into a more dynamic model of grooming akin in structure to that of Olson et al. (2007); but specific to Internet-mediated interactions.

To explore and synthesise findings regarding offender heterogeneity and offender motivation

Automated computer programmes have demonstrated that online sexual groomers can be distinguished from non-grooming populations and the victim within the interaction. Hence online sexual groomers may have a distinct online interaction style. This is significant given that many parallels exist between online sexual grooming and online dating processes and motives. For example, it is likely that online daters will employ strategies to create a self-enhanced persona, and assess accessibility and victim willingness to engage to increase likelihood of achieving sexual gratification (Ellison, Heino & Gibbs, 2006; Finkel, Eastwick, Karney, Reis, & Sprecher, 2012; Williams et al., 2013). Nevertheless, the review identified that online sexual grooming interactions can be distinguished from adult sexual fantasy transcripts.

Furthermore, online offenders appear to lack homogeneity and the current review identified a number of differentiating factors between different online offender typologies. The current review identified that offender characteristics with regards to offender age and strategies implemented differed depending on victim gender preference. Unlike findings from less direct methods (*e.g.*, Dowdell, Burgess, & Flores, 2011), although some posed as younger than their actual age, no offenders posed as minors. Victim gender preference groups again appeared to differ in the likelihood of using such methods of age deception with male-victim offenders deducting more from their age than female-victim offenders (van Gijn-Grosvenor & Lamb, 2016).

Motivational differences between offenders included differences in the focus of obtaining sexual gratification during the online interaction and motivation to arrange a physical meeting. As such, DeHart et al. (2017) identified four types of online sexual groomers: cyber-sex only, cyber-sex schedulers, schedulers and buyers. Whilst buyers appear

to reflect traffickers and possibly not those with a sexual interest in children, the other three groups broadly match the classification of contact-driven and fantasy-driven groomers. Differences in motivation appeared to translate into discursive style with affectionate-manipulative and direct-aggressive styles identified. Furthermore, it appears that different motivations influenced the selection and employment of grooming strategies.

Implications for practice and future directions

Collating and synthesising data has allowed for an overview of the literature's understanding thus far of the grooming process and the strategies employed by online sexual groomers to successfully groom victims for sexual abuse. A number of implications for practice were identified from the review including the finding that grooming may not be a linear process. Therefore, when attempting to identify the presence of grooming within a transcript in research or criminal justice investigation, assessing the sequencing of grooming strategies and themes with the interaction may not yield fruitful results or patterns that would significantly impact upon outcomes. Additionally, future studies should also consider the motivation of the offender typology and how this may confound or hide patterns in sequencing if not appropriately controlled for.

With regards to the use of undercover police officers and adults posing as children online, the data has been argued to be unrepresentative of true offender-victim interactions (Kloess et al., 2014). Nevertheless, understanding the strategies and communication used by an offender during a perceived 'successful' grooming interaction (in that the decoy is both compliant and responsive) may have significant benefits in the application of undercover operations. Undercover police officers can use knowledge of different offender strategies to more effectively interact with offenders, thus increasing the likelihood of a successful apprehension and allowing the evolution of current detection strategies towards a more proactive standpoint (McLaughlin, 2004).

Concerning practical implications, the synthesis of available data may contribute to and inform the development of automated computer programmes that can filter and identify potential case of online sexual grooming. Such work has already begun based on the language used within an interaction (McGhee et al. 2011; Pendar, 2007; Rahman Miah et al., 2011). Data regarding themes and strategies could greatly inform such ventures by highlighting categories of words and themes that would be important to utilise in a lexicon scanning programme (Bogdanova et al., 2012). Researchers of current technology developed to block or prevent potential harmful and exploitative interactions online continue to express

caution regarding current programme utility and acknowledge the need for continued growth in knowledge regarding the communicative characteristics inherent in the grooming process (Gupta et al., 2012). The development of such enhanced programmes has significant implications with regards to the potential facilitation of proactive detection operations that can be conducted before sexual abuse occurs (Cano, Fernandez & Alani, 2014; Kloess et al., 2014). This could promote advances in the use of the current Section 15 legislation of the Sexual Offences Act 2003 (Home Office, 2003), legislation that to date has been used in a largely reactive manner (Craven, Brown, & Gilchrist, 2007; Gillespie, 2002).

In turn, the development of linguistic profiling programmes will not only allow enhanced early detection of online sexual grooming, but will also provide an objective and reliable method of analysis with which to further study the phenomenon. Future studies should explore and exploit such programmes given their inherent advantages with regards to objectivity and time-cost efficiency that in turn allow for the utilisation of larger samples. However, caution should be taken with using such methods regarding the reliability of the programmes in accurately detecting the presence of every single occurrence of a grooming strategy and theme, as highlighted by McGhee (2011).

Strengths and weaknesses of the review

The main strength of the review is that it is the first known review to collate and synthesise evidence of the process of the interaction between online sexual groomers and their victims, thus addressing a gap in the current review literature regarding the phenomenon of online sexual grooming. Through the synthesis of current research, the review highlights a number of implications and opportunities for future development and research.

There is some debate as to the utility and appropriateness of systematically synthesising qualitative papers due to the subjective nature of qualitative data (Cherry et al., 2014). Nevertheless, as with all qualitative research, the strength of such methods is in the ability to illuminate and construct greater understanding of the phenomena of interest (Cherry et al., 2014; Tong, Flemming, McInnes, Oliver & Craig, 2012). Furthermore, the complementary findings of mixed-method and quantitative designs address some of the common criticisms of qualitative data including a lack of comparison groups and small sample sizes.

With regards to weaknesses, the search strategy excluded any papers that were not published in the English language. It was noted that three papers were excluded based on this criterion (Appendix III; Hill, Briken & Berner, 2007; Kopecky, 2014; Wachs, Wolf & Pan,

2012). However, it is likely that this did not bias the current review significantly since English translations were available for the abstracts and from these it appeared that the papers would not have met the inclusion criteria with regards to the collection of data from transcripts of direction offender-victim/decoy interactions.

The current review did not include data regarding female offenders. Therefore, the results of the current review cannot be generalised to female online sexual groomers as they may qualitatively differ from male offenders (Gannon, Rose & Ward, 2008). Only two studies were excluded on the premise that the data pertained to female offenders (Appendix III; Collins & Duff, 2016; Lambert & O'Halloran, 2008). However, this is unlikely to bias the current review since the studies also did not meet the criteria for including direct evidence from offender-victim transcripts.

With regards to the search methodology of this review, upon reflection an important synonymous term for online sexual grooming was missed: '*online solicitation*'. '*Solicitation*' was frequently utilised in the reviewed studies and including this phrase in the search strategy may have increased the number of papers retrieved in the initial search rather than the heavy reliance on reference and hand searches. Only four databases (and one grey literature database) were searched and therefore the search may not have been optimally comprehensive. Furthermore, it was noted that three additional papers were included in the review after using a free-hand search, thus raising a question as to whether the databases searched were the most appropriate databases and whether more suitable databases are available that would have identified these papers. Nevertheless, from the databases the author had access to, databases used in this review/study appeared to be the most appropriate from examination of their titles and information regarding the nature of the papers available. Additionally, all papers subject to the inclusion and exclusion criteria had their reference lists searched first by relevant titles and then by screening of the abstracts to identify any papers missed from the search.

The author alone deployed the inclusion/exclusion screening and selection tool and extracted data from the reviewed papers. Therefore, it is unknown whether a non-deliberate selection bias was introduced. The inclusion and exclusion form and data extraction form were purposefully designed to have detailed and explicit qualities intended to reduce the capacity for bias. Nevertheless, it may have been beneficial for a second rater to implement the inclusion/exclusion screening and selection tool on a small number of the retrieved papers to assess for inter-rater reliability.

Finally, the MMAT has been positively appraised in literature and has been reported to be in the top five critical appraisal tools (Crowe & Sheppard, 2011). However, it was previously noted that the MMAT quality assessment form lacks reliability with regards to items 1.3 and 1.4. The issue of ambiguity was present during the inter-rater quality assessment process, however through defining the author's threshold prior to conducting the assessment, this issue was somewhat controlled for. Finally, it should be noted that the tool remains in the developmental stages and requires some refinement as well as larger studies to test the reliability of the tool further (Pluye, 2013).

Conclusions

The current review encapsulates the current status of research within the field and provides a framework for further data collection, whilst informing appropriate directions for future research.

Understanding the offender-victim interaction can provide key insights regarding the phenomenon of online sexual grooming including improvement in authorities' abilities to identify signs of online sexual grooming that can in turn improve the detection and prevent future online and offline CSA (Whittle et al., 2015). Ultimately, increases in the understanding and validation of current knowledge about the process of grooming will serve to inform society about ways in which to keep children and young people safe online. Such safeguarding methods may include the development of software scanning programmes and the development and practice of child safety policy and criminal legislation. Advances in understanding will also have a number of benefits that can assist in and support:

- The development of community education and safety programmes
- The development of assessments and interventions for both offenders and victims
- Raising awareness and developing training programmes for criminal justice services
- Increasing public awareness of the phenomenon within our growing online world.

Continued advances in mixed-method analytical programmes will allow for further analysis of proposed strategies of online sexual grooming in a more objective manner, exploring a number of different variables including different offender motivations. In a technological world, advancing at a rapid rate, it is likely that the nature of online sexual grooming will continue to develop and evolve with the rapid growth, capacity, scope and pervasiveness of the Internet. Further, it will be important for services to bear in mind the influence that

different offender motivations may have not only in the detection of online sexual grooming, but in the subsequent apprehension and treatment of offenders and the potentially differential psychological consequences for victims.

Chapter 4
Research Project

Strategies employed by contact-driven and fantasy-driven online sexual groomers: An exploration of offender narratives within grooming interactions

Title: Taylor, H. G., & Craig, L. A. (2017). Strategies employed by contact-driven and fantasy-driven online sexual groomers: An exploration of offender narratives within grooming interactions. *University of Birmingham, Centre for Forensic and Criminological Psychology*.

Abstract

The grooming strategies employed by online sexual groomers have been identified through a variety of research methods including self-report measures, interviews with victims and direct analysis of grooming transcripts. Through a process of theory knitting, Elliott (2015) has integrated models of online sexual grooming based upon the growing pool of empirical evidence regarding grooming strategies and processes. This model is known as the Self-Regulation Model of online sexual grooming. This model is however in its infancy. Much of the evidence upon which grooming models are based derive from small samples. This is largely due to the qualitative methods necessitated to obtain an in-depth phenomenological understanding of the process of grooming. However these findings require validation using larger sample sizes and statistical analysis. Furthermore, whilst studies have also suggested that some offenders are not motivated to meet their victim offline, differences between these offenders and offenders who are motivated to meet their victim have not been statistically analysed to date with regards to the grooming strategies utilised.

The current study utilised a computer-automated programme, LIWC2015, to explore the narrative themes present in online sexual grooming interactions ($n=150$). A six-factor solution was produced from a Principle Components Analysis (PCA) and the resulting factors appear to complement the process outlined in Elliott's (2015) Self-Regulation Model. With regards to exploring different offender motivations, significant differences ($p<.05$) were noted for a number of LIWC2015 word categories ('analytic', 'sexual', 'body', 'feel', 'discrepancy' and 'swear'), with the fantasy-driven sample ($n=75$) displaying a higher average frequency of these words than the contact-driven sample ($n=75$) when length of the transcripts were controlled for. The only factor from the six-factor PCA solution that obtained significant differences between the two samples was *Sexual Desensitisation* ($U=2030.5$, $p<.002$, $r=.26$). This factor was also the only factor that held predictive properties for group membership in a logistic regression model ($\chi^2(6) = 14.247$, $p=.0027$).

This exploratory study provides preliminary evidence supporting Elliott's (2015) Self-Regulation Model of online sexual grooming. Despite some limitations with the LIWC2015 measure and the sample from which the data was obtained, the findings of this study have implications for law enforcement agencies with regards to understanding how different offender motivations present in the grooming narrative and prioritising case investigations. The study further demonstrates the utility of using automated programmes to assist with the analysis of offender motivation.

Introduction

Previous chapters have explored online sexual grooming as a distinct typology of sexual offending and the research methods that are used to assess the phenomenon. A systematic review has synthesised the findings of data obtained from methods of transcript analysis to be used as a direct measure of the grooming process. Findings suggested that the grooming strategies reported by groomers and victims are validated by evidence of their utilisation in grooming narratives. It also appears that the grooming narrative is unique to the phenomenon and can be distinguished from other non-grooming transcripts, even those that are highly sexual in nature. Furthermore, a distinction was revealed between groomers who are motivated to meet their victim offline for further physical Child Sexual Abuse (CSA) and those offenders who were not motivated to meet their victim, but rather satisfied their offending need through the online cyber-sexual interaction itself. This chapter will continue to explore the role of different offender motivations and add to the existing literature by assessing whether the narratives of groomers can predict the motivation of the offender.

This chapter commences with a brief review of the current status of attempts to develop a theoretical model of online sexual grooming. This study contributes to the empirical research necessary to validate qualitative research and theoretical models using a large enough sample size to generate an adequate level of power. Many studies to date have used small sample sizes and self-report measures which has provided in-depth knowledge and allowed for semantic regarding the process of online sexual grooming and have shed light on the different motives of online sexual groomers. This study attempts to assess the potential for offence motivation to be detected utilising a crude automated computer programme that can allow for a large number of transcripts to be analysed and compared for patterns and themes.

Models of sexual grooming

Although developed to describe the process of sexual offending against children in the physical world, Finkelhor's (1984) widely cited and respected Precondition Model appears to complement Craven et al.'s (2006) description of systemic processes in sexual grooming (grooming the self, environment and child), in that it suggests that the offender needs to be motivated to sexually abuse and overcome internal inhibitors before overcoming external/environmental barriers and overcoming/placating resistance from the victim. With regards to online offending, Quayle and Taylor (2003) developed a more specific model to

explain the processes that can lead to Internet sexual offences. They identified a number of factors that influence the propensity to engage in Internet offences against children including: predisposing early experiences that act as setting events, Internet use, problematic cognitions, offending behaviour, internal factors and cognitive social factors.

Whilst Quayle and Taylor (2003) and Finkelhor (1984) provide theories regarding the circumstances in which grooming may occur, they do not detail how the act of grooming itself may be carried out. Using a process of theory knitting (Kalmar & Sternberg, 1988), Elliott (2015) produced a Self-Regulation Model of sexual grooming to explain the processes and stages involved in the act of sexual grooming. The theory draws upon Olson, Daggs, Ellevold and Roger's (2007) Theory of Luring Communication, Webster et al.'s (2012) European Online sexual grooming Project model and O'Connell's (2003) stages of online sexual grooming. A brief description of the models upon which the Self-Regulation Model is based is provided below, followed by a description of the Self-Regulation of Sexual Grooming (Elliott, 2015).

Theory of Luring Communications (Olson et al., 2007)

Olson et al. (2007) developed a model of how offenders who sexually abuse children communicate with their victim to optimise success of the grooming process. Olson et al. (2007) pose four distinct sequential factors within their model to describe the process involved in the grooming of a child for sexual abuse:

1. Gaining access: in this stage the Luring Communication Model accounts for individual characteristics of both the offender and the victim, as well as the manipulation of the environment as part of strategic placement.
 - Olsen et al. (2007) draw upon sex offending literature to predict the likely characteristics of offenders. They suggest low-self esteem, intimacy deficits, poor impulse control, social deficits, maladaptive early life experiences and trauma may be characteristics found in the grooming population.
 - With regards to characteristics of the victim, the model highlights low self-esteem, dysfunctional family environments, and naiveté as characteristics groomers may target given that these characteristics facilitate the isolation of the victim and likely receptiveness of the victim to grooming strategies.
 - Strategic placement simply relates to an offender placing themselves in an environment which increases the likelihood of encountering a potential victim. Placement can be opportunistic or planned and targeted in nature.

2. Cycle of entrapment: this stage incorporates deceptive trust development, approach, grooming and isolation (a detailed description of the cycle of entrapment can be found in the introduction of Chapter 3).
 - Deceptive trust development is described as a manipulative process in which the offender exploits their role as a trusted adult.
 - Grooming refers to the preparation of the child for abuse via communicative desensitisation and reframing strategies where the child is systematically introduced to sexual themes and the benefits of engaging in sexual activity.
 - Isolation refers to the distancing of the victim from their support networks. It can refer to increasing both physical and psychological isolation.
 - Approach is the final stage of this cycle characterised by physical escalation towards the motive abuse behaviour.
3. Communicative responses to sexual acts: this stage involves the offender using communicative strategies to maintain victim compliance and to manage victim responses through strategies that manipulate the victim in a way that supports and encourages the offender's behaviour. This stage may also include the offender using threats and coercion.
4. On-going sexual abuse: this stage refers to the engagement in the offence motive and target behaviour.

Within the Theory of Luring Communications model, the success of the groomer is said to be dependent upon the strategies that they employ and the responsiveness of the victim to these strategies (Elliott, 2015). This process is regulated by assessment and feedback processes. The strategies identified by Olson et al. (2007) were based mainly upon offline grooming data and thus the model is not specific to the process of online sexual grooming, but more generally describes the process of preparing a child in an unspecified context for subsequent CSA. Therefore, this model may be less applicable to groomers whose primary offending goal is not that of contact sexual offences. Whilst it is a largely informative model, it has also been criticised for focusing on negative grooming strategies, such as coercion, whilst not giving enough attention to positive grooming strategies such as flattery and tangible rewards (Elliott, 2015). Furthermore, the model assumes negative victim responses, however it is known that some victims do not view the relationship as abusive and believe themselves to be in a consensual positive relationship with their groomer (Webster et al., 2012; Wolak, Finkelhor & Mitchell, 2004).

European Online Grooming Project model (EOGP) (Webster et al., 2012)

In 2012 Webster et al. conducted the European Online Grooming Project (EOGP) via the investigation of self-report data, police records and focus groups. They collected data from young people, offenders, stakeholders and law enforcement agencies (Webster et al., 2012). As a result of this large-scale research, Webster et al. (2012) developed a six-factor model describing the key features of online sexual grooming. The model is non-sequential in trajectory and is not constrained by specified timeframes, however it encompasses the following concepts:

1. Offender vulnerability: EOGP noted that situational factors such as being unemployed and experiencing interpersonal difficulties as vulnerability factors.
2. Scanning/mapping for online targets: this stage involves the offender engaging in victim triaging and assessing which potential victims meet their offence needs.
3. Identity and online presentation: offenders may or may not decide to create an online persona inconsistent with their actual demographics. The degree to which someone changes their online presentation varies.
4. Contact mode, style, approach:
 - There are a number of different online modes of communication including use of web cameras, chat rooms, Internet-enabled mobiles and online video gaming chat functions.
 - Offenders may engage in multiple online interactions at any one time.
 - A style that complements the development of an initial positive rapport is noted.
 - EOGP noted that the disinhibiting effect of the Internet means that many grooming interactions online take place over a much shorter period of time than would be expected in a face-to-face interaction.
5. Intensity: this concept relates to the offender's utilisation of desensitisation strategies including the use of incentives and visual and linguistic desensitisation techniques.
 - Incentives can be classed as positive in sense of providing tangible and psychological goods such as gifts and praise. Incentives may also be negative with regards to the offender threatening or blackmailing the victim.
 - Visual desensitisation techniques include the systematic sending of adult pornography and Child Pornography (CP) images that sequentially escalate in the explicit and sexual nature of the images. The authors of the EOGP noted that during this strategy the offender may achieve sexual gratification.

- Linguistic desensitisation includes the subtle introduction of sexual topics for example through jokes and progressively escalate this for example into persuading the victim to engage in masturbation as part of a game.
- 6. Outcome: the EOGP summary of online sexual grooming acknowledges that whilst the target behaviour may for some offenders be the subsequent offline meeting with the victim for further physical CSA, for others the online interaction and possible production and collection of CP may be the target outcome.

A strength of the model is that it does not propose a single goal outcome for offenders. Therefore, it is applicable both to offenders who are motivated to perpetrate contact CSA and to offenders who are motivated to engage in purely online sexual discussions and the collection of CP/ Indecent Images of Children (IIOC) via online technology. As with O'Connell's (2003) model, the EOGP model focuses on the importance of risk management and the subsequent management of the conversation (Elliott, 2015; Webster et al., 2012). The model also describes both positive and negative grooming strategies (Elliott, 2015; Webster et al., 2012). A key differentiating feature of the EOGP model in comparison to the Theory of Luring Communication is that it accounts for victim responsiveness and how this may affect the approach of the offender with regards to desensitising the victim (Elliott, 2015; Webster et al., 2012). The model thus sees the victim as an active and dynamic agent within the grooming process.

Limitations of the EOGP model, however, includes the fact that although it accounts for different offender motivations, it concentrates too heavily on the assumptions that it makes about offender characteristics and thus the model is difficult to apply to offenders who do not have the characteristics described within the model (Elliott, 2015).

Stages of online sexual grooming model (O'Connell, 2003)

O'Connell (2003) distinguished between three different processes in committing sexual offences against children: targeting, grooming and exploitation. With regards to the grooming process, O'Connell (2003) proposed a six-stage model of the trajectory of online sexual grooming:

1. Friendship forming stage: initial rapport-building stage to find out the victims demographics and potentially the visual characteristics of the victim through the exchange of non-sexual photographs.
2. Relationship forming stage: this stage builds upon the former stage to intensify the relationship for example by escalating the relationship from the victim perceiving the

relationship to be that online acquaintances to that of a relationship akin to ‘best friends’ or that of a ‘special’ relationship.

3. Risk assessment stage: in this stage the offender engages in a risk assessment to find out who could potentially find and intercept the victims online interactions. This may include assessing the location of the computer the victim is using and who else has contact to the computer.
4. Exclusivity stage: the assessment of trust, perceived closeness and mutuality is key to this stage of the grooming process
5. Sexual stage: after trust and mutuality is established the offender systematically introduces sexual themes. This stage may include the introduction of and selling of the benefits of engaging in sexual activity, sharing IIOC, sexual fantasy rehearsal including mutual fantasy rehearsal, coercing the victim to engage in the rehearsal and the rehearsal of violent sexual fantasies.
6. Concluding the encounter: this stage involves damage limitation including the use of praise and encouragement. A hit and run tactic may also be observed where an offender does not engaging in damage limitation and does not appear to be motivated to maintain the online communication over an extended period of time. In some instances an offline meeting is arranged.

The model highlights the importance of the building and maintenance of a perceived relationship. It attempts to explore how these key features are monitored and regulated throughout the grooming process (Elliott, 2015; O’Connell, 2003). This is a strength, since it provides some guidance towards understanding the process of choosing and selecting a specific combination of grooming strategies that are going to enhance the likelihood of the offender meeting their offence goal for that specific interaction. It also highlights how different strategies are likely to be utilised dependent upon the victim’s responsiveness within the grooming interaction.

However, the stages of online grooming model (O’Connell, 2003) is not without criticism. Elliott (2015) argues that the process of grooming outlined in the model overlaps with other concepts regarding targeting and exploitation. These processes may be separate to the grooming process in that targeting takes place before engaging in grooming behaviour and exploitation occurs after the victim has successfully been groomed in preparation for the process of exploitation. Elliott (2015) also addressed the sample used within O’Connell’s (2003) research, suggesting that the model may lack generalisability in that it may only be applicable to adults who target female children online. Furthermore, it is suggested that

transition between stages may be somewhat lacking in explanation (Elliott, 2015). Recent studies that have analysed grooming transcripts suggest that, whilst grooming strategies can fit into the categories and stages described by O'Connell (2003), the trajectory and movement between the stages is not clear-cut or linear (Black, Wollis, Woodworth & Hancock, 2015) and that movement between the stages of grooming identified by O'Connell is largely non-sequential (Williams, Elliott & Beech, 2013). O'Connell (2003) suggested that the sequence and length of time spent at each stage may depend upon differential offender motivations.

Self-Regulation Model of sexual grooming (Elliott, 2015)

Elliott (2015) noted that the models described above complement one another theoretically and together provide a significant contribution to the knowledge-base regarding sexual grooming. Elliott (2015) attempted to integrate these models and expand the theory beyond online sexual grooming to a more generalisable model of sexual grooming encompassing both online and offline grooming, whilst addressing some of the limitations that he identified within the models previously discussed. Key features from the models that Elliott highlighted in his integrative model include:

- A goal motivated framework
- Self-regulatory feedback systems
- The effect of external influences
- Relationship-forming
- The effect of reinforcing/coercive incentives
- Risk management strategies
- A desensitisation process controlling goal-oriented activities

The model accounts for the fact that there can be multiple and differing offence goals within the realm of online sexual grooming. This accounts for different offence behaviours including that of cybersexual offences and offline CSA offence targets/goals. Importantly, the process of grooming is driven by the goal and monitored through processes of self-regulation in order to meet the underlying need. The Self-Regulation Model has two distinct stages: a potentiality stage and a disclosure stage (Elliott, 2015). In order to successfully progress through the phases of grooming described in Elliott's (2015) Self-Regulation Model, the offender may have to employ a number of strategies to increase the likelihood of success.

The potentiality phase involves rapport-building, incentivisation, disinhibition and security-management behavioural processes:

- Rapport: in this process, the quality of the relationship between the offender and victim is regulated. This stage includes themes of positivity and mutual attentiveness and coordinating a predictable relationship and instilling confidence between the parties.
- Incentive: in this process, the motivation for the victim to engage is regulated. Incentivisation incorporates a number of concepts to reward, punish or motivate behaviours including moral, coercive, natural and remunerative incentives. This stage may also include the motivation to maintain emotional closeness and avoid conflict that may result in uncertainty.
- Disinhibition: in this process, the victim's ability to respond genuinely is reduced. This may include the use of drugs and alcohol, but may also include the disinhibiting effect of the online environment (Suler, 2004) where one can dissociate the real world from the online world and feel less self-conscious as a result of not being physically present with the other interactant.
- Security: in this process, the risk of exposure is regulated and minimised. This may include the offender protecting their identity or manipulating their online presence. It may also involve risk-assessing the victim and their environment.

In the Self-Regulation Model, the offender's weighting and use of each process is unique to their level of need required to achieve their offence goal.

The disclosure stage is where the desired outcome and offender-goal is systematically presented to the victim whilst desensitising the victim to the target sexual abuse behaviour (Elliott, 2015). The disclosure phase capitalises upon the potentiality phase and involves the continual assessment and regulation of the feedback provided by the victim (Elliott, 2015).

Strengths of the model include the fact that it does not make any etiological assumptions regarding why offenders become motivated to engage in grooming processes (Elliott, 2015) and thus the model should be applicable to all offenders engaging in the grooming process. The model also has strengths in that it draws together a number of established theories, not only in the domain of grooming but also wider sexual offender theories, self-regulation theories and human goal-seeking behaviour theories (*e.g.* Carver & Scheier, 1981; Finkelhor, 1984; Ward & Hudson, 1998; Ward & Hudson, 2000). However, the model is in its infancy and requires empirical support to test and confirm its hypotheses.

Grooming strategies

Victim compliance and detection avoidance are central to ‘successful’ grooming. Compliance is aided by the fact the children are often keen to please adults and will thus maintain secrecy (Kloess, Seymour-Smith, Hamilton-Giachritsis, Long, Shipley & Beech, 2015), although the maintenance of secrecy may be aided by the employment of incentive, coercive and manipulative strategies by the offender/groomer. Marcum (2007) highlights that such manipulative techniques minimise the likelihood of victim disclosure due to victim self-blame. Kloess et al. (2015) also found that, beyond the content of the strategies used, the way in which the strategies are delivered and presented may also be important with regards to gaining compliance, for example by presenting sexualised information in a playful and ‘innocent’ manner.

Only a small number of studies have been conducted to assess the strategies employed by online sexual groomers (Quayle & Taylor, 2003) and an even smaller number gather data directly from interaction transcripts between online sexual groomers and victims or undercover adults posing as children (as highlighted in the previous chapter). Table 5 presents the grooming strategies that have been described in sexual grooming literature, with a section specifically designated to highlight the findings from studies that have directly analysed grooming transcripts. For the purposes of organising the strategies into a comprehensive set of categories based on the literature and theories of sexual grooming proposed thus far, the grooming strategies identified in the literature have been organised according to the behavioural processes and disclosure processes described in Elliott’s (2015) integrative Self-Regulation Model of sexual grooming. As previously noted, it appears that the sequential trajectory of grooming is not linear or clear in nature, thus it is likely that many strategies may be included in multiple stages and phases of the grooming process.

Table 5: Grooming strategies identified in published literature

Self-Regulation Model of grooming	Online sexual grooming strategies identified in literature	
	Self-report, interview, secondary source grooming data	Online offender victim/decoy data
Potentiality Phase	Rapport-building	Flattery Compliments Showing love and affection False self-representation Empathy Making the victim feel special Exclusivity Verbal and behavioural seduction Mentoring Mutuality and co-participation
	Incentivisation	Bribes Rewards Drugs and alcohol Gifts Exclusivity Creating competition Peer pressure Threats Threats to remove affection Emphasising the benefits of sexual behaviour Flattery
	Disinhibition	Mutuality and co-participation Threats to remove exclusivity Drugs and alcohol Giving victim perceived choice and responsibility Validating relationships between adults and children
	Security management	Intimidation
		Flattery Compliments Showing love and affection Presenting self as amicable and competent Empathy Creating exclusivity Exclusivity Mentoring Providing emotional support Providing guardianship Minimising age gap (mirroring the child's language or bringing child up to platform of an adult) Mutuality and co-participation Socially confident and commanding language

Disclosure Phase	Desensitisation AND introduction of motivation and target behaviour	Threatening victim Threatening harm to victim's family, friends and support network Blackmail Encouraging and promoting secrecy Threats to remove affection Threats to remove exclusivity Physical/mental isolation of victim Threats that victim will be blamed Induce guilt and shame in the victim	Threatening victim Threatening harm to victim's family, friends and support network Encouraging and promoting secrecy Seeking reassurances Risk assessment of police involvement Risk assessment of victim's environment and support network Assessing victim willingness to engage Acknowledging illegality of actions and seeking reassurances
		Exposure to sexually explicit materials Normalising acts seen in sexually explicit materials Sexualised language Physical escalation Reframing (highlighting the benefits of sexual contact to the child) Stimulating victim's sexual curiosity Enquiring about victim's sexual experiences Reframing (highlighting the benefits of sexual contact to the child)	Exposure to sexually explicit materials Normalising acts seen in sexually explicit materials Sexualised language Sexual fantasy rehearsal Disclosing and normalising personal sexual experiences with children Exposure via web-camera Sexual behaviour Repetition, force and boundary pushing Risk minimisation Requesting photos of victim Mentoring Sexual language and behaviour Sexual fantasy rehearsal Exposure Making sexual contact part of a game

(Beech, Elliott, Birgden & Findlater, 2008; Bennell, Alison, Stein, Alison & Canter, 2001; Berliner & Conte, 1990; Berson, 2003; Black et al., 2015; Campbell, 2009; CEOP, 2008; Conte, Wolf & Smith, 1988; Craven et al., 2006; Cossins, 2002; DeHart, Dwyer, Seto, Moran, Letourneau & Schwarz-Watts, 2017; Drouin, Boyd, Hancock & James, 2017; Durkin, 1997; Egan, Hoskinson & Shewan, 2011; Elliott, Browne & Kilcoyne, 1995; Gilgun, 1994; Grosskopf, 2010; Kloess et al., 2015; Krone, 2005; Lang & Frenzel, 1988; Lawson, 2003; Leberg, 1997; Leclerc, Proulx, & Beauregard, 2009; Malesky, 2007; Marcum, 2007; McLaughlin, 2004; O'Connell, 2003; Olson et al., 2007; Palmer, Brown, Rae-Grant & Loughlin, 1999; Quayle, Allegro, Hutton, Sheath, & Lööf, 2012; Shannon, 2008; Singer, Hussey, & Strom, 1992; Sullivan & Quayle, 2012; Warner, 2000; Webster et al., 2012; Williams et al., 2013; Wolak et al., 2008)

Fantasy-driven versus contact-driven offenders

Over and above the obvious motive of sexual gratification, Wolak et al. (2008) suggest that curiosity, inadequacy/fear of age appropriate relationships, power, seeking admiration and impulsivity may contribute and motivational factors for online sexual grooming. Grooming may also be driven by financial gains (McGuire, 2013) for example grooming may function as a way of initiating trafficking offences (DeHart et al. 2017) and the production and subsequent selling of CP. Research has shown that online sexual groomers are not a homogenous group and are thus likely to have different goals regarding the utility of grooming strategies (Elliott & Beech, 2009; Elliott, Beech, Mandeville-Nordon & Hayes, 2009; Itzin, 2001). For example, research has suggested that, notwithstanding early termination due to interception, a number of online sexual grooming interactions do not progress or lead to a physical meeting, supporting the notion that some online sexual groomers are solely motivated to engage in ‘cybersexual’ interactions with their victims (Briggs, Simon & Simonsen, 2011; Grosskopf, 2010; Kloess, et al., 2015; Webster et al., 2012). Ultimately it appears that there are different motivations influencing the goal-directed behaviour of grooming and it thus follows that differences in the process of grooming may be observed depending on the motive of the groomer (Webster et al., 2012; O’Connell, 2003).

Shannon (2008) obtained a relatively large number of police reports regarding offences relating to online sexual grooming ($n=315$). They found that offenders who only interacted with their victim online ($n=179$) were noted to frequently introduce sexual themes and content, including victim/offender exposure via web cameras. Whereas, for offenders where there was strong evidence of offline CSA following Internet-mediated communication ($n=69$), strategies included bribes such as promising work as a model and offering payment for sexual contact and finally, and more in line with the Luring Communications Model, the development of rapport and an exclusive relationship.

Through exploration and analysis of conviction information, police records and mental health evaluation for those convicted of Internet-initiated sexual offences, Briggs et al. (2011) similarly found two distinct groups of offenders, differentiated by their offending motivation: sexual gratification via online interactions and physical contact CSA. Briggs et al. (2011) labelled these two groups ‘fantasy-driven’ and ‘contact-driven’ offenders. Fantasy-driven offenders are hypothesised to be predominantly motivated by sexual gratification, whereas contact-driven offenders are predominantly motivated to have physical sexual contact with a child (Kloess et al., 2015). This is not to say that fantasy-driven offenders will not arrange a physical meeting with their victim, rather that if they do then this may be to enhance their

online behaviour, for example by giving the victim gifts or cameras that may aid the groomer's fantasies and ultimately to the offender achieving sexual gratification/ meet their target offence goal (Kloess et al., 2015). Hence the goal for fantasy-driven offenders may be to engage in cybersex or fantasy rehearsal using a written dialogue.

Briggs et al. (2011) found that the median duration of time spent engaging with the victim was two days for contact-driven offenders and five days for fantasy-driven offenders. Contact-driven offenders engaged in fewer online sexual behaviours than the fantasy-driven offenders who in contrast engaged in a number of different cybersex behaviours such as exposing themselves via a web-camera and engaging in sexually explicit written narratives. Contact-driven offenders were often younger, less educated or unemployed and less likely to have been married than fantasy-driven offenders. With regards to mental health problems, fantasy-driven offenders were more likely to be diagnosed with a paraphilia and narcissistic personality disorder than the contact-driven offenders.

With regards to data obtained from online sexual grooming transcripts, Marcum (2007) also found that not all of the online sexual groomers were motivated to pursue a physical meeting. DeHart et al. (2017) also identified offenders that solely engaged in cybersexual interaction, those who scheduled offline meetings without engaging in cybersexual interactions and those who engaged in both scheduling meetings and engaging in cybersexual interactions. In McLaughlin's (2004) analysis of online groomer transcripts different models of grooming could be identified for different groomers, suggesting different offender motivations steering the strategies and approaches utilised by the different online sexual groomers. The models of sexual grooming proposed by Diermenijan (2002) were identified in McLaughlin's (2004) sample. Models include the 'direct sexual model' where the offender presents in a more sexualised manner and capitalises on the victim's sexual curiosity; and the 'trust-based seduction model' whereby the focus is on gaining the victim's trust, promoting secrets, victim isolation and gradual seduction and persuasion to engage in future sexual acts (Diermenijan, 2002). At face value, the 'direct sexual model' could be associated more with fantasy-driven offenders, whereas contact-driven offenders may employ strategies more akin to the 'trust-based seduction model'.

Webster et al. (2012) further distinguished between different types of online groomer and found three different modus operandi: 'intimacy-seeking', 'hypersexual' and 'adaptable'. 'Hypersexual' offenders can be likened to fantasy-driven offenders in that they may not be motivated to arrange a physical meeting with their victim, rather they are highly sexualised and motivated by sexual gratification (Kloess et al., 2015; Webster et al., 2012). 'Intimacy-

seeking' offenders often hold the belief that they are in a consenting and loving relationship with the victim. 'Adaptable' offenders appear to be more flexible in their interaction approach depending on the victim that they are communicating with. Like fantasy-driven offenders, they may not necessarily be motivated by physical sexual contact with the victim (Kloess et al., 2015; Webster et al., 2012).

Some research has found that fantasy-driven offenders communicate with their victim for a significantly longer time than contact driven offenders (Briggs et al., 2011; Wolak et al., 2004). This suggests that contact-driven offenders use the process of grooming instrumentally to achieve an end goal whereas fantasy-driven offenders are satisfied by the grooming process itself (Whittle, Hamilton-Giachritsis, Beech & Collings, 2013). In contrast, Marcum (2007) found that the fantasy-driven offenders in their sample were less patient than the contact-driven groomers and appeared more highly sexualised. This may possibly be explained by the 'hit and run' tactic described by O'Connell (2003). The varying sample sizes and methods of data collection may account for some of the discrepancies in findings regarding the length of the interaction between contact-driven versus fantasy-driven offenders and their victims, however the length of the interaction can also be influenced by a number of other factors that have not yet been identified. This therefore requires further exploration.

Aim and purpose of research

Despite the prevalence and harmful consequences of online sexual grooming, research regarding online sexual grooming has remained sparse to date in comparison to research into face-to-face offline grooming (Martellozzo, 2013). Furthermore, much of the research regarding the process of grooming relies on self-reports from offenders and victims and secondary data from police files. The limitations of such methods are discussed in Chapter 3. Using transcript data has benefits in presenting information about offender *modus operandi* and the naturally occurring interaction provided by the groomer within the grooming process that cannot be obtained accurately from interview data. Therefore, it was considered beneficial to analyse direct offender-victim interaction transcripts, not only to validate self-report data, but also to provide an in-depth understanding of latent themes within the grooming interaction (Whittle, Hamilton-Giachritsis & Beech, 2015). Additionally, exploring ways to effectively analyse and detect patterns from grooming transcripts will have significant practical implications for law enforcement investigations with regards to informing practices in screening and investigating live online communications. Briggs et al.

(2011) and Kloess et al. (2015) further identified a need for additional research to explore different offender typologies including exploring factors that affect the progression of online sexual grooming interactions that may escalate to offline contact.

Studies to date that have directly analysed groomer-victim/decoy online interaction transcripts have been restricted by small sample sizes and variable methodological comparison groups. Recently studies with larger sample sizes such as Winters Kaylor and Jeglic (2017) and Drouin et al. (2017) have been published however these are still very few in number. Therefore, there is clear scope to develop an enhanced understanding of the grooming strategies employed by online sexual groomers and to explore how this may be influenced by the offender's motivation by directly analysing offender narratives within offender-victim interactions.

For the purpose of this research, the term 'fantasy-driven offenders' is used to describe offenders who engaged in cyber-sexual abuse with a victim on an online chat platform but did not arrange or turn up to a physical meeting. The term 'contact-driven offenders' refers to offenders who showed up to meet a victim for physical sexual abuse. Kloess et al. (2015) summarise cybersexual acts as including exposure of genitals and sexualized body parts via a web camera, engaging in masturbatory behaviour, exchanging picture of genitalia, recording and keeping sexual acts via a web camera and engaging in sexually explicit conversations. The term contact-driven offender in this study refers to offenders who have solicited children online and may have engaged in cybersexual behaviours but also attempted to meet with the victim to engage in further sexual abuse offline.

The current study aimed to compare how grooming strategies are utilised by fantasy-driven and contact-driven offenders in a large sample utilising an automated computer analysis programme. Specifically, it was an exploratory study addressing the following research questions:

- *Research Question 1:* What narrative themes can be identified from transcript data using an automated computer analysis programme?
- *Research Question 2:* Are there significant differences in the narrative themes employed by contact-driven versus fantasy-driven offenders?
- *Research Question 3:* Can narrative themes predict offender group membership?

It was hypothesised that contact-driven and fantasy-driven online sexual offenders will differ with regards to the narrative themes present in their online interactions.

Methodology

Participants/sample

There was no live participation in the study as the data was obtained from historic online interaction transcripts. In order to protect the identity of victims of online sexual grooming, the victim interactants in the transcripts were undercover decoys posing as children – this also allowed for access to a larger amount of data.

It is acknowledged that undercover decoy responses may not fully reflect those of a child and that the flow of dialogue may not be truly representative of an authentic grooming interaction. However, it is felt that whilst the groomer may not be interacting in the same way as they would with a true victim due to the impact of the decoy's responses, the groomer's motivation is likely to be unaffected. However, it is possible that decoy victims will present as more compliant in order to secure a conviction and thus in this sample of offenders fewer coercive or forceful grooming strategies may be observed compared to research that has successfully obtained true offender-victim interactions. It should be highlighted here that these limitations in the sample and the impact of such limitations are explicitly considered in the discussion. Nevertheless, for the purpose of statistically analysing data it was considered that the benefits of obtaining a large sample size outweighed the limitations of using decoy data with regards to the specific research aims of the current study.

The study employed a purposive sampling method to select a sample directly from the phenomenon of interest (Palinkas, Horwitz, Green, Wisdom, Duan et al., 2013). The offender-decoy transcripts were sourced from the Perverted Justice Foundation (PJF; www.perverted-justice.com) using a theoretical sampling technique (Ten Have, 2011). Permission to use the archived transcript data was obtained via email correspondence with PJF. PJF is one of the largest United States (US) civilian volunteer watch groups and is supported by the Department of Justice in the US to aid the conviction of online sexual grooming (Perverted Justice, 2015). Decoy training is conducted by instructors who have a wealth of experience in conducting Internet child sexual abuse investigations (Perverted Justice, 2015). To avoid issues of entrapment, decoys are instructed not to initiate communications of a sexual nature, or initiate discussions about meeting offline and they must wait to be approached by an offender.

With regards to the sample size, an a priori power calculation was employed to determine the optimum sample number to provide adequate power (Faul, Erdfelder, Buchner & Lang, 2009; Faul, Erdfelder, Lang & Buchner, 2007). The calculation was based on a

strong effect size, a two-tailed hypothesis and a statistical tests design to test the difference between two independent means. The results of the power analysis using G*Power (G*Power, 2015) suggested that a total of 84 transcripts (42 in each condition) would be required. This number was increased to 75 fantasy-driven and 75 contact-driven transcripts to ensure that the sample was large enough for there to be an adequate sample to variable ratio when analysing the data (Dancey & Reidy, 2007, pp458).

Given that it has been documented that female sex offenders are qualitatively different to male sex offenders (Sandler & Freeman, 2007; Vandiver & Kercher, 2004), the sample was restricted to male offenders. Furthermore, previous grooming research and theories largely derive from male offender samples. It is therefore possible that much of the literature reviewed to form the current's studies aims may not be applicable to the female offender population. It has additionally been noted that the gender of the victim or pseudo-victim may impact upon the narrative style of the interaction (van Gijn-Grosvenor & Lamb, 2016) with offenders. Therefore, all transcripts in the study utilised a decoy with a female persona.

The contact-driven interactions took place between 2005 and 2014. The offenders were all male aged 19-63 years old ($M=34.47$, $SD=11.67$). The decoys presented as females aged between 12-15 years old ($M=13.67$, $SD=1.08$). The fantasy-driven interactions took place between 2005 and 2015. The offenders were all male aged 21-66 years old ($M=36.23$, $SD=12.31$). The decoys presented as females aged between 12-15 years old ($M=13.44$, $SD=0.58$). Validity of the demographic information provided by PJF has been reported by van Gijn-Grosvenor & Lamb (2016), who checked the validity of this information by conducting Internet based searches on the offenders to verify this information. The Perverted Justice database is a US based archive and thus the sample comprised of US offenders convicted under US legislation (US House of representatives, 2015).

Design

The study employed a quantitative design, utilising frequency data to assess differences in the grooming strategies employed by contact-driven and fantasy-driven offenders. The study employed a phenomenological design observing a phenomenon over a cross-sectional timeframe (Stangor, 2007). The design also incorporates an observational design in that no control sample was employed and no specific variables are being manipulated (Savin-Baden & Major, 2013). The sample is divided into a contact-driven group and a fantasy-driven group based upon examination of available conviction and

descriptive data provided by PJF. The study thus employed an independent groups design (Elmes, Kantowitz & Roediger, 2006). Whilst the conviction data was also utilised to aid decision making about group membership, due to the plea bargaining system in the US it was deemed inappropriate to base group membership solely on conviction data. Group division was therefore determined by whether or not the offender showed up to meet the pseudo-victim. This information was obtained from the descriptive information published by PJF alongside the conviction data.

Procedure

The Perverted Justice full archive was scanned for transcripts in the order in which the transcripts were presented on the website. Transcripts were selected based on six criteria:

1. The offender was male
2. The decoy was posing as 12-15 year old female
3. There was adequate conviction and descriptive data to make a judgement on whether the offender attempted to meet their victim (contact-driven) or not (fantasy-driven)
4. There was adequate information about the dates on which the interaction took place
5. There was no third-party involvement i.e. more than one offender
6. The full transcript was available

The detail and quality of the descriptive information varied, therefore the inter-rater reliability of the group membership for 20% of the transcripts were assessed. The second rater was given the conviction and descriptive information for the cases but did not have access to the transcripts. The proportion of agreement was calculated as a percentage of overlap. This was calculated to be 83.3%. This met the 80% threshold for minimum acceptable level of inter-rater agreement as stipulated by McHugh (2012) with a kappa value of .667 ($k=.667$, $p<.001$). This is a substantial kappa value (Landis & Koch, 1977). Discussions were held regarding the five cases that differed. Difference of opinion in all cases was due to differences in interpreting the intent to meet in cases where the offender did not turn up to an arranged meeting. It was decided that not turning up regardless of an arranged meet would be classed as a fantasy-driven contact and that the planning of a meeting may constitute part of the fantasy for the offender. As such, only the arrival of an offender to a planned meeting was considered a contact-driven offence. Following this clarification with regard to the classification system there was 100% agreement on the sample transcripts. The data collection procedure used a saturation process (Guest, Bunce & Johnson, 2006) until the sample size of $n=75$ for each offender group was met.

The data transcripts were prepared for analysis using a bespoke macro that removed narratives from the decoy and then removed the usernames of the offender and numbered the resulting offender messages. The decoy narrative was removed as the study was concerned with only the narrative patterns of the offender given that the decoy may not truly reflect an adolescent victim's communicative style and characteristics. The date, or range of dates, during which the narrative was recorded (from the first to the last message sent by the offender) and the number of messages sent by the offender were recorded. Elliott (2014) noted that using computer programmes to analyse grooming interaction transcripts may be a compromised process in that any spelling mistakes in the transcript might distort the analysis. Some studies using automated programmes to analyse grooming transcripts have 'cleaned' their data to correct common misspellings and netspeak/slang (*e.g.* Drouin, et al., 2017), however it was decided that the data in this study would not be cleaned. This decision was made due to three reasons:

1. Not all spelling errors and instances of netspeak are clear-cut and the researcher's social environment and individual characteristics may have biased the interpretation. For example, 'LOL' can be interpreted as 'laugh out loud' and 'lots of love'.
2. A key aim of the study was to explore the utility of using an automated programme to analyse the grooming interaction with the view to evaluating the future potential benefits of designing screening programmes that can analyse grooming transcripts in real-time as part of law enforcement investigations. Such programmes would need to be able to cope with 'unclean' data.
3. The utility of automated computer programmes have already been demonstrated with 'clean' data.

Following the preparation of the data, it was subjected to a Linguistic Inquiry Word Count (LIWC) analysis.

Measure

LIWC analysis provides quantitative information regarding the frequency of use of words compared to the total word count of the transcript (Tausczik & Pennebaker, 2010). LIWC works by reading a text and counting the percentage of words contained within the word dictionary (LIWC, 2015). The LIWC2015 master dictionary is composed of approximately 6,400 words, word stems, and selected emoticons (LIWC, 2015). LIWC was developed by researchers interested in the study of social, clinical, health and cognitive psychology (Tausczik & Pennebaker, 2010). The programme is appropriate to use as part of

psychological research given that it was created to help capture social and psychological states. LIWC2015 assesses a number of different linguistic and psychological concepts:

- Four summary language categories relating to: analytic language, clout authenticity and emotional tone
- Three descriptor categories: words per sentence, percentage of words matching dictionary words, percentage of words longer than six letters
- Linguistic and punctuation categories: pronouns, verbs etc.
- Psychological construct categories relating to affect, cognition, biological processes and drives, personal concerns, relativity and social concepts
- Personal concern categories
- Informal language categories

(Pennebaker, Boyd, Jordan & Blackburn, 2015; Pennebaker, Booth, Boyd & Francis, 2015)

The word dictionaries were formed from psychological scales, the English dictionary and thesaurus by a number of judges who selected words' individual and group contexts. Words were then rated for goodness of fit before being analysed for presence in a number of different written texts (blogs, spoken language studies, social media, novels, written work from students and other sources). Words that did not occur in these texts were removed and additional high-frequency words were added to the dictionaries. The dictionaries then underwent analysis to determine their psychometric properties followed by a refinement stage (Pennebaker, Booth, Boyd & Francis, 2015). Unlike previous LIWC dictionaries, LIWC2015 can analyse short phrases, not just words in isolation.

Pennebaker, Boyd, Jordan & Blackburn (2015) have published psychometric properties of the LIWC2015. They noted that given the nature of natural occurring language, repetition of an idea or theme would be less frequent than in questionnaires and psychological self-report measures. As such, they argue that lower alpha coefficients for the categories should be expected. They therefore used a Spearman-Brown formula to analyse the internal consistency, arguing that this corrected method of assessment gives a more accurate picture of internal consistency (Brown, 1910; Spearman, 1910). Internal consistency was assessed using a sample of 181,000 texts from multiple sources. Spearman-Brown scores ranged from .27 for filler words to .93 for work related words. Further considerations of the reliability of the LIWC2015 are presented in the discussion.

With regards to validity, a large number of studies have validated the LIWC categories across a wide range of psychology fields (Tausczik and Pennebaker, 2010). In the

field of research exploring the phenomenon of online sexual grooming, Black et al., (2015), Drouin et al., (2017), Gupta, Kumaraguru and Sureka (2012) and Rahman Miah Yearwood and Kulkarni (2011) have all successfully utilized LIWC to produce informative findings about the strategies used in online sexual grooming, how offenders with a male victim preference differ to offenders with a female victim preference and the utility of LIWC in identifying grooming texts.

Black et al. (2015) and Drouin et al. (2017) selected predefined categories from the LIWC dictionary using an inductive process to assess specific Research Questions based on the existing literature. Drouin et al. (2017) only assessed clout (confidence and expertise) and sexual words whilst Black et al. (2015) picked word categories that they assessed to fit with O'Connell's (2003) stages of online sexual grooming. Gupta et al. (2012) demonstrated that the LIWC2015 word categories could effectively predict associated grooming stages outlined in O'Connell's (2003) model of grooming using a deductive process. This study uses a similar deductive method by assessing the presence of the psychological word categories of LIWC and then statistically analysing themes and relationships amongst the variables to determine higher order categories to assess harmony of identified grooming strategies with grooming theories (rather than predefining the categories based on previous research). The only categories that were removed from the analysis were the descriptor, linguistic and punctuation categories as it was evaluated that there was little, if any, semantic quality to these categories that would inform the current study's aims. Furthermore, the overarching thematic categories from the psychological constructs were removed leaving only the individual categories within each thematic construct. The purpose of this was to reduce unnecessary overlap in the concepts being analysed and reduce the likelihood of multicollinearity.

In total, 48 categories from the LIWC2015 dictionary were selected for analysis. A summary of the categories used in the current study is presented in Table 6 alongside the psychometric properties of the word dictionaries. There is no psychometric information published by Pennebaker and colleagues (2015) regarding the summary variables in their analysis of the psychometric properties of LIWC2015, however they report that these variables were derived from empirical evidence and they provide a number of citations regarding the source of these variables.

Table 6. Descriptive and psychometric properties of LIWC2015

Construct	Category	Description	Examples	Spearman-Brown
Summary Language Variables	analytic	high levels reflect formal/logical language, low levels reflect informal/personal, 'here and now' language	n/a	n/a
	clout	high levels reflect confidence and expertise and low levels reflect humbleness and anxiousness	n/a	n/a
	authentic	high levels reflect honesty and disclosure and low levels reflect guardedness	n/a	n/a
	tone	level of emotional positivity	n/a	n/a
Affect	positive emotion	words relating to positive emotions	love, sweet, beautiful	.64
	negative emotion	words relating to negative emotions	annoying, upset, nasty	.55
	anxiety	words relating to anxiety	afraid, worried, fearful	.73
	anger	words relating to anger	hate, dumb, fight	.53
	sad	words relating to sadness	crying, lose, sadly	.70
Social	family	references to different family members	brother, dad, mom	.88
	friend	words relating to friendship	buddy, bestie, mate	.60
	female	female nouns and pronouns	girl, her, mom	.87
	male	male nouns and pronouns	boy, his, dad	.87
Cognitive Processes	insight	words relating to understanding	admit, think, know	.84
	causal	words relating to causation	consequence, because, effect	.67
	discrepancy	words suggesting a lack of compatibility with the present and the desired	should, would, hopefully	.76
	tentative	words that suggest tentatively	unsure, maybe, depending	.83
	certainty	words that suggest certainty	definite, always, confident	.73
	differentiation	words that distinguish between ideas and concepts	hasn't, but, didn't	.83
Perceptual Processes	see	words relating to seeing	appearance, look, photos	.84
	hear	words relating to hearing	listen, hearing, ring	.69

	feel	words relating to feeling	feels, touch, rub	.65
Biological Processes	body	references to body parts and bodily processes	thigh, hands, lip	.87
	health	words relating to health	sick, pain, ache	.37
	sexual	words relating to sex and sexual behaviour	horny, foreplay, condoms	.78
	ingest	words relating to eating and drinking	dish, eat, drink	.92
Drives	affiliation	sense of involvement, belonging, references to others	relationship, friend, share	.80
	achievement	references to success or failure	win, earn, gain	.81
	power	dominance and status	superior, permit, teach	.76
	reward	reference to rewards, incentives, goals and approach	take, prize, benefit	.69
	risk	reference to danger or concerns	danger, doubt, careful	.68
Time Orientation	past focus	past-tense verbs and references to past events/times	ago, did, talked	.64
	present focus	present-tense verbs and references to present events/times	today, is, now	.66
	future focus	future-tense verbs and references to future events/times	expect, will, soon	.68
Relativity	motion	words relating to motion/movement	arrive, drive, coming	.77
	space	words related to space	away, together, maps	.83
	time	words related to time	end, until, due	.79
Personal Concerns	work	words relating to work/employment	job, desk, education	.93
	leisure	words relating to leisure activities	fun, shop, movie	.86
	home	words relating to home/house	garden, home, family	.83
	money	words relating to money/finances	spend, cash, fund	.9
	religion	words relating to religion	god, church, pray	.91
	death	words relating to death	bury, die, kill	.79
Informal Language	swear	swear words	fuck, damn, shit	.83
	netspeak	words frequently used in text speak and social media, includes emoticons	btw, lol, plz	.82
	assent	the expression of approval or agreement	agree, cool, yes	.39
	nonfluences	non-words	er, hm, umm	.69
	filler words	meaningless' words	ohwell, youknow, dunno	.27

Analysis

Research Question 1: What narrative themes can be identified from transcript data using an automated computer analysis programme?

This question was explored by deducing the outcome of the LIWC analysis using a Principle Components Analysis (PCA) method. A PCA method was utilised since PCA has been described as an exploratory method that aims to reduce a large set of variables (Dancey & Reidy, 2007). Furthermore, PCA allows for further analysis of the resulting data thus enabling Research Question 3 to be explored. The sample size of $n=150$ was over 3x the number of LIWC variables ($n=48$) and was thus deemed a sufficient sample size for the analyses to be conducted (personal correspondence with Dr Bishopp, University of Birmingham, March 2017). A Bartlett Test of Sphericity was administered to assess the correlation matrix to ascertain the whether the variables could be reduced to a smaller number of factors. A Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was also administered.

An initial PCA analysis using both varimax and oblimin rotations based on Eigen values greater than 1 produced 15 factors explaining 73.75% of the variance. Some of the factors appeared to map roughly onto the processes described in Elliott's (2015) Self-Regulation Model of online sexual grooming and themes identified in Chapter 3. However, some of the factors did not make theoretical sense and some factors had low loadings. An iterative process of specifying an increasingly smaller number of factors was employed until a set of theoretically interpretable factors was obtained. Factor loading was based on correlations >0.4 to ensure at least moderate strength correlations. Although it is suggested that resulting factors should aim to explain 75% of the variance (Dancey & Reidy, 2007), given that the current study was an exploratory analysis this was not an essential requirement of the analysis. Furthermore, it is not the purpose of the LIWC to establish patterns between variables and therefore clear patterns were not expected. The establishment of factors that were interpretable and theoretical harmonious was prioritised. Nevertheless, the level of variance explained was closely monitored to ensure that around half of the variance was accounted for by the factors. Finally, the recommendation there should be at least three variables per factor was considered during the iterative process of factor reduction.

Research Question 2: Are there significant differences in the narrative themes employed by contract-driven versus fantasy-driven offenders?

The Kolmogorov-Smirnov test was used to assess whether the data for duration and length of the interaction and selected LIWC categories were normally distributed. Levene's test was used to assess whether the assumption of homogeneity was met. The outcome of these tests determined whether parametric or non-parametric independent sample t-tests (non-parametric equivalent: Mann Whitney U test) (Elmes et al., 2006) were used to identify the presence of any statistically significant differences in LIWC variable frequency for contact-driven versus fantasy-driven groomers. A similar process of analysis was also conducted for the narrative themes identified by the factor analysis.

Research Question 3: Can narrative themes predict offender group membership?

The themes obtained from the PCA analysis were utilised as scales for a binomial logistic regression analysis to explore whether any of the narrative themes could predict offender group membership, namely contact-driven or fantasy-driven offender groups. The assumptions for binomial regression were met in that the outcome variable was dichotomous (contact-driven or fantasy-driven) and the predictor variables were continuous and did not demonstrate multicollinearity with one another (see results for Research Question 1 for more detail). Furthermore, the cases that the data was drawn from were not related.

Ethical considerations

Due to ethical issues, it is an extremely difficult and lengthy process to obtain police records of offender-victim transcripts (Rahman Miah et al., 2011). Therefore, the PJF was approached to obtain consent to utilise their archival database of historical grooming interactions. The use of decoy data has been viewed with caution (Williams et al., 2013). There is an on-going debate regarding the use of undercover decoys and the potential enticement and entrapment of offenders (Wright, 2014). Nevertheless, the use of undercover operations has been sanctioned by law enforcement services (McLaughlin, 2004). Specific measures are taken to avoid entrapment such requiring decoys to wait to be approached online rather than initiating communication and waiting for the offender to initiate sexual communication (Perverved Justice, 2015). Furthermore, whilst offenders appear to be aware of the use of decoys in undercover operations, decoys appear to accurately reflect the presentation of the target group (Black et al., 2015). However, it should be noted that whilst decoys do not initiate interactions, they do present as the 'perfect' victim in that they are

compliant with the grooming process (McLaughlin, 2004). Furthermore, there may be unconscious biases held by the decoys influencing their motivation to ‘catch’ offenders (Marcum, 2007). For example, approximately 50% of the volunteers at the Perverted Justice Foundation may have experienced abuse (Marcum, 2007; Perverted Justice Foundation, 2015) and may thus be more encouraging or motivationally aggressive in their interaction with potential online offenders.

It should be noted that the data was not ‘truly’ anonymous to the researcher and the offenders whose transcripts are used in the current study are not aware of their involvement in the study. As the transcripts are available online, the data is not confidential and is available to the general public. Nevertheless, steps were taken to remove identifiable information with regards to names, usernames and locations (apart from the country where the interaction took place). Also, only extracts pertinent to illustrating results are presented in the findings of this study thus minimising the presence of any other contextual discourse.

Extracts from the transcripts are presented in the results section of this chapter in order to evidence decisions about the labelling of narrative themes. A warning is given to the reader to inform them that explicit content is about to be presented and the reader is encouraged to take a view of whether to read these extracts, bearing in mind the phenomenon of interest and the graphic and explicit nature of these interactions. The extracts are purposefully kept brief to reduce the exposure of the reader to these explicit interactions.

Ethical approval was received from the University of Birmingham to carry out the research study.

Treatment of data

As the content of the data transcripts contained graphic sexual and offending content, the transcripts obtained by offender-decoy interactions were stored electronically on a secure RDS folder at the University of Birmingham. Only the researcher and principle investigator had access to the RDS folder. As data was narrative in nature and there was no image data except for headshots of the offender, (which were not utilised in the current study) there was no breach of UK legislation with regards to storing sensitive/graphic information, particularly given that the information has already been used to secure a conviction and has been made public by a reputable organisation/foundation.

These records will be available for 10 years before being deleted in accordance with the University Guidelines for research data storage.

Results

Research Question 1: What narrative themes can be identified from transcript data using an automated computer analysis programme?

Firstly, the factorability of the 48 LIWC variables was examined. The diagonals on the anti-image correlation matrix ranged from .304 (relatively poor for factor, analysis yet moderate correlation) to .77 (good correlation). 37 of the 48 variables correlated with a moderate strength (.3), with at least one of the other variables suggesting factorability. Given that LIWC2015 is not designed to analyse correlating constructs and the current study did not use an inductive process of selecting variables based on theoretical concepts, the findings of relatively poor (yet present) anti-image correlations and 37 variables having potential factorability was deemed sufficient to continue with the analysis. Furthermore 38 of the variables had communalities above .3, confirming that most of the LIWC variables shared some variance with other variables.

A KMO test demonstrated a sampling adequacy of .55. This meets the accepted cut-off for acceptability of .5, as suggested by Kaiser (1974). Furthermore, the Bartlett's Test of Sphericity was significant ($\chi^2(1128)=4418.697$, $p<.001$), suggesting that there are relationships in the data to be analysed.

Using a PCA method with varimax rotations, six factors were deduced from the LIWC analysis accounting for 46.30% of the variance. This solution was preferred because of the theoretical harmony deduced from this solution and the adequate number of variables loading onto each factor. Furthermore, each factor described at least 5% of the variance and had a high Eigen value. It was noted that an exploratory seven-factor analysis had high Eigen values for all factors but that the additional factor only accounted for a small percentage of the variance (<5%) and the factors had less theoretical harmony than the six-factor solution. The varimax solution was utilised since it was more interpretable with regards to the phenomenon of interest than the oblimin rotated solution. 40 of the 48 LIWC variables analysed loaded onto one of the factors. Variables that did not load onto a simple factor structure were 'sad', 'death', 'family', 'leisure', 'filler words', 'see', 'ingest' and 'friend'. These variables were therefore eliminated.

The factor labels were designed through drawing links between the variables loading onto the factor and viewing the presence of the loading variables in transcripts using the colour code function of the LIWC2015 programme. This allows for selected variables (for a

given factor) to be highlighted in the transcripts. The labels were then finalised following a discussion between the researcher and the principle investigator. A further discussion was held with a layperson and a practitioner experienced in working with sex offenders regarding the labelling of factors in line with the PCA findings. Table 7 presents the six factors and the loading variables that had a correlation of at least .4. The smaller values of cross-loading variables are italicised. Some researchers remove the smaller value of a cross-loading item from the secondary factor but, as both the primary and secondary loadings are above the .4 cut-off in the current study, both loadings were retained (Matsunaga, 2010). A further reason for retaining the cross-loading items was that an exploratory test for multicollinearity suggested that even when the cross-loading items were retained, the factors were not affected by multicollinearity. This conclusion was reached as there was a small condition index when assessing collinearity diagnostics in SPSS, with no strong or even moderate correlations between the factors on the correlation matrix and VIF scores for all the factors equalling 1 which lies between the range of 1-15, suggesting that the factors were not affected by multicollinearity. The six factors were saved as regression scales using SPSS which computes composites based on the results of the factor analysis for further use in addressing later research questions.

Table 7. PCA six factor solution using a varimax rotation

<u>Variables</u>	<u>Factors</u>					
	Sexual Desensitisation	Risk Awareness	Planning	Positive Incentivisation	Disinhibition	Rapport
sexual	.86					
body	.85					
swear	.73				.48	
feel	.59					
discrepancy	.53	.45				
hear	-.51					
work	-.44					
anxiety	-.42					
power	.42					
analytic		-.75				
insight		.71				
causal		.58				
risk		.58				
present focused		.55				
authentic			.82			
time			.74			
space			.71			
motion			.61			
achievement			.44			
home			.44			
health			.44			
tentative				.68		
past focused				.59		
differentiation		.45		.59		
female				.52		
reward				.51		
money				.51		
future focused			.43	-.46		
certainty				.45		
male				.44		
negative emotion					.76	
anger	.43				.74	
clout					-.69	
religion					.59	
netspeak					.48	
affiliation					-.43	
positive emotion						.81
assent						.72
tone						.69
nonfluences						.62
<u>Initial Eigen value</u>	5.33	4.36	3.73	3.27	2.94	2.60
<u>rotated loadings:</u>						
<u>Variance accounted</u>						
<u>for (%)</u>	9.27	8.16	7.60	7.58	7.17	6.52

The remaining section of this research question will present each of the six PCA factors with example extracts from the transcript data. The extracts from the transcripts are kept brief in an attempt to reduce the reader's exposure to the graphic and explicit nature of the narratives. The extracts are presented to demonstrate how the LIWC2015 identifies words in text for a given word category. These words are highlighted in reference to the concept/variable being discussed. A warning of upcoming explicit material will be given before each extract containing explicit material is presented and general warning regarding the presence of transcripts extracts is given every time an extract is presented. Readers are encouraged to not read the extracts in the text boxes if they believe they may be adversely affected by the content, bearing in mind the phenomenon of interest.

Factor 1: Sexual desensitisation

The first factor obtained from the PCA included the positive variables: sexual, body, swear, feel, discrepancy, anger and power. This factor accounted for the highest amount of variance amongst the factor, accounting for 9.27% of the variance.

The variables relating to 'feel' and 'body' have clear links with sexual communication:

WARNING: explicit content

WARNING: transcript extract

Extract 1

*"i can imagine how i wuld be **caressing** your **body** while we kiss"*

Swear words are also often synonymous with sexual words and slang words for sexual behaviour, they can also be used aggressively in the context of sexual language. The finding of the 'anger' variable loading onto this factor suggests some dominance and force in the use of the sexual language. In the extract below the highlighted words illustrate swear words and anger words that are being used in the context of sexual conversation rather than the expression of angry affect, however it is noted that there is an aggressive quality to the extract given the selection of the words to describe sexual acts and body parts and the dominant nature of the interaction:

WARNING: explicit content

WARNING: transcript extract

Extract 2

*"u should finger ur **pussy** as much as possible before u come over here so it wont **hurt** as much when i **fuck** u"*

When reviewing the transcripts, 'power' words were found to occur frequently in the context of sexual narratives. An explicit example of this is presented below:

WARNING: explicit content

WARNING: transcript extract

Extract 3

*"will you be my **slave**"
 "i wont whip you"
 "just **punish** you a little bit here and there"*

Power words such as 'punish' are also likely flagged by the 'anger' category which may also explain the loading of the 'anger' variable to this item. The 'discrepancy' variable suggests planning or fantasy depiction. For example, in the extract below the offender is fantasising about a potential future act:

WARNING: explicit content

WARNING: transcript extract

Extract 4

*"i **could** put my hand up ur skirt and rub and finger as we walk"*

Negative loadings are difficult to interpret ('hear', 'work', 'anxiety'), however they can be interpreted as negative statements (Dancey & Reidy, 2007). For example, a lack of anxiety makes sense theoretically with the dominant element of this theme. Themes about 'work' and 'hearing' are more difficult to interpret, however it may be that offenders who are more work conscious may be less anti-social and thus less likely to engage in sexual communication. For example, the extract below comes from an offender who often claimed to be busy at work, using that as a reason for not meeting the pseudo- victim or not speaking to the pseudo-victim. This offender did show at a sting to meet the victim but, compared to other transcripts, there were less sexual references in the written text:

WARNING: transcript extract

Extract 5

“No but hope soon”
 “Because of my *work*”
 “Cant give u exact day”

The ‘hear’ variable is even more difficult to interpret, however it may be that offenders who were motivated to hear their victim were more motivated to engage in sexual communication via this medium than the online medium. An example of this premise is presented below:

WARNING: explicit content

WARNING: transcript extract

Extract 6

“will ya le me ...never mind”
 “little perve in me ill stop”
 “call me ill tell ya”
 “DONT GIVE MY # OUT”
 “call me”
 ...
 “love to *hear* your *voice*”

This offender had a high number of ‘hear’ variables in their narrative but a relatively low number of ‘sexual’ words. The extract demonstrates that he wanted to say something that was likely sexual in nature, but he was motivated to disclose this via a telephone conversation rather than typing online.

With regards to the theoretical harmony of this factor, the disclosure phase of Elliott’s (2015) Self-Regulation Model of online sexual grooming primarily concerns desensitising the victim to sexual content and introducing the target behaviour. This factor thus makes theoretical sense in line with the disclosure phase of this model, particularly with regards to desensitising the victim to sexual content.

Factor 2: Risk awareness

The second factor accounted for 8.16% of the variance. It had positive loadings for ‘insight’, ‘causal’, ‘risk’, ‘discrepancy’, and ‘present focussed’ and there was a negative loading for analytic language. Pennebaker and colleagues (2015) describe a low level of analytic language as reflecting informal ‘here and now’ language and thus this make sense to

load with ‘present focused’ variables. Given the ‘here and now’ orientation of the items and the ‘insight’ and ‘causal’ items reflecting concepts understanding, awareness and causation, the overall evaluation of the narrative theme represented by this factor was that of risk awareness. This relates to the offender’s understanding of the risk and potential consequences or their current behaviour. Risk in this context relates to being detected and understanding that the behaviour they are engaging is wrong. For example:

WARNING: transcript extract

Extract 7

“well i hv to be *careful* what i say to u as ur so young and i cnat say thign si would to some oen older lol”

The extract below demonstrates the link between ‘risk’ ‘insight’ and ‘causal’ in the present tense:

WARNING: transcript extract

Extract 8

“WE WILL *HAVE* 2 *KEEP* THIS A *SECRET* U KNOW”
 “<--*DONT* WANNA *GO* 2 JAIL[/b”
 “omg i *dont* wanna *get* in trubble either!”
 “OK THEN”
 “ITS GOTA *BE* OUR *SECRET*”

In this extract “*secret*” relates to risk and the remaining words are causal. Interestingly, due to spelling errors, the LIWC2015 did not pick up “*trubble*” (trouble) and “*jail[/b*” (jail) as risk words. Nevertheless, despite a high number of spelling errors, the LIWC2015 was still able to make theoretically sensible links between variables relating to awareness of current risk. Discrepancy is apparent in this extract, as the offender does not want to go to jail yet wants to continue with the interaction.

With regards to the theoretical harmony of this factor, security processes are described in the potentiality phase of Elliott’s (2015) Self-Regulation Model of online sexual grooming.

Factor 3: Planning

The third factor accounted for 7.6% of the variance. All of the variables loaded positively onto the factor: ‘authentic’, ‘time’, ‘space’, ‘motion’, ‘achievement’, ‘home’,

‘health’ and ‘future focused’. Through reviewing the variable titles, it appears that the variables may relate to the arrangement of a future physical meeting, particularly with regards to the variables ‘time’, ‘motion’, ‘space’ and ‘home’. These variables are illustrated in the following extracts from a transcript:

WARNING: transcript extract

Extract 9

“and hopefully we can meet *before* your mom *goes away*.. maybe *on* one of the *weekends*.. meet *at* the mall or something”
 ...
 “u will let me know if u *find* an *opportunity* to meet *on weekend* or weekday.. but we can talk *on* yahoo and phone”
 ...
 “i can make it to your *house in 45 min* or so”
 “u look for me”
 “and meet me *at the street*?”
 “i will *drive around* a couple *times*.”
 “i will also *try* to call u *before* i get there”
 “i just dont *walk up* to someone else's *house*”

‘Authenticity’ relates to honest disclosure and may relate to disclosure of offender motivation/intent. The first extract also demonstrates the offender disclosing their desire to meet the victim offline. ‘Achievement’ relates to success and thus may be best explained in this factor in terms of planning a successful offline meeting. For example:

WARNING: transcript extract

Extract 10

“i am going to *work* late to get my *work* done”
 “right.. i am *working* tonight to make sure i get done by 6 or so tomorrow.. so i can see u by 7:30 or 8”
 “and we have a couple hours together”

Extract 11

“well you would know the *best* place for us to meet, so its up to you”

With regards to the ‘health’ variable, this was somewhat difficult to interpret in relation to the factor. From reviewing the transcripts, it appears that health words were often used in the context of sensations as part of sexual communication. For example, the word “*tingly*” was flagged as a health word but was used in a sexual context. Furthermore, the

frequently used word “live” refers to life but also the location of the pseudo-victim’s home. For example, the following extract highlights words from only the ‘health’ variable word dictionary:

WARNING: transcript extract

Extract 12

“u *live* alone or with parents?”
 “which place u *live* in?”
 “r u alone?how cum urparents lfet u alone?”
 “any name of the place where u *live*???”

This extract is clearly relating to location rather than health. This is a clear limitation in using the LIWC2015 and is discussed later in the discussion section of this chapter.

With regards to the theoretical harmony of this factor, planning a physical meeting is considered the final stage of the process and may form the final part of the disclosure phase of Elliott’s (2015) Self-Regulation Model of online sexual grooming. In this phase, the disclosure of the target behaviour is revealed and planning likely follows from this. As such, planning may not be considered part of the grooming process, rather what happens after the grooming has taken place.

Factor 4: Positive Incentivisation

The fourth factor accounted for 7.58% of the variance. Variables that loaded positively onto this factor included: ‘tentative’, ‘past focussed’, ‘differentiation’, ‘female’, ‘reward’, ‘money’, ‘certainty’, ‘male’. ‘Future focussed’ loaded negatively onto this factor thus complementing the finding that ‘past focused’ loaded positively onto this factor. This factor was difficult to interpret from solely viewing the word categories. For example, ‘tentative’ and ‘certainty’ appear to measure somewhat opposing linguistic styles. It was therefore evaluated that these variables describe different ways in which the main narrative theme was approached. With regards to the main narrative themes it appeared to focus on relationships (‘male’, ‘female’) and rewards and money. To better understand the link between these concepts, a selection of transcripts were explored highlighting these four variables.

As a result of this process it appeared that many of the ‘reward’ words appeared in the context of the benefits to the pseudo-victim of having sexual contact with the offender. For example:

WARNING: transcript extract

Extract 13

"I CAN DO STUFF YOUNGER FOLKS CANT"
 "SO IT HAS ITS *ADVANTAGES*"
 ...
 "I KNOW JUST WUT 2 DO"
 "MAKE IT FEEL *GOOD* 4 U"
 "IF U WANT ME 2 BE UR 1ST"
 "*GREAT*"

'Money' references appeared to relate to the offender's financial situation but also (for theoretical harmony with what is known about online sexual grooming) to offering to buy items for the pseudo-victim (in line with the finding that sexual groomers might use bribery as an incentivisation strategy):

WARNING: transcript extract

Extract 14

"oh i c would you *buy* them if you could"
 "cool"
 "you should *get* some just save up some *money* and *buy* some lol
 really doesnt the state give your grand parents *money*?"
 "for you?"
 "huh thats weird"
 "thats sucks"
 "ill have to *take* you *shopping* then"

'Male' references appeared be utilised as part of assessing the pseudo-victim's relationship history and willingness to engage with an older man:

WARNING: transcript extracts

Extract 15

"u don` t have a *bf*"
 "kinda though"
 "i *bet* ya *got* them lined up"
 "so do u like older *men*"

Extract 16

“well i was gonna buy ya something to cheer ya up”
 “u deserve better”
 “he aint nothin i bet he looks like a muffin”

In these extracts, it can also be observed that the offender differentiates between himself and the pseudo-victim’s past romantic partners. The final extract appears to also incorporate tangible and psychological incentives for the victim with regards to offering to buy the victim a gift and implying that they can be “better” than the victim’s previous partner.

Also of note in the first extract is the mention of drinking alcohol. Elliott’s (2015) online sexual grooming model cites alcohol and drug use as an important strategy of disinhibiting the victim. Whilst drinking largely falls under the category of ‘ingest’, which did not load onto any of the factors, this is nonetheless an interesting observation.

Finally, whilst references to females related in many case to family members, however a large number of the ‘female’ related terms referred to characteristics of the victim:

WARNING: transcript extracts

Extract 17

“you are a girl to die for hun”

Extract 18

“you are a very pretty young lady”

Bringing these concepts together, it was felt these variables could best be described as concepts relating to incentivisation through assessing and increasing victim willingness to engage in sexual contact with the offender. The extracts demonstrate the use of gifts (tangible rewards), assessing the pseudo-victims past willingness to engage in intimate relationships, emphasising the benefits of sexual contact, flattery all of which can arguably be described as positive incentivisation techniques.

With regards to theoretical harmony, this factor appears to tap into a number of the potentiality phases described by Elliott (2015). For example, flattery may form part of the rapport building phase. However, the factor appears to be best described overall by the

incentivisation stage of the Self-Regulation Model of online sexual grooming. It is noted that the incentivisation stage in the Self-Regulation Model also include coercive techniques to get a victim to comply. Thus the term ‘positive incentivisation’ was used to describe this factor in order to distinguish the ‘positive’ incentivisation techniques observed in this factor from coercive techniques.

Factor 5: Disinhibition

The fifth factor accounted for 7.17% of the variance. Positive loading variables consisted of: ‘negative emotion’, ‘anger’, ‘religion’, ‘netspeak’ and ‘swear’. The main themes derived from this were anger and negative emotion. Religious words and net slang likely loaded onto this item due to the colloquial use of these words to express angry emotions. The negative loading of ‘clout’ and ‘affiliation’ is not surprising given that anger and negative emotions on the part of one interactant is often incongruent with feeling social confidence or with a sense of belonging and affiliation with the other interactant. With regards to anger there was some evidence of this in the transcripts:

WARNING: transcript extract

Extract 19

*“stop putting words in my mouth i **hate** that”*

However, the majority of ‘anger’ words could be accounted for by the synonymous use of ‘anger’ words with slang words commonly used with sexual language. Interestingly, another pattern of ‘anger’ and ‘negative emotion’ words was the offender inferring and predicting the affect of the pseudo-victim:

WARNING: transcript extract

Extract 20

*“am just speaking with **u**”
 “so that **u** are happy”
 “cos..yesterday i **disappointed** you”
 “thts why”*

This has a manipulative effect on the victim as it primes the victim to respond in a reassuring and encouraging way.

In the following extract the offender is expressing negative emotions with regards to loss, this extract was selected given the manipulative nature of interaction ('netspeak' words are also highlighted):

WARNING: transcript extract

Extract 21

"yea well i didn't mean for it to sound like i didn't want u to have a b/f"
"i just don't want to lose u as a friend"
"ok, i believe u, i just didn't want u to fall in love and tht would be the last i heard from u"
"what if he gets mad and won't let u"

Although the pseudo-victim's responses were not part of the analysis, it appears from reviewing line three of the extract that the offender's narrative induced a reassurance response from the victim thus increasing the victim's investment in the online relationship.

Some of the relationship between 'swear' words and 'netspeak' appeared to relate to presenting as playful. Furthermore, some 'anger' words in these contexts were actually slang terms for sexual behaviours/ body parts:

WARNING: explicit content

WARNING: transcript extract

Extract 22

*"what does this look like (*explicit emoticon alluding to female genetalia- removed*)"*
"its a part of ur body"
"hehe yup"
"dont feel dumb"

This could be evaluated as somewhat manipulative in itself as it introduces an inappropriate behaviour in a playful way and thus primes a playful response back from the victim. A final example of an extract that demonstrates the control of victim response is as follows:

WARNING: transcript extract

Extract 23

"this way we both can get rid of this boredom"

Again, this primes the victim to respond in a way that they believe will alleviate the offender's boredom, namely engaging in the target behaviour of sexualised contact.

When thinking about theoretical harmony and appropriate labelling of the factor, it is noted in Elliott's (2015) model of self-regulation that disinhibition relates to the process by which the victim's response is controlled to reduce genuine responses and increases the likelihood of the victim response supporting the offender's motivation. The variables and extracts presented in this factor support this notion and as such the factor is labelled 'disinhibition'.

Factor 6: Rapport

The final factor accounted for 6.52% of the variance. 'Positive emotion', 'assent', 'tone' and 'nonfluences' variables positively loaded onto this factor. 'Assent' refers to agreeability and high levels of 'tone' relate to emotional positivity, thus it is not surprising these variables loaded with 'positive emotions' on this factor. 'Nonfluences' are a type of informal language and thus in combination with the positive emotion and agreeability variables, this factor was labelled as *Rapport*. Some examples of extracts illustrating these variables are provided below:

WARNING: transcript extracts

Extract 24

"what are you looking for?"
 "cool"
 "what do you like you to do?"
 "i like i to talk or going to the movie"

Extract 25

"well im gla d ur tlaking to me"
 "thks"
 "ur cool and sexy as well"
 ...
 "ur one cool young lady"
 "cool and sexy"
 "i just enjoy telling u that because i think that u r"

Extract 26

"haha, idk maybe cuz youre in junior high and im a sophomore in college :P"
"eh, not really. it might be frowned upon by other people though"
"its not politically correct :P"
"im just sayin..."
"hehe"
"yeah yeah. i know. sue me :P"
"yes i do. are you gonna be back?"
"ok :)"
"you have a cute name"

Positivity and instilling confidence are important aspects of the rapport building process described by Elliott (2015). As such this factor appears to complement this potentiality stage in the Self-Regulation Model.

Research Question 2: Are there significant differences in the narrative themes employed by contract-driven versus fantasy-driven offenders?

Levene's tests for equality of variances was found to be significant for the analytic word dictionary ($F(1,148)=5.07$, $p=.03$) and the sexual factor identified in Research Question 1 ($F(1,148)=4.66$, $p=.03$), suggesting that these variables violate the assumption of homogeneity. Furthermore, from utilising a two samples Kolmogorov-Smirnov (K-S) test, it was found that the assumption of normally distributed data was violated for the number days over which the grooming interactions took place ($D=1.80$, $p=.003$), the discrepancy word dictionary ($D=1.40$, $p=.04$), the feel word dictionary ($D=1.47$, $p=.03$), the sexual word dictionary ($D=1.39$, $p=.04$), and the *Sexual* factor ($D = 1.55$, $p=.02$). Therefore, a non-parametric equivalent to independent samples t-test, Mann Whitney U was administered for these items. A summary of the results is presented in Table 8 and a graphical illustration of the direction of the significant results in Figure 2.

Table 8. Statistical tests of normality and difference

<u>Variable</u>	<u>Test of normality</u>		<u>Test of difference</u>	
	Levene's	2 samples K-S	Independent t-test	Mann Whitney U
days	.80	.003*		.002*
messages	.06	.52	.16	
analytic	.03*	.29		.04*
clout	.15	.79	.58	
authentic	.19	.79	.76	
tone	.43	.97	.58	
positive emotion	.30	.79	.95	
negative emotion	.26	.52	.12	
anxiety	.82	.52	.22	
anger	.22	.52	.11	
sad	.53	.21	.13	
family	.56	.90	.78	
friend	.11	.40	.22	
female	.90	.79	.52	
male	.78	.15	.19	
insight	.91	.79	.32	
causal	.24	.79	.49	
discrepancy	.48	.04*		.04*
tentative	.68	.65	.23	
certainty	.72	.65	.47	
differentiation	.50	.79	.74	
see	.15	.65	.14	
hear	.92	.29	.16	
feel	.47	.03*		.002*
body	.12	.07	.02*	
health	.26	.97	.71	
sexual	.28	.04*		.01*
ingest	.36	.99	.51	
affiliation	.27	.97	.91	
achievement	.57	.65	.34	
power	.29	.40	.09	
reward	.42	.79	.28	
risk	.92	.99	.82	
past focused	.76	.79	.42	
present focused	.80	.52	.81	
future focused	.27	.90	.74	
motion	.67	.10	.13	
space	.85	.40	.06	
time	.17	.79	.90	
work	.41	.65	.16	
leisure	.33	.52	.65	
home	.88	.90	.53	
money	.38	.97	.83	
religion	.64	.99	.94	
death	.12	.97	.78	
swear	.25	.10	.04*	
netspeak	.75	.40	.25	
assent	.99	.52	.25	
nonfluences	.48	.40	.21	
fillerwords	.86	.90	.90	

Factor 1: <i>Sexual Desensitisation</i>	.03*	.02*		.003*
Factor 2: <i>Risk Awareness</i>	.51	.79	.24	
Factor 3: <i>Planning</i>	.31	.90	.80	
Factor 4: <i>Positive Incentivisation</i>	.80	.65	.32	
Factor 5: <i>Disinhibition</i>	.34	.90	.4	
Factor 6: <i>Rapport</i>	.16	.21	.18	

Note. P values presented, * Significance = $p < .05$

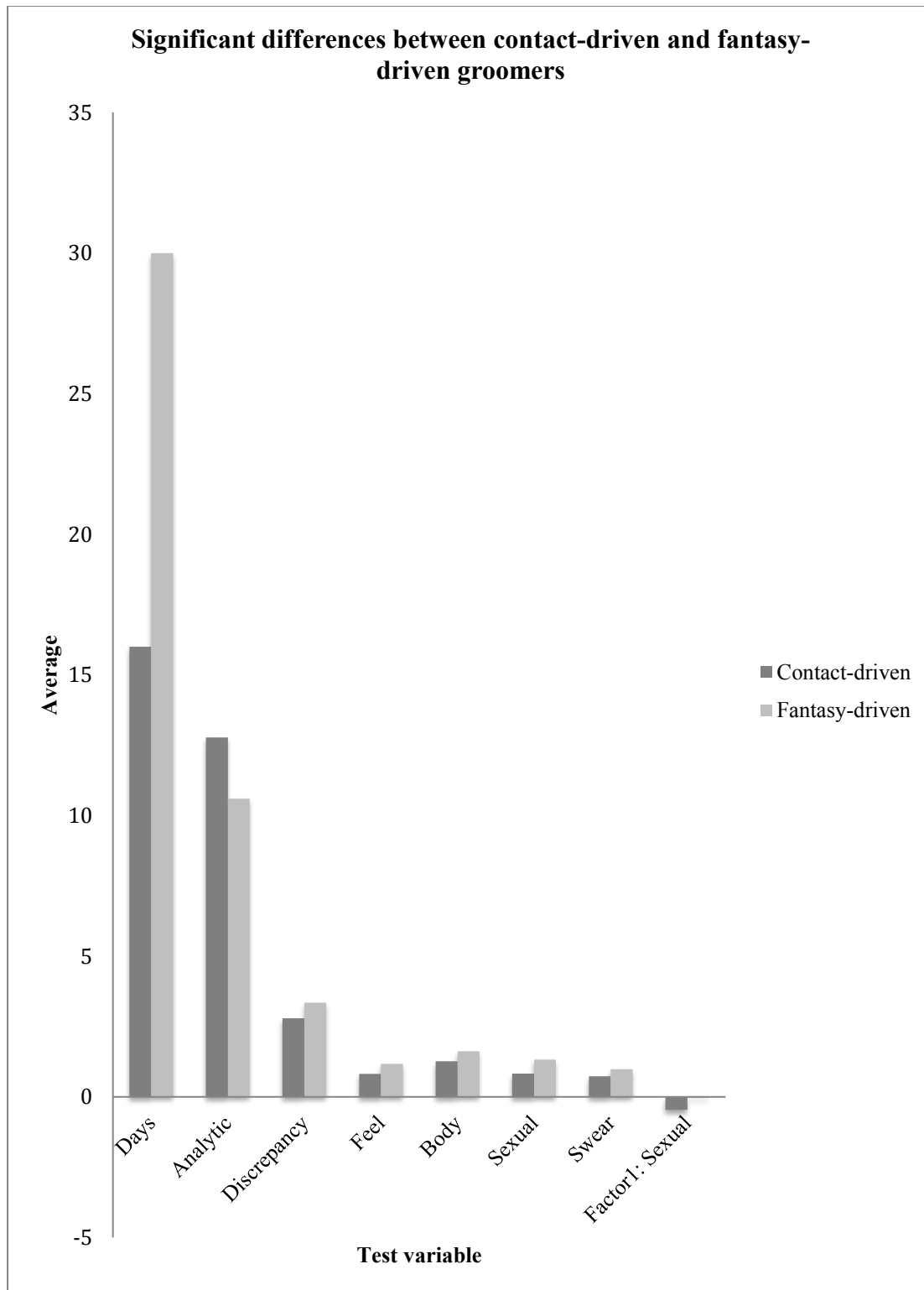


Figure 2: Graph of variables obtaining significant differences between contact-driven ($n=75$) and fantasy-driven ($n=75$) groomers

Length of interaction

Fantasy-driven groomers ($Mdn=30$) interacted with their pseudo-victim over a significantly longer period of time (days) than the contact-driven groomers ($Mdn=16$); $U=1972$, $p<.002$, $r=.26$. The effect size indicates a small to medium strength for this finding. Interestingly although there was a significant difference in the number of days for the two offender groups there was no significant difference for the number of messages sent between contact-driven ($M=1170.12$, $SD=1589.15$) and fantasy driven-groomers ($M=1676.17$, $SD=2658.59$); $t(148)=-1.42$, $p>.05$. It is therefore possible that whilst contact-driven groomers spend less time interacting with their victims, they have a more intense style of interaction with regards to the number of messages they exchange with their victim.

Another interesting observation was found by analysing the histograms of the day data. For both contact-driven and fantasy-driven offenders there was a general positive skew in the distribution of the day data. However, there appears to be a small cluster of offenders in both offending samples that interacted with their victims for much longer than the rest of the sample. This is considered further in the chapter discussion.

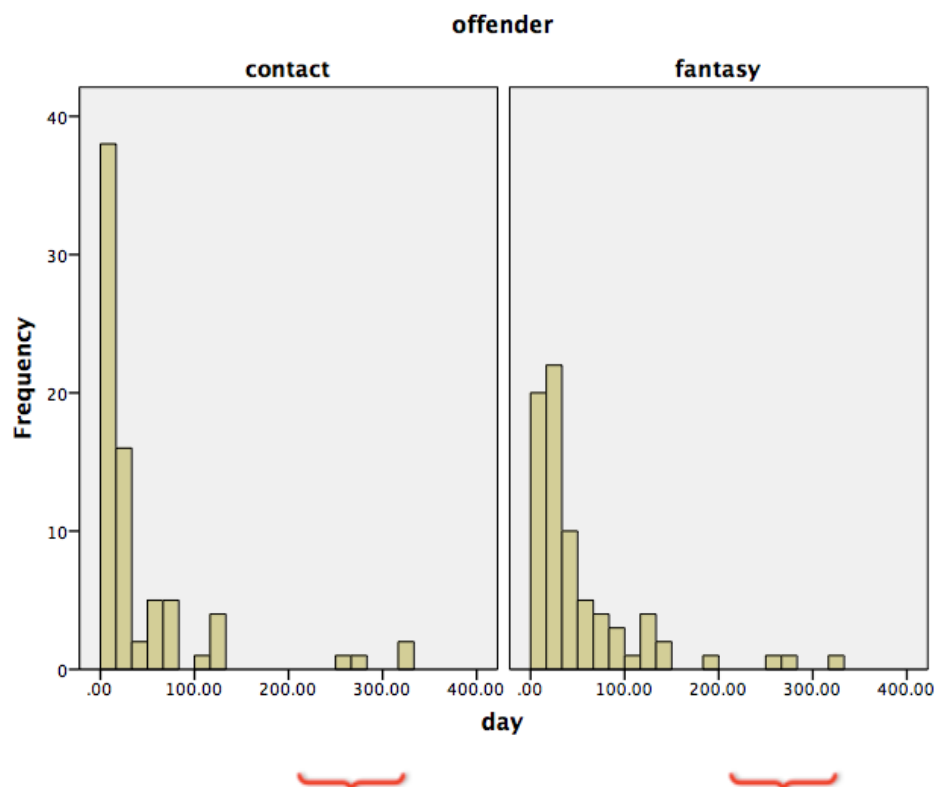


Figure 3: Histogram of the number of days over which contact-driven($n=75$) and fantasy-driven ($n=75$) groomers interacted with the pseudo-victim

LIWC2015 variables

The tests of statistical difference identified six variables demonstrating a significant difference. With regards to the findings from the independent samples t-tests, there was a significant difference in the frequency of body-related words for contact-driven groomers ($M=1.27$, $SD=.81$) and fantasy-driven groomers ($M=1.62$, $SD=.96$); $t(148)=-2.37$, $p=.02$, $d=.39$. There was also a significant difference in the frequency of swear-related words for contact-driven groomers ($M=.73$, $SD=.71$) and fantasy-driven groomers ($M=.98$, $SD=.78$); $t(148)=-2.04$, $p=.04$, $d=.34$. The differences in the use of body-related and swear-related words both obtained small-medium effect sizes. With regards to the Mann Whitney U analyses, significant differences were found for: analytic words (contact-driven: $Mdn=12.78$, fantasy-driven: $Mdn=10.6$), $U= 2262$, $p<.04$, $r=.03$; discrepancy words (contact-driven: $Mdn=2.79$, fantasy-driven: $Mdn=3.35$), $U= 2274$, $p<.04$, $r=.17$; feel words (contact-driven: $Mdn=.82$, fantasy-driven: $Mdn=1.17$), $U= 2007$, $p<.002$, $r=.25$; and sexual words (contact-driven: $Mdn=.83$, fantasy-driven: $Mdn=1.32$), $U= 2766.5$, $p<.01$, $r=.21$. In all cases, apart from the analytic variable the fantasy-driven groomers on average use more of the tested variable, however the effect sizes for these differences only fell between small and medium strength. The analytic variable had a very small effect size. It was also noted that all of the significant variables except 'analytic' loaded onto Factor 1: *Sexual Desensitisations* in the PCA analysis.

With regards to the 'analytic' variable, the results suggest that contact-driven groomers used higher levels of formal and logical language than the fantasy-driven sample.

Factors

Factor 1: *Sexual Desensitisation* was the only factor derived from the PCA analysis that obtained a significant difference between contact-driven ($Mdn=-.46$) and fantasy-driven groomers ($Mdn=-.037$); $U= 2030.5$, $p<.002$, $r=.26$. The *Sexual Desensitisation* factor was more present in the fantasy-driven transcripts. The difference was calculated as having a small-medium strength.

Research Question 3: Can narrative themes predict offender group membership?

Binomial regression analysis was used to weight the PCA factors in terms of their associations with the offender group membership and to examine whether any of the PCA factors could predict group membership. The sample number $n=150$ was deemed sufficient

for this method of analysis given the high ratio of participants/sample to variables (six factors) (Peduzzi, Concato, Kemper, Holford & Feinstein, 1996).

The binomial logistic regression model was statistically significant, $\chi^2(6) = 14.247, p = .0027$. The model explained 12.1% (Nagelkerke R^2) of the variation in the offender group membership. However, given that Nagelkerke R^2 is a pseudo- R^2 , this statistic is interpreted with caution. The model correctly classified 62.7% of the sample (66.7% of contact-driven offenders and 58.7% of fantasy-driven offenders).

Table 9. presents the logistic regression coefficient, Wald test, and odds ratios for the predictive quality of each of the PCA factors. Only Factor 1: *Sexual Desensitisation* demonstrated a significant predictive effect.

Table 9. Binomial logistic regression predicting group membership from Sexual Desensitisation, Risk Awareness, Planning, Positive Incentivisation, Disinhibition and Rapport factors

	B	Wald	Sig.	Odds ratio
Sexual Desensitisation	.525	8.239	.004 *	1.69
Risk Awareness	.214	1.512	.219	1.239
Planning	-.045	.065	.799	.956
Positive Incentivisation	.186	1.118	.29	1.205
Disinhibition	.158	.831	.362	1.171
Rapport	.24	1.897	.168	1.271

Note. P values presented, * Significance = $p < .05$

Discussion

This study adds to the sparse literature that directly assesses the online sexual grooming interaction and it adds to the existing literature by using a large sample size to analyse whether different offender motivations may be distinguished from the grooming narrative. Using an automated computer analysis programme allowed for a large number of transcripts to be analysed and demonstrated the potential utility of such programmes in the detection of online sexual grooming. Furthermore, by utilising a direct method of analysis the phenomenon of online sexual grooming by collecting data from the actual grooming interactions itself, this study reveals information that has not otherwise been detected from alternative methods of analysis. For example, McManus, Almond, Cubbon, Boulton and Mears (2016) examined the transcripts of offender conversations with one another (i.e. offender-offender rather than offender-victim interactions) on an online forum. They

identified five overarching themes from their content analysis (adult relationships, child sexual interest, media, sexual self and rapport) however found no significant differences in the themes discussed by contact-offenders and fantasy-driven offenders. This study however did identify significant thematic differences between these two groups of offenders.

The specific research questions addressed by this study are discussed with regards to the theoretical and practical implications of the findings and subsequent future directions for research.

Research Question 1: What narrative themes can be identified from transcript data using an automated computer analysis programme?

The factors that emerged from a six factor PCA solution provide initial empirical evidence for the Self-Regulation Model of online sexual grooming proposed by Elliott (2015). Furthermore, the study validates the findings from in-depth qualitative studies using small sample sizes with regards to the identification of grooming strategies relating to incentivisation, disinhibition (through manipulative processes), sexual desensitisation, rapport and security assessment (Table 5). A further factor related to planning a meeting in the physical world between the offender and the pseudo-victim. Arguably, this may not be a grooming strategy but rather a process that occurs after preparatory grooming processes have taken place either to arrange the target behaviour of offline CSA or as part of fantasy rehearsal. However, planning may form part of the process by which the offender grooms the environment, as described by Craven et al.'s (2006) multifactorial definition of grooming. Interestingly, the variable 'family' did not load onto the factor model. This was surprising given the importance of avoiding detection and the subsequent need to assess and groom the victim's environment.

Beyond providing empirical evidence for the Self-Regulation Model (Elliott, 2015), this research question also demonstrated the applicability of an automated word recognition system to identify clusters of words that can identify grooming processes and themes. Previous research has also demonstrated the utility of analysing data using automated computer programmes (as discussed in Chapter 3), however many of these studies have used a process of data cleaning (e.g. Drouin et al., 2017). This is a beneficial method for ensuring that all occurrences of a test variable are accurately identified and this study's accuracy of frequencies for each factor is probably impacted as a result of not cleaning the data. Nonetheless, by not cleaning the data, this study demonstrates that automated programmes such as LIWC2015 can still identify themes characteristic of the grooming process despite

the high levels of spelling mistakes that naturally occur in live online communicative text. This has significant implications for the effectiveness and applicability of such programmes to analyse 'live' interactions in real-time without the need to spend time cleaning the data. Such programmes can thus not only be a cost-effective way of analysing large numbers of interactions to detect the presence of online sexual grooming, but are also time-efficient in that they could potentially screen 'live' interaction and detect narrative themes indicative of online sexual grooming.

Research Question 2: Are there significant differences in the narrative themes employed by contract-driven versus fantasy-driven offenders?

The variables 'sexual', 'body', 'feel', 'swear' and 'discrepancy' were significantly more frequent in the fantasy-driven transcripts than in the contact-driven transcripts. They loaded onto the *Sexual Desensitisation* factor which, interestingly, was the only factor in which a statistical difference between the two offending groups was found. The finding that fantasy-driven groomers use more sexualised language makes theoretical sense in that the cybersexual communication for this group is the target behaviour whereas the contact-driven group seek sexual gratification from a contact-offence and not from the online interaction itself. This also complements the findings of Briggs et al. (2011) who reported from a study using indirect methods that fantasy-driven groomers engaged in more sexualised communications than the contact-driven offender sample. The results of the current study are therefore not surprising but it does pose an interesting question as to whether the sexual language used by fantasy-driven groomers is truly a grooming strategy. Whilst contact-driven groomers introduce sexual communication as a means of desensitising the victim, the fantasy-driven groomer also likely introduces the theme of sexual contact in a systematic and gradual way in order to desensitise the victim. Once the victim is desensitised they may then continue to engage in the online sexual communication to obtain sexual gratification. At this point the use of sexual language is no longer a grooming strategy but is the target offence behaviour.

Interestingly, there were no differences in the variables that loaded onto the *Planning* factor. One might expect this factor and associated variables to be significantly higher for contact-driven groomers, given their intentions to meet the victim. However, fantasy-groomers engaged in just as much planning conversation as contact-driven groomers, the only difference was that they did not turn up to the arranged meeting. This finding complements the research findings published by Winters et al. (2017) who found that three

quarters of the sample that did not attempt to meet a victim still engaged in online conversations about meeting. One explanation for this is that the planning of a meeting is part of the fantasy rehearsal for the fantasy-driven offender and such conversations help the offender obtain gratification from the fantasy of sexual contact with the child. Arranging a meeting makes the fantasy more real and thus possibly more gratifying for the offender. It is also possible that the amount of planning conversation was influenced by the narratives of the pseudo-victim, given their motivation to get the offender to turn up to a sting operation. However, as the pseudo-victim narrative was not analysed in the current sample, this premise cannot be commented upon further. It would be useful for future studies to compare the narrative themes of groomers interacting with 'true' victims and pseudo-victims, however as mentioned in the methodology of the current study, permission to access large sets of transcripts from interactions with 'true' victims can be difficult to obtain.

With regards to the 'analytic' variable, the results suggest that contact-driven groomers used higher levels of formal and logical language than fantasy-driven groomers. This may perhaps be explained by potential differences in the amount of perceived risks associated with the target behaviour. For fantasy-driven groomers, they are meeting their offence goals through the interaction and may feel more secure through the perceived anonymity provided by the Internet, whereas for the contact-driven groomers there is a need to successfully organise an offline meeting without being detected. There may therefore be a more meticulous and logical interactional style to ensure a successful target behaviour. However, this possible explanation requires further in-depth analysis before any firm conclusions can be drawn.

Finally, the findings from Research Question 2 suggests that despite fantasy-driven groomers interacting with the pseudo-victim for a significantly longer period of time than the contact-driven groomers, there was no difference in the number of messages sent. This suggests that contact-driven groomers have a more intense style of interaction with the victim than fantasy-driven groomers. This makes sense as contact-driven groomers are not satisfied by the online interaction itself and they want to assess and groom the victim as quickly as possible in order to engage in their target behaviour. This may also account for the more formal style used by the contact-driven group. Interestingly, for both the contact-driven and fantasy-driven groomer populations there was a small cluster of offenders who engaged with their pseudo-victim over a significant amount of time (around 1 year) and therefore appear to be distinct from the rest of the population from that group. It is possible that these offenders were more emotionally invested in their victims as they were willing to spend longer

interacting with the victim before reaching cessation of gratification or meeting the target behaviour. These offenders do not appear to engage in the ‘hit and run’ tactics described by O’Connell (2003) and may represent a sample more akin to Webster et al.’s (2012) intimacy-seeking offender typology.

Research Question 3: Can narrative themes predict offender group membership?

It followed from the results of the tests of difference that *Sexual Desensitisation* was the only factor from the six-factor model that was able to distinguish between contact-driven and fantasy-driven groomers. *Sexual Desensitisation* only correctly classified 62.7% of the sample (66.7% of contact-driven offenders and 58.7% of fantasy-driven offenders). Thus it cannot be used as an accurate tool to predict offender motivation in isolation, although it does hold some merit as a distinguishing feature that could assist in the development of a tool to assess risk and prioritise investigations of law enforcement agencies. Chapter 5 explores this premise in more detail.

Whilst *Sexual Desensitisation* is only one of the factors distinguished between contact-driven and fantasy-driven groomers, it would be an important area of further research to test whether the model can distinguish between grooming and non-grooming sexual interactions (for example between consenting adults). This is important given that Howitt (1995) has suggested that the behaviours exhibited in grooming processes might mirror those seen in seduction processes between adults. Further analysis should therefore test whether the six-factor model is unique to the grooming process akin to Rahman Miah et al’s (2011) finding that grooming interactions can be distinguished from other sexualised online interactions. This would have significant practical implications for the six-factor model in that, if it was found to effectively predict whether or not a given transcript was a grooming interaction, it could be incorporated into security screening software that could be employed by online communication platforms to safeguard their users and flag potentially abusive interactions to law enforcement agencies for subsequent investigation.

Limitations of the current study

The results of this study should be interpreted with caution given the relatively small effect sizes of the results. Effect sizes may have been impacted by the reliability of the measure (LIWC2015), which relied on Spearman-Brown measures to obtain adequate reliability figures for the different word categories. Elliott (personal correspondence, 18th April 2017) highlighted that the LIWC2015 dictionary has limitations in its inability to

distinguish the relevance of words that cross-over categories (such as the ‘sexual’, ‘anger’ and ‘swear’ words) and which narrative theme these words/categories most likely map onto. This limitation was evident in the current study and necessitated manual review of the transcripts to interpret some of the loadings of the LIWC2015 to the six-factor model. LIWC (2015) have identified that due to the crude nature of LIWC2015, errors of classification are inevitable, particularly given that the programme is unable to detect sarcastic nuances or metaphors. This highlighted the importance of manually reviewing the transcripts in order to effectively interpret the factors from the PCA analysis.

At the 2017 New Directions in Sex Offender Practice, Elliott presented a similar study (that has not yet been published) that aimed to explore the Self-Regulation Model using bespoke dictionaries. He utilised Boolean functions in order to address the issues of word relevance and context. This may be a more accurate way of assessing the phenomenon and it is recommended that future studies look to develop and test the psychometric properties of grooming-specific word dictionaries. Whilst this study used a deductive process of analysing variables, given the theoretical harmony of the current study it is argued that there is likely sufficient evidence from the growing pool of research to justify the development of test variables inductively.

The process of labelling the factor model by manually reviewing the use of the variables in the transcripts should undergo further peer review to ensure that the interpretation of the factors is not biased by the researcher’s and principle investigator’s expectations. It would be useful for an experienced researcher who is not familiar with the Self-Regulation Model or the online sexual grooming research field to interpret the factor-analysis in order to ensure an unbiased appraisal. The methodological rigour of this current study could have been improved by carrying out a qualitative thematic analysis on a small subsection of the sample to compare the themes derived from hand coding versus statistical analysis of word category frequencies. Having a selection of systematically coded transcripts would have also improved the objectivity of the interpretation of the factors from the PCA analysis in that the colour code procedure utilised could have been mapped onto the handed coded transcripts to identify codes associated with the word categories highlighted in the PCA analysis.

There are clear limitations with regards to the sample from which the data was obtained. The motivation of the undercover decoy to secure a conviction likely impacted upon their compliance in the interaction. This may account for finding that the incentivisation strategies identified in this study were framed positively and underpinned by reward rather

than by the punishment strategies seen in coercive incentivisation strategies such as threats and blackmail (see Table 1). Furthermore, the decoy population represented a narrow age range (12-15) and thus offenders with a preference for pre-pubescent children are likely not represented by this sample given potential differences between offenders with different age preferences (paedophilic versus hebephilic; Blanchard, Lykins, Wherrett, Kuban, Cantor et al., 2009). This is an important limitation given that an increasing number of children as young as 8 years old are reportedly using the Internet regularly (Marcum, 2007; Shannon, 2008) and are thus vulnerable to online exploitation. Future studies should attempt to obtain samples with younger victim demographics to assess whether the grooming process remains stable regardless of victim age preference or whether different strategies are employed when grooming pre-pubescent children. This will have potential implications for safeguarding children online and detecting harmful online interactions as well as the development of age appropriate safety materials.

With regards to the offender sample, seven of the contact-offenders were either convicted sex offenders or were found to be contacting/offending against other children. A similar proportion of the fantasy group were convicted sex offenders having committed contact offences as well as solicitation offences. As such there was evidence of cross-over offending in the sample, however this was not controlled for or addressed by the current study. The reason for this was due the variable quality of the descriptive information provided alongside the transcripts. This made it difficult to identify whether or not all cross-over offending and offending history information was provided for every case. As such it was not possible to accurately separate these groups of offenders from the sample. The results of the current study should therefore be interpreted by the motivation for a given interaction, rather than viewing the sample as two distinct typologies. It is recommended that future studies explore the concept of cross-over offending in the context of online sexual grooming in further detail.

Conclusions

The findings of this study should be interpreted with caution given the exploratory nature of the study. It is recommended that replication studies should be conducted to validate the findings of the current study. Such studies would ideally use a 'true' victim sample and consider the influence of additional variables such as victim age and offending

history. Nevertheless, the current study reveals important findings with regards to providing empirical evidence for the Self-Regulation Model of online sexual grooming (Elliott, 2015).

The finding that fantasy-driven groomers differ from contact-driven groomers in the amount of time spent engaging in sexual communication during the online interaction has important implications for detecting online sexual grooming and subsequently making judgements regarding the likelihood of an offender attempting to engage in a contact-offence. Somewhat counter-intuitively, it appears that those engaging in more detailed and prolonged sexual communication online may be less likely to engage in a contact offence (regardless of whether they engage in discussions about planning a meeting) than an offender who spends little time engaging in online sexual communication but also talks about planning a physical meeting.

Of a similar counter-intuitive note, it appears that communications regarding the planning of a meeting does not necessarily lead to an offender turning up for the planned meeting and that for many offenders this communication alone may in fact function to fulfil part of the fantasy rehearsal. As such, evidence of planning a physical meeting is not an accurate predictor of the likelihood of a contact offence.

A detailed, holistic discussion regarding the practical implications of the research (and entire thesis) and future directions is presented in the next chapter.

Chapter 5**Discussion**

The aim of this thesis was to facilitate understanding of the grooming process in order to enable meaningful discussions to take place regarding the implications for detecting, assessing and responding to this particular type of Online Child Sexual Exploitation (OCSE). The challenge with such high rates of OCSE offences is to prioritise investigative efforts towards those offenders who pose the most risk to society. Much of the OCSE research to date has focused largely upon Indecent Images of Children (IIOC) and Child Pornography (CP) offenders, however groomers may pose a very different risk and therefore a specific focus on this subset of online offenders was deemed paramount in order to address the high level of Internet-mediated Child Sexual Abuse (CSA) offences being committed (National Society for the Prevention of Cruelty to Children [NSPCC], 2016). This thesis integrated an investigation of the utility of the different research methods used to assess online sexual grooming and focused upon the process of the grooming interaction in order to identify themes and patterns that may assist in the detection of such harmful interactions. Specifically, the work conducted for this thesis set out to explore whether offence motivation impacts upon the selection and utilisation of grooming strategies and whether such a difference could be identified using a method of direct transcript analysis using a cost and time-efficient automated computer programme.

Summary of findings

Chapter 2

The literature reviewed in Chapter 2, assessing the distinction of Internet-mediated offenders to non-Internet-mediated offenders, identified that levels of sexual deviance may distinguish these offenders (Babchisin, Hanson & Hermann, 2010). A widely used assessment of sexual deviance, namely the Multiphasic Sex Inventory (MSI) was thus reviewed.

Upon reviewing the psychometric properties of the MSI, concerns were raised regarding the dearth of information relating to the reliability and validity of the measure and tautological nature of the assessment. Specifically, there were notable gaps in which scales and subtests had undergone tests of reliability and the population of exposers were severely underrepresented in all analysis of the measure. Of interest, Craig, Browne, Beech and Stringer (2007) found that some of the MSI subtests demonstrated significant contributions regarding the prediction of sexual offence reconviction. It is therefore suggested that the predictive properties of the MSI are explored with Internet-mediated offenders to see if this

finding is replicated and thus whether the subtests of interest could be effectively incorporated into the development of a risk assessment tool for online sexual grooming.

Chapter 2 presented a consideration of alternative methods of assessment and considered the ethics and time and cost effectiveness of these measures. However, it was concluded that given much of the assessment of characteristics of Internet-offenders has not included groomers, more needs to be understood about the phenomenon of online sexual grooming in order to logically and effectively select appropriate assessment methods for this population.

Chapter 3

Self-report methods from offenders and victims have allowed for the collection of in-depth accounts from both offenders and victims of online sexual grooming. However, Chapter 3 highlighted some limitations with this method with regards to the impact of social desirability and shame on the validity of self-report accounts. Data obtained from police reports can contain incomplete information and some information is subject to the interpretation of the investigator which is then further interpreted by a researcher and subsequently vulnerable to the biases on two interpretation processes. Consequently, a systematic literature review was conducted to synthesise the findings of empirical studies that had collected and analysed data directly from transcripts of grooming interaction narratives.

Data was extracted from fifteen studies of sufficient methodological quality. The studies used a variety of methods to analyse the transcript data, including small sample qualitative hand analysed data and large sample quantitative data analysed by automated computer programmes. The qualitative studies highlighted the presence of grooming strategies relating to the development and maintenance of a relationship through rapport, incentivisation, risk assessment and manipulation. The quantitative studies demonstrated that grooming narratives can be detected by automated computer programmes and can be utilised to assess characteristics of the grooming process.

From the review, it was identified that online sexual groomers are not a homogenous group with regards to their offence motivation and target offence behaviour. It also highlighted that qualitative analysis has facilitated an in-depth understanding of the grooming process, however, these findings require replication using larger sample sizes.

Chapter 4

The research study presented in Chapter 4 was directly influenced by the findings of Chapter 3. The study used an automated computer programme to assess the impact of different offender motivations in a sample of contact-driven ($n=75$) and fantasy-driven ($n=75$) grooming transcripts. The findings of this study provided empirical evidence in support of Elliott's (2015) Self-Regulation Model of online sexual grooming.

With regards to the impact of different offender motivations, it was found that contact-driven and fantasy-driven groomers did not differ greatly in processes as described by the Self-Regulation Model except for narratives concerned with sexual desensitisation. Fantasy-driven transcripts contained a higher proportion of narrative concerned with sexual desensitisation than contact-driven groomers and the factor of *Sexual Desensitisation* was found to contribute to a predictive model of group membership.

If replicated by future researcher with even larger sample sizes, these findings could have implications for risk assessment and case prioritisation strategies utilised by law enforcement agencies. It appears feasible that an automated computer programme specific to the investigation of online sexual grooming narrative themes could be developed to provide a cost and time-efficient way of facilitating such investigations.

Implications

Defining and categorising offenders

This thesis identifies a population of groomers that are not motivated to engage in contact CSA. There is arguably a debate as to whether fantasy-driven groomers are in fact groomers, in that their interaction is the target behaviour and not a preparatory technique for future offline abuse. It is however argued by the author of this thesis that the processes of rapport, incentivisation, disinhibition and risk awareness present in the narrative of this population likely function to groom the victim for the online cybersexual contact and to maintain the victims compliance to increase the likelihood of future cybersexual interactions with the victim.

Kloess, Seymour-Smith, Hamilton-Giachritsis, Long, Shipley and Beech (2015) have questioned the appropriateness of the term 'fantasy', given that it may not reflect the serious nature of the harm caused by these offenders. They suggested that Webster et al.'s (2012) 'hypersexual' typology may be a more appropriate label. However, the author of this thesis proposes that DeHart, Dwyer, Seto, Moran, Letourneau and Schwarz-Watts' (2017) classification of 'cybersexual' offenders, 'schedulers' and 'cybersexual-schedulers' may be a

more appropriate description of the offenders represented in the research study in this thesis. This premise follows from the finding that a proportion of the fantasy-driven and contact-driven group appeared to fit Webster et al.'s (2012) 'intimacy-seeking' typology rather than the 'hypersexual' typology. Furthermore, using DeHart et al.'s (2017) classifications, the 'cybersexual-scheduler' typology could encapsulate cross-over offenders who engage in both 'fantasy' and 'contact' driven interactions. Of note, there are a number of names and labels given to different types of online groomers and it may not be as simple as deciding on the most appropriate terminology for contact, fantasy and cross- over offenders. The author postulates that offender categorisation may be multidimensional in nature and postulates a model encompassing the terminology described above in conjunction with Ward and Seigart's (2002) pathway model:

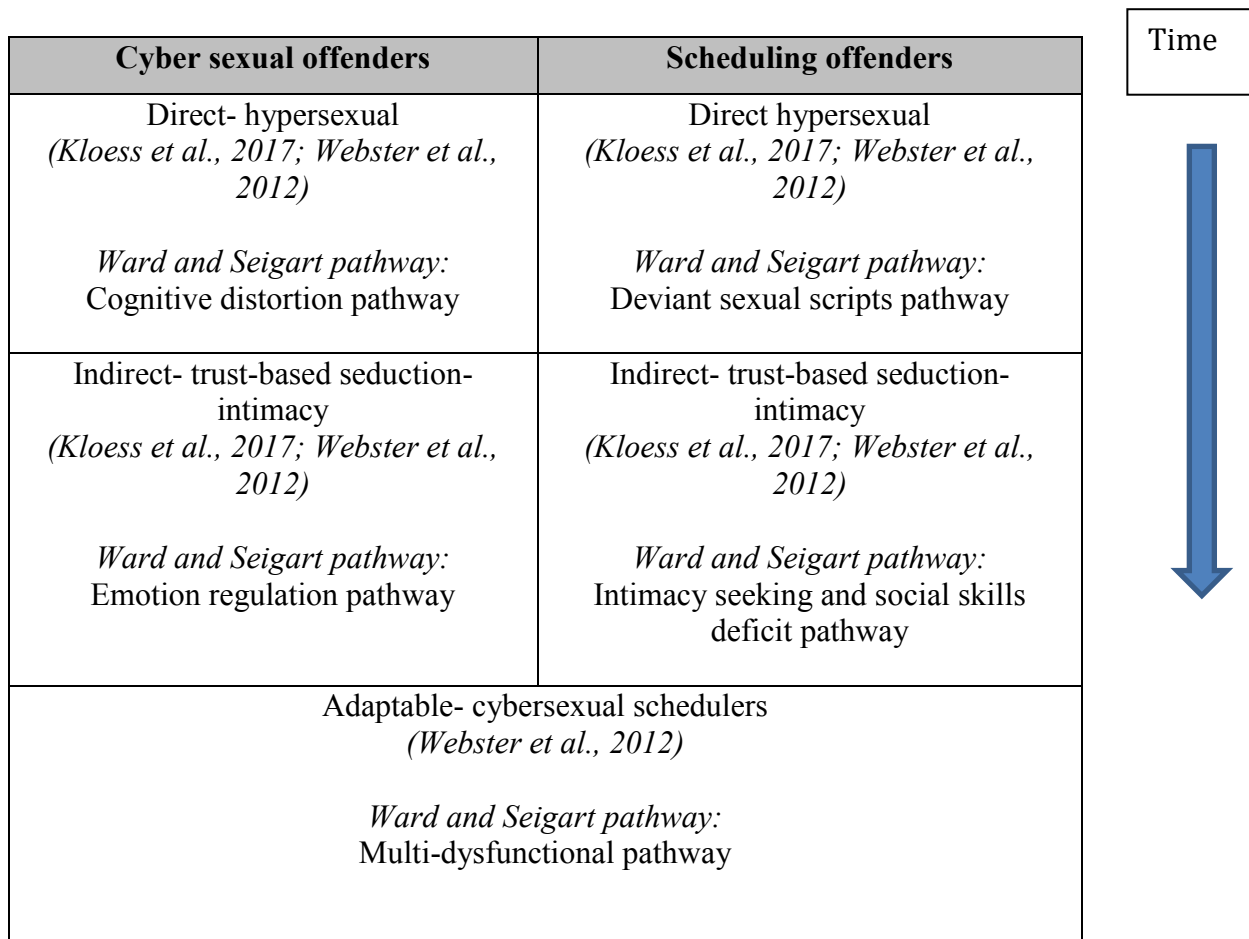


Figure 4. Possible pathway model for online grooming

This model requires further theoretical and empirical investigation, however may provide some explanation for the differences in the length and intensity of contact in the fantasy and contact driven groups found in the research project presented in Chapter 4.

In Chapter 4 of this thesis we saw that past convictions of offenders did not necessarily reflect the offence motivation present in the interaction being analysed. This has interesting implications for the classification of groomers. Perhaps only a given interaction motive can be classified rather than the offender as a typology. This has implications for understanding the risk posed by individuals who have used the Internet to exploit children in terms of their potential to commit future contact offences. Future research should thus concentrate on investigating the recidivism of grooming offences with a focus on identifying any patterns between motives of historical and subsequent offending.

Detecting online sexual grooming

The use of decoys

Mitchell, Wolak and Finkelhor (2005) reported that around 25% of Internet-mediated sexual offences come about from decoy operations and Briggs, Simon and Simonsen (2011) reported around 90% of their samples convictions resulted from sting operations. This highlights the effectiveness of such operations in proactively investigating online sex offences. In the United States (US), where the sample from the research study in the previous chapter was collected, a defendant can raise a defence of entrapment if the undercover decoy or officer has appeared to coerce the defendant into engaging in sexual communications that they were otherwise not intending to engage in (Urbas, 2010). If such a defence is successful, then police evidence may be excluded from a case or result in a lesser charge (Urbas, 2010). In the United Kingdom (UK), similar evidence of police misconduct can impact on the prosecutions case in the UK (Urbas, 2010). It is undeniable, however, that a significant benefit of using decoys to detect online sexual grooming is that it may intercept the groomer before they interact with a 'true' victim, thus providing a proactive strategy to detect risk. What is important is that decoys receive sufficient training and supervision to maintain ethical standards.

The findings of this research might lead to insights into to how to improve the policing and training of undercover police officers and volunteer decoys (Finkelhor, 2014; Kloess et al., 2015). For example, if an online groomer has been reluctant to meet the victim over some time but is engaging in highly sexualised narratives then investigators might have a case to intervene and process the offender as a fantasy-driven groomer based of the narrative patterns they are displaying. Intervening early could result in the safeguarding of future potential victims, particularly given the finding that the offender might be interacting with a number of victims simultaneously.

The use of automated programmes to detect grooming

Dombrowski, LeMasney, Ahia and Dickson (2004) highlighted the importance of technological measures in the detection and monitoring of online sexual grooming. The European Chapter of the Association for Computational Linguistics (EACL) has also dedicated a whole conference to exploring the utility of automated computer programmes to detect patterns in narratives, including those of grooming. This thesis supports the notion that online sexual grooming narratives can be detected and analysed using automated computer programmes and it also demonstrates that ‘unclean’ naturally occurring communicative data can still be analysed and produce meaningful albeit crude results. This has important implications for the detection of grooming, given the possibility of installing live monitoring programmes on social media and online communication platforms as a proactive and cost/time-efficient safeguarding detection technique.

Risk assessment

The Child Exploitation and Online Protection agency ([CEOP] 2012) highlight the importance of risk assessment in order to prioritise case investigations. This is particularly relevant given Chief Constable Simon Bailey’s (of the National Police Chief’s Council) admission in February 2017 that the workload relating to Internet offences is ever-increasingly difficult to respond to effectively. He also suggested that a process of prioritisation was required. In order to prioritise cases effectively, law enforcement and child protection agencies need to be able to make defensible decisions supported by extensive empirical evidence.

To date, research into online offending has been dominated by research regarding IIOC and CP offenders. This has led to significant advances with regards to risk assessment through the development of the Kent Internet Risk Assessment Tool (KIRAT) (CEOP, 2012). This demonstrates the practical utility of such research thus highlighting the need for a similar research and development process to occur for online sexual grooming. At the 2017 New Direction in Sex Offender Practice conference, a grooming App that is being developed and used by Kent police in the U.K was described. This sounds like a promising endeavour, however little information regarding this App is published. Nonetheless, it is hypothesised that the findings from Chapter 4 could inform the development and utility of this App, particularly with regards to how risk of contact offending may translate into the narrative of online sexual groomers. For example, whilst law enforcement agencies might intuitively

think that an offender engaging in more descriptive and graphic fantasy rehearsal may pose an increased risk, Chapter 4 demonstrated that higher risk contact offenders engaged in less of this narrative.

An important implication of understanding the risk posed by online sexual groomers is subsequent treatment decisions. In a time of austerity where cost-efficiency and outcomes are a key factor in decision-making, it is critical that resources are deployed effectively. For example, Wakeling, Mann and Carter (2012) suggest that low-risk offenders may require less than 100 hours of rehabilitation, given the low reconviction rates for this population. With regards to understanding the risk of fantasy-driven offenders going on to commit a contact offence, Swaffer, Hollin, Beech, Beckett, and Fisher (2000) highlighted the need to better understand the link between sexual fantasies and offences against children (if any). Sullivan and Beech (2003) postulate that masturbating to sexual fantasies reinforces the sexual fantasy and helps the offender overcome feelings of guilt associated with the fantasy. Therefore engaging in frequent cybersexual CSA communications to achieve sexual gratification means that fantasy-driven offenders may become increasingly more at risk of engaging in a contact offence. However, Sheldon and Howitt (2008) note that fantasy does not necessitate subsequent enactment of the fantasy through behaviour in a similar way that in non-offender samples sexual fantasies do not reflect sexual behaviours (Cramer & Howitt, 1998; Friday, 2001). Sheldon and Howitt (2008) suggest that fantasy rehearsal is different from the process of fantasising and that the process of rehearsing fantasies may contribute to an increase in risk of contact offending, rather than the fantasy itself. There was evidence of such rehearsal in the transcripts analysed in Chapter 4 through the engagement of planning narratives despite no intent to meet the victim.

Treatment and rehabilitation

With regards to rehabilitating Internet sex offenders, the Internet Sex Offender Treatment Program (i-SOTP) is a nationally accredited program that addresses online-specific behaviours such as compulsivity and collecting CP whilst also addressing addresses victim awareness which may therefore help to combat the feeling of distance and indirectness provided by sitting behind the perceived safety of a screen (Elliott, Beech, Mandeville-Norden & Hayes, 2009; Middleton, 2004). Cognitive-behavioural treatment programmes have also been cited as effective with Internet offenders (Chandler, Swift and Goodman, 2016). However, Dr Friendship reported at the 2017 New Directions in Sex Offender Practice conference that very few Internet sex offender treatment programs are currently being rolled

out by Her Majesty's Prison Service (HMPS) due to decreases in commissioning. Consequently, treatment provisions for Internet offenders are primarily resourced by the voluntary sector such as Lucy Faithfull Foundation's Inform plus program (specific to IIOC offenders; Lucy Faithfull Foundation, 2017) and STOP SO (Specialist Treatment Organisation for the Prevention of Sexual Offending; 2017).

This thesis has demonstrated, particularly in Chapter 2, that Internet-mediated offenders can be distinguished from non-Internet-mediated offenders with regards to their characteristics and personality profiles. As such they are likely to have different treatment needs. Empirical support of the Self-Regulation Model (Elliott, 2015) in itself has implications for recommended treatment directions. Elliott (2015) argues that the Self-Regulation Model provides an assessment framework to assist in the formulation of an offender's treatment needs. For example, incentivisation strategies can be informative regarding potential cognitive distortions in terms of the legitimacy of sexual contact between adults and children. Rapport strategies may also be informative regarding interpersonal skills. Security management strategies may provide information regarding offender insight into the criminality of their behaviour and some aspects of victim empathy, and desensitisation and introduction of the target behaviour may be informative regarding deviance and risk.

Prevention strategies

Case prioritisation and treatment are reactive strategies employed to prevent future offences. However this does not answer the whole question of how to tackle the issue of online sexual grooming with regards to proactive prevention of grooming prior to an offence taking place.

Education

Online safety skills for children, is frequently highlighted in the grooming literature (e.g. Finkelhor, 2014; Hui, Xin & Khader, 2015; Kloess et al., 2015; Wolak & Finkelhor, 2013). This thesis highlights the need for education programmes to address not only the risk of offline meetings following online contact, but also the abusive nature of online sexual communication and the risk of being coerced into the production of IIOC. Programmes such as CEOP's ThinkUKnow (2017) education tool should consider incorporating information regarding patterns identified regarding the process of contact and fantasy-driven grooming to enable young people to detect grooming strategies, end the contact and report the incident accordingly. It should be noted that the same feelings of anonymity that makes the Internet so

appealing for offenders, also disinhibits young people online thus decreasing their resistance to online sexual solicitations (de Almeida Neto, Eyland, Ware, Galouzis & Kevin, 2013). It is therefore important that education tools are explicit in what appropriate online boundaries look like. This is particularly pertinent given the impact of sexualised media and popular culture on today's young society (Coy & Garner, 2012). Elliott (2015) also highlights the need to educate adults in the vulnerable targets network so that they can effectively supervise the young person's online activity and feel empowered in their abilities to identify and intercept potentially harmful interactions.

Public engagement and campaigns

Public engagement and public health campaigns can increase the public's awareness of the presence of a group of offenders who are motivated to engage in only cybersexual communications. Making this knowledge publicly available in a sensitive and appropriate manner may also provide a source of reflection for those beginning to find themselves engaging in cognitive distortions justifying the use of online forums to communicate with children. This may enable individuals to seek support before committing a grooming offence. Campaigns may also help to tackle the cognitive distortion that some fantasy-driven groomers may harbour with regards to believing that, since they are not physical assaulting the victim, they are not 'harming' the victim (Griffiths, 2000; Schneider, Sealy, Montgomery, & Irons, 2005). Highlighting what constitutes as an illegal sexual communication with a minor and the consequences of being caught may increase the perceived risks of engaging in this online behaviour and decrease the perception of the safety provided by the Internet for potential offenders.

Limitations

A significant limitation with this thesis is that it focuses upon data obtained from email and live communication forums which are now somewhat dated. New advances in technology such as Snapchat, Instagram and online gaming rely less on typed narratives and more on pictures and audio recordings/dialogue. Of concern, the increasing use of picture increases the likelihood of online exposure and IIOC solicitation. Consequently, the use of these platforms to groom children is likely to require a different set of grooming strategies.

Furthermore, Europol (2015) have highlighted the use of the ²Darknet as a forum to exchange IIOC and to abuse children online. Detecting online activities of this kind is extremely difficult given the function of the Darknet as an Internet platform where users are untraceable. The subsequent need for law enforcement agencies to stay up to date with these changes and adapt their responses accordingly is of paramount importance in order to effectively detect and respond to online sexual grooming offences.

Future directions

Chapter 2 presented findings from research exploring the characteristics and personality profiles of OCSE offenders. Whilst Chapter 2 focussed on sexual deviance, the recent finding that OCSE offenders may differ from contact and mixed offenders with regards to antisociality (Babchisin et al., 2014; Elliott et al., 2013) warrants further exploration. Specifically, sexual deviance and antisociality should be assessed in grooming populations to assess whether groomers present with a profile akin to the OCSE samples assessed by Babchisin et al. (2014) and Elliott et al. (2013) and whether there are any differences depending on the target offence behaviour. This may inform formulation and treatment recommendations for this population of offenders.

The study presented in Chapter 4 only provides preliminary evidence of the Self-Regulation Model and the discriminative features of the use of sexual desensitization in inferring offender motivation. Therefore, more studies are required to assess the validity of this finding and the current study should undergo peer review. Furthermore the pathways model postulated by the author earlier in the chapter should undergo further theoretical and empirical investigation, perhaps via process of pathway formulation and offence mapping with a sample of convicted online groomers.

CP and grooming offences represent a large proportion of Internet crimes (Urbas, 2010) and thus represent a large proportion of law enforcement investigations regarding Internet offences. It is possible that both the fantasy-driven and contact-driven groomers may also engage in CP offences. Cross-over online offending was not a focus of the current thesis, however there has been little if any research to date to look at the similarities and differences between groomers and CP offenders who do not engage in live communications with victims. It is suggested that future research also explores whether offenders who expose themselves

² The Darknet is an Internet platform that allows authorized users (via special access processes and software) to be untraceable and thus increase anonymity.

via web camera as part of an online-only communication with a child truly engages in the grooming processes or whether there is subset of ‘online exposers’ using a ‘hit and run’ tactic.

Conclusion

This thesis adds to the sparse pool of literature regarding the phenomenon of online sexual grooming and brings together what is known about this specific offence, which is often grouped under the umbrella description of OCSE. It may be unfeasible and arguably somewhat medicalised to categorise small subsets of offenders with potentially subtle differences in treatment needs. However this is not necessarily what this thesis is arguing. This thesis simply proposed that given the dearth of comprehensive IIOC literature, it is important to research specific offence behaviours in isolation and the presence of cross-over offending before grouping Internet offences together and making broad conclusions about the process, assessment and treatment of OCSE offending. This approach ensures validity, which in turn ensure cost, and time-efficiency which is vital to reduce the prevalence of online CSA and safeguard society’s youth.

The thesis has provided empirical evidence of a relatively new theory of online sexual grooming proposed by Elliott in 2015, which can aid the formulation of treatment needs for this offence population. However, it should be noted that the evidence presented in this thesis is preliminary and exploratory in nature and requires peer review and replication in order for the findings and subsequent recommendations to be validated.

The finding that different offence motives might be detectable in the grooming narrative has implications for detection strategies and may assist in risk and prioritisation decisions. This has implications for legislation and policy, which until recently only classed grooming as an offence if a perpetrator travels to meet a child. The relevance of this thesis was demonstrated by the introduction of a new UK law on the 3rd April 2017 that now makes it illegal for anyone over the age of 18 years old to intentionally engage in sexual communications with a child under the age of 16 years old under Section 67 of the Serious Crime Act (2015). This law was introduced in response to groomers targeting children though electronic Internet-mediated devices and it can be employed regardless of whether an offender attempts to meet with their victim (Ministry of Justice, 2017). This new law is a positive move towards addressing non-contact grooming offences and highlights a growing awareness of this phenomenon.

References

- Abel, G. G., Becker, J. V., & Cunningham-Rathner, J. (1984). Complications, consent, and cognitions in sex between children and adults. *International Journal of Law and Psychiatry*, 7(1), 89–103. doi:10.1016/0160-2527(84)90008-6.
- Abel, G. G., Becker, J. V., Cunningham-Rathner, J., Mittelman, M. S., Murphy, W. D., & Rouleau, J. L. (1987). Self-reported sex crimes of nonincarcerated paraphiliacs. *Journal of Interpersonal Violence*, 2(1), 3–25. doi:10.1177/088626087002001001.
- Abel, G. G., Huffman, J., Warberg, B., & Holland, C. L. (1998). Visual reaction time and plethysmography as measures of sexual interest in child molesters. *Sexual Abuse: A Journal of Research and Treatment*, 10(2), 81–95. doi:10.1177/107906329801000202.
- Akerman, G., & Beech, A. R. (2012). A Systematic Review of Measures of Deviant Sexual Interest and Arousal. *Psychiatry, Psychology and Law*, 19(1), 118–143. doi:10.1080/13218719.2010.547161.
- Alexy, E. M., Burgess, A. W., & Baker, T. (2005). Internet offenders. *Journal of Interpersonal Violence*, 20(7), 804–812. doi:10.1177/0886260505276091.
- American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders Fourth Edition, Text Revision* (DSM-IV-TR). (4th ed). Washington, DC: APA. doi:10.1176/appi.books.9780890423349.
- Aslan D. (2011). Critically evaluating typologies of internet sex offenders: A psychological perspective. *Journal of Forensic Psychology Practice*, 11(5), 406–431. doi:10.1080/15228932.2011.588925.
- Babchishin, K. M., Hanson, R. K., & Hermann, C. A. (2010). The characteristics of online sex offenders: A meta-analysis. *Sexual Abuse: A Journal of Research and Treatment*, 23(1), 92–123. doi:10.1177/1079063210370708.
- Babchishin, K. M., Hanson, R. K., & VanZuylen, H. (2014). Online child pornography offenders are different: A Meta-analysis of the characteristics of online and offline sex offenders against children. *Archives of Sexual Behavior*, 44(1), 45–66. doi:10.1007/s10508-014-0270-x.
- Baldwin, K., & Roys, D. T. (1998). Factors associated with denial in a sample of alleged adult sexual offenders. *Sexual Abuse: A Journal of Research and Treatment*, 10(3), 211–226. doi:10.1177/107906329801000305.

- Banase, R., Schmidt, A. F., & Clarbour, J. (2010). Indirect measures of sexual interest in child sex offenders. *Criminal Justice and Behavior*, 37(3), 319–335. doi:10.1177/0093854809357598.
- Bandura, A. (1971). *Social Learning Theory*. New York: General Learning Corporation, Retrieved 20th November 2016 from:
http://www.jku.at/org/content/e54521/e54528/e54529/e178059/Bandura_SocialLearningTheory_ger.pdf.
- Barratt, E. S. (1994). Impulsiveness and aggression. In J. Monahan & H. J. Steadman (Eds.), *Violence and mental disorder: Developments in risk assessment* (pp. 61-79). Chicago: University of Chicago Press.
- Becker, J. V. and Kaplan, M. (1990). Assessment of adult sex offenders. In P. Reynolds, J. Rosen, & C. Chelune (Eds.), *Advances in psychological assessment* (7th ed.) (pp. 261–283). New York: Plenum.
- Beckett, R. C. (1987). The Children and Sex Questionnaire. Available from Richard Beckett, Room FF39, The Oxford Clinic, Littlemore Health Centre, Sanford Rd., Littlemore, Oxford, UK.
- Beckett, R. C., & Fisher, D. (1994, November). *Assessing victim empathy: A new measure*. Paper presented at the 13th Annual Conference of the Association for the Treatment of Sexual Abusers, San Francisco.
- Beech, A. R. (1998). A psychometric typology of child abusers. *International Journal of Offender Therapy and Comparative Criminology*, 42(4), 319–339. doi:10.1177/0306624x9804200405.
- Beech, A. R., Elliott, I. A., Birgden, A., & Findlater, D. (2008). The Internet and child sexual offending: A criminological review. *Aggression and Violent Behavior*, 13(3), 216–228. doi:10.1016/j.avb.2008.03.007.
- Beech, A. R., Fisher, D., & Beckett, R. (1998). *Step 3: An evaluation of the prison sex offender treatment programme. (UK Home Office Occasional Report)*. London: HMSO. Retrieved 6th November from:
<http://webarchive.nationalarchives.gov.uk/20110218135832/http://rds.homeoffice.gov.uk/rds/pdfs/occ-step3.pdf>.
- Bennell, C., Alison, L. J., Stein, K. L., Alison, E. K., & Canter, D. V. (2001). Sexual offenses against children as the abusive exploitation of conventional adult-child relationships. *Journal of Social and Personal Relationships*, 18(2), 155–171. doi:10.1177/0265407501182001.

- Berliner, L., & Conte, J. R. (1990). The process of victimization: The victims' perspective. *Child Abuse and Neglect*, 14(1), 29-40. doi:10.1016/0145-2134(90)90078-8.
- Bernard, G., Fuller, A., Robbins, L., & Shaw, T. (1989). *The child molester*. New York: Brunner/Mazel.
- Berson, I. R. (2003). Grooming cybervictims: The psychosocial effects of online exploitation for youth. *Journal of School Violence*, 2(1), 5-18. doi:10.1300/j202v02n01_02.
- Black, P. J., Wollis, M., Woodworth, M., & Hancock, J. T. (2015). A linguistic analysis of grooming strategies of online child sex offenders: Implications for our understanding of predatory sexual behavior in an increasingly computer mediated world. *Child Abuse & Neglect*, 44, 140-149. doi:10.1016/j.chiabu.2014.12.004.
- Blagden, N., Winder, B., Gregson, M., & Thorne, K. (2014). Making sense of denial in sexual offenders. *Journal of Interpersonal Violence*, 29(9), 1698-1731. doi:10.1177/0886260513511530.
- Blanchard, R., Lykins, A., Wherrett, D., Kuban, M., Cantor, J., Blak, T., Dickey, R., & Klassen, P. (2009). Pedophilia, hebephilia and the DSM-V. *Archives of Sexual Behavior*, 38(3), 335-350. doi: 10.1007/s10508-008-9399-9.
- Bogdanova, D., Rosso, P., & Solorio, T. (2012). *Modelling fixated discourse in chats with cyberpedophiles*. In the 13th Conference of the European Chapter of the Association for Computational Linguistics. Proceedings of the workshop on computational approaches to deception detection (April 2012) (pp. 86-90). Retrieved 27th April 2015 from: <http://www.aclweb.org/anthology/W/W12/W12-0413.pdf>.
- Bourke, M. L., & Hernandez, A. E. (2009). The "Butner Study redux": A report of the incidence of hands-on child victimisation by child pornography offenders. *Journal of Family Violence*, 24(3), 183-191. doi:10.1007/s10896-008-9219-y.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. doi:10.1191/1478088706qp063oa.
- Briggs, P., Simon, W. T., & Simonsen, S. (2011). An exploratory study of Internet-initiated sexual offenses and the chat room sex offender: Has the Internet enabled a new typology of sex offender? *Sexual Abuse: A Journal of Research and Treatment*, 23(1), 72-91. doi:10.1177/1079063210384275.
- Brown, W. (1910). Some experimental results in the correlation of mental abilities. *British Journal of Psychology*, 3(3), 296-322. doi:10.1111/j.2044-8295.1910.tb00207.x.

- Bryce, J. (2010). Online sexual exploitation of children and young people. In Y. E. Jewkes & M. E. Yar (Eds.), *Handbook of Internet crime* (pp. 320–342). Cullompton, England: Willan Publishing.
- Cano, A. E., Fernandez, M., & Alani, H. (2014). Detecting child grooming behaviour patterns on social media. In L. M. Aiello, & D. McFarland (Eds.), *Social Informatics: 6th International Conference. SocInfo Proceedings* (pp. 412–427). Springer.
- Cantor, J. M., Kabani, N., Christensen, B. K., Zipursky, R. B., Barbaree, H. E., Dickey, R., ... Blanchard, R. (2008). Cerebral white matter deficiencies in pedophilic men. *Journal of Psychiatric Research*, 42(3), 167–183. doi:10.1016/j.jpsychires.2007.10.013.
- Campbell, A. M. (2009). False faces and broken lives: An exploratory study of the interaction behaviors used by male sex offenders in relating to victims. *Journal of Language and Social Psychology*, 28(4), 428–440. doi:10.1177/0261927x09341948.
- Carr, J. (2004). *Child abuse, child pornography and the Internet*. London: NCH, the Children's Charity.
- Carver, C. S., & Scheier, M. F. (1981). *Attention and self-regulation: A control-theory approach to human behaviour*. New York: Springer-Verlag.
- CASP (2015). *Critical appraisal skills programme (CASP)*. Retrieved 2nd April 2015 from: <http://www.casp-uk.net/>.
- Chandler, R. J., Swift, C., & Goodman, W. (2016). Treating online inappropriate sexualised behaviour. *Journal of Intellectual Disabilities and Offending Behaviour*, 7(3), 151–160. doi:10.1108/jidob-11-2015-0045.
- Chase, E., & Statham, J. (2005). Commercial and sexual exploitation of children and young people in the UK: A review. *Child Abuse Review*, 14(1), 4–25. doi:10.1002/car.881.
- Cattell, R. B. (1950). *The sixteen personality factor questionnaire*. Champaign, Illinois: Institute for Personality and Ability Testing.
- Cherry, M. G., & Dickson, R. (2014). Defining my review question and identifying inclusion criteria. In A. Boland, M. G. Cherry, & R. Dickson (Eds). *Doing a systematic review: A student's guide*. London: Sage.
- Cherry, M. G., Perkins, E., Dickson, R., & Boland, A. (2014). Reviewing qualitative evidence, In A. Boland, M. G. Cherry, & R. Dickson (Eds). *Doing a systematic review: A student's guide*. London: Sage.
- Child Exploitation and Online Protection Centre [CEOP] (2013). *Threat assessment of child sexual exploitation and abuse*. Retrieved 1st April 2016 from:

https://www.ceop.police.uk/Documents/ceopdocs/CEOP_TACSEA2013_240613%20FINAL.pdf.

- Child Exploitation and Online Protection Centre [CEOP] (2012). A picture of abuse: a thematic assessment of the risk of contact child sexual abuse posed by those who possess indecent images of children (executive summary). *Threat Assessment of Child Sexual Exploitation and Abuse*. Retrieved 22nd April 2017 from: <https://www.ceop.police.uk/Documents/ceopdocs/CEOP%20IIIOCTA%20Executive%20Summary.pdf>.
- Child Exploitation and Online Protection Centre [CEOP] (2010). *Annual review 2009-2010*. Retrieved 1st April 2016 from: <http://ceop.police.uk/Publications/>.
- Child Exploitation and Online Protection Centre [CEOP] (2008). *Strategic overview 2007-2008*. Retrieved 1st April 2016 from: <http://ceop.police.uk/Publications/>.
- Chronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, 52(4), 281–302. doi:10.1037/h0040957.
- Clarke, M., & Grier, P. E. (1995). Using the Multiphasic Sex Inventory with child molesters. *Psychological Reports*, 77(2), 623–625. doi:10.2466/pr0.1995.77.2.623.
- Collins, S., & Duff, S. (2016). The precondition model as a method for developing understanding of female contact and non-contact sex offending: A single case study. *The International Journal of Forensic Mental Health*, 15(1), 111–124. doi:10.1080/14999013.2016.1138345.
- Conte, J. R., Wolf, S., & Smith, T. (1988). What sexual perpetrators tell us about prevention strategies. *Child Abuse & Neglect*, 13(2), 293–301. doi:10.1016/0145-2134(89)90016-1.
- Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis for field settings*. Chicago: Rand McNally.
- Cooke, A., Smith, D., & Booth, A. (2012). Beyond PICO: The SPIDER tool for qualitative evidence synthesis. *Qualitative Health Research*, 22(10), 1435–1443. doi: 10.1177/1049732312452938.
- Cooper, A., Golden, G., & Marshall, W. L. (2006). Online sexuality and online sexual problems: Skating on thin ice. In W. L. Marshall, Y. M. Fernandez, L. E. Marshall, & G. A. Serran (Eds.), *Sexual offender treatment: Controversial issues* (pp. 79–91). Chichester: Wiley.
- Cooper, A. (1998). Sexuality and the internet: Surfing into the new millennium. *CyberPsychology and Behavior*, 1(2), 187–193. doi:10.1089/cpb.1998.1.187.

- Cossins, A. (2002). The hearsay rule and delayed complaints of child sexual abuse: The law and the evidence. *Psychiatry, Psychology and Law*, 9(2), 163–176. doi:10.1375/pplt.2002.9.2.163.
- Coy, M., & Garner, M. (2012). Definitions, discourses and dilemmas: Policy and academic engagement with the sexualisation of popular culture. *Gender and education*, 24(3), 285–301. doi: 10.1002/car.1094.
- Craig, L. A., Browne, K. D., Beech, A., & Stringer, I. (2007). Psychosexual characteristics of sexual offenders and the relationship to sexual reconviction. *Psychology, Crime & Law*, 12(3), 231–243. doi:10.1080/10683160500151084.
- Craig, L. A., Thornton, D., Beech, A. R., & Browne, K. D. (2007). The relationship of statistical and psychological risk markers to sexual reconviction in child molesters. *Criminal Justice and Behaviour*, 34(3), 314–329. doi:10.1177/0093854806291416.
- Cramer, D., & Howitt, D. (1998). Romantic love and the psychology of sexual behavior: Open and closed secrets. In V. C. de Munck (Ed.), *Romantic love and sexual behavior: Perspectives from the social sciences* (pp. 113–132). Westport, CT: Praeger Publishers/Greenwood.
- Craven, S., Brown, S., & Gilchrist, E. (2006). Sexual grooming of children: Review of literature and theoretical considerations. *Journal of Sexual Aggression*, 12(3), 287–299. doi:10.1080/13552600601069414.
- Craven, S., Brown, S., & Gilchrist, E. (2007). Current responses to sexual grooming: Implication for prevention. *Howard Journal of Criminal Justice*, 46(1), 60–71. doi:10.1111/j.1468-2311.2007.00454.x.
- Creswell, J. (2008). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage.
- Crowe, M., & Sheppard, L. (2011). A review of critical appraisal tools. *Journal of Clinical Epidemiology*, 64(1), 79–89. doi:10.1016/j.jclinepi.2010.02.008.
- Dahlstrom, W. G., Welsh, G. S., & Dahlstrom, L. E. (1975). *An MMPI handbook, volume II: Research applications*. Minneapolis: University of Minnesota Press.
- Dancey, C. P., & Reidy, J. (2007). *Statistics without maths for psychology* (4th ed.). Harlow: Pearson Education Limited.
- Davies, K. S. (2011). Formulating the evidence based practice question: A Review of the Frameworks. *Evidence Based Library and Information Practice*, 6(2), 75–80. doi:10.18438/b8ws5n.
- Davis, M. H. (1980). A multi-dimensional approach to individual differences in empathy.

- JSAS Catalogue to Selected Documents in Psychology*, 10, 85. Retrieved 20th April 2017 from:
http://www.ucp.pt/site/resources/documents/ICS/GNC/ArtigosGNC/AlexandreCastroCaldas/24_Da80.pdf.
- Davidson, J. C., & Gottschalk, P. (2011). *Internet child abuse: Current research and policy*. New York: Routledge.
- de Almeida Neto, A. C., Eyland, S., Ware, J., Galouzis, J., & Kevin, M. (2013). Internet sexual offending: Overview of potential contributing factors and intervention strategies. *Psychiatry, Psychology and Law*, 20(2), 168–181. doi:10.1080/13218719.2011.633328.
- DeHart, D., Dwyer, G., Seto, M. C., Moran, R., Letourneau, E., & Schwarz-Watts, D. (2017). Internet sexual solicitation of children: a proposed typology of offenders based on their chats, e-mails, and social network posts. *Journal of Sexual Aggression*, 23(1), 77-89. doi: 10.1080/13552600.2016.1241309.
- Diermenijan, J. M. (2002). Pedophilia on the Internet. *Journal of Forensic Sciences*, 47(5), 1090-1092. doi:10.1520/jfs15487j.
- Dombrowski, S. C., LeMasney, J. W., Ahia, C. E., & Dickson, S. A. (2004). Protecting children from online sexual predators: technological, psychoeducational, and legal considerations. *Professional Psychology: Research and Practice* 35(1), 65–73. doi:10.1037/0735-7028.35.1.65.
- Dowdell, E. B., Burgess, A. W., & Flores, J. R. (2011). Online social networking patterns among adolescents, young adults, and sexual offenders. *American Journal of Nursing*, 111(7), 28–36. doi:10.1097/01.naj.0000399310.83160.73.
- Dowling, N., Smith, D., Proeve, M., & Lee, J. K. P. (2000). The Multiphasic Sex Inventory: A comparison of American and Australian samples of sexual offenders. *Australian Psychologist*, 35(3), 244–248. doi:10.1080/00050060008257486.
- Drouin, M., Boyd, R. L., Hancock, J. T., & James, A. (2017). Linguistic analysis of chat transcripts from child predator undercover sex stings. *The Journal of Forensic Psychiatry & Psychology*, 1–21. doi:10.1080/14789949.2017.1291707.
- Dundar, Y., & Fleeman, N. (2014). Developing my search strategy and applying inclusion criteria. In A. Boland, M. G. Cherry, & R. Dickson (Eds), *Doing a systematic review: A student's guide*. London: Sage.

- Durkin, K. F. (1997). Misuse of the Internet by pedophiles: Implications for law enforcement and probation practice. *Federal Probation*, 61(3), 14–18. doi:10.4135/9781452229454.n14.
- Egan, V., Hoskinson, J., & Shewan, D. (2011). Perverted justice: A content analysis of the language used by offenders detected attempting to solicit children for sex. *Antisocial Behavior: Causes, Correlations and Treatments*. Retrieved 12th April 2015 from: http://www.researchgate.net/publication/47867576_Perverted_Justice_A_Content_Analysis_of_the_Language_Used_by_Offenders_Detected_Attempting_to_Solicit_Children_for_Sex.
- Elliott, I. A. (2015). A Self-Regulation Model of sexual grooming. *Trauma, Violence, & Abuse*, 18(1), 83–97. doi:10.1177/1524838015591573.
- Elliott, I. A. (2014, July 18). *Can we analyze word associations in online solicitation texts?* [Weblog post]. Retrieved 13th April, 2015 from: <http://wp.me/p2RS15-5B>.
- Elliott, I. A., & Beech, A. R. (2009). Understanding online child pornography use: Applying sexual offense theory to internet offenders. *Aggression and Violent Behavior*, 14(3), 180–193. doi:10.1016/j.avb.2009.03.002.
- Elliott, I. A., Beech, A. R., & Mandeville-Norden, R. (2013). The psychological profiles of Internet, contact, and mixed Internet/contact sex offenders. *Sexual Abuse: A Journal of Research and Treatment*, 25(1), 3-20. doi:10.1177/1079063212439426.
- Elliott, I. A., Beech, A. R., Mandeville-Norden, R., & Hayes, E. (2009). Psychological profiles of Internet sexual offenders: Comparisons with contact sexual offenders. *Sexual Abuse: A Journal of Research and Treatment*, 21(1), 76-92. doi:10.1177/1079063208326929.
- Elliott, M., Browne, K., & Kilcoyne, J. (1995). Child sexual abuse prevention: What perpetrators tell us. *Child Abuse & Neglect*, 19(5), 579–594. doi:10.1016/0145-2134(95)00017-3.
- Ellison, N., Heino, R., & Gibbs, J. (2006). Managing impressions online: Self-presentation processes in the online dating environment. *Journal of Computer-Mediated Communication*, 11(2), 415–441. doi:10.1111/j.1083-6101.2006.00020.x.
- Elmes, D. G., Kantowitz, B. H., & Roediger, H. L. (2006). *Research methods in psychology* (8th ed.). Wadsworth CA: Thomas Learning Inc.
- European Chapter of the Association for Computational Linguistics [EACL] (April, 2012). *Proceedings of the workshop on computational approaches to deception detection*.

- 13th Conference of the European Chapter of the Association for Computational Linguistics.
- Europol (2015). *Europol Review 2015: Cybercrime*. Retrieved 22nd April 2017 from: https://www.europol.europa.eu/annual_review/2015/cybercrime.html.
- Eysenck, H. J. (1950). Criterion analysis: An application of the hypothetico-deductive method to factor analysis. *Psychological Review*, 57(1), 38–53. doi:10.1037/h0057657.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149–1160. doi:10.3758/brm.41.4.1149.
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191. doi:10.3758/bf03193146.
- Finkel, E. J., Eastwick, P., Karney, B. R., Reis, H. T., & Sprecher, S. (2012). Online dating: A critical analysis from the perspective of psychological science. *Psychological Science in the Public Interest*, 13(1), 3–66. doi:10.1177/1529100612436522.
- Finkelhor, D. (2014). Commentary: Cause for alarm? Youth and internet risk research: A commentary on Livingstone and Smith (2014). *Journal of Child Psychology and Psychiatry*, 55(6), 655–658. doi:10.1111/jcpp.12260.
- Finkelhor, D. (1984). *Child sexual abuse: New theory and research*. New York: Free Press.
- Fleeman, N., & Dunder, Y. (2015). Data extraction: Where do I begin? In A. Boland, M. G. Cherry & R. Dickson (Eds), *Doing a systematic review: A student's guide*. London: Sage.
- Freund, K., & Blanchard, R. (1989). Phallometric diagnosis of pedophilia. *Journal of Consulting and Clinical Psychology*, 57(1), 100–105. doi:10.1037/0022-006x.57.1.100.
- Friday, N. (2001). *My secret garden: Women's sexual fantasies*. London: Quartet.
- Gallagher, B., Fraser, C., Christmann, K., & Hodgson, B. (2006). *International and internet child sexual abuse and exploration: Research report*. Huddersfield, UK: Centre for Applied Childhood Studies: University of Huddersfield. Retrieved 12th April 2015 from: <http://eprints.hud.ac.uk/461/1/1Gallagher2006.pdf>.
- Gannon, T. A., Rose, M. R., & Ward, T. (2008). A descriptive model of the offense process for female sexual offenders. *Sexual Abuse: Journal of Research and Treatment*, 20(3), 352–374. doi:10.1177/1079063208322495.

- Gilgun, J. F. (1994). Avengers, conquerors, playmates, and lovers: Roles played by child sexual abuse perpetrators. *Families in Society*, 75(8), 467-480. Retrieved 30th April 2017 from: <https://search-proquest-com.ezproxye.bham.ac.uk/docview/230156156?accountid=8630>.
- Gillespie, A. (2002). Child protection on the Internet: Challenges for criminal law. *Child and Family Law Quarterly*, 14(4), 411–426. Retrieved 30th April 2017 from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2084816.
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8. Retrieved 27th April 2015 from: <http://www.nova.edu/ssss/QR/QR8-4/golafshani.pdf>.
- Goldman, J. D. G., & Padayachi, U. K. (2000). Some methodological problems in estimating incidence and prevalence in child sexual abuse research. *Journal of Sex Research*, 37(4), 305–314. doi:10.1080/00224490009552052.
- Gordon, H. (2008). The treatment of paraphilias: An historical perspective. *Criminal Behaviour and Mental Health*, 18(2), 79–87. doi:10.1002/cbm.687.
- Griffiths, M. (2000). Excessive internet use: Implications for sexual behavior. *Cyber-Psychology and Behavior*, 3(4), 537–552. doi:10.1089/109493100420151.
- Grosskopf, A. (2010). Online interactions involving suspected paedophiles who engage in male children. *Trends & Issues in Crime and Criminal Justice*, 403. Retrieved 1st April 2016 from: http://www.aic.gov.au/media_library/publications/tandi_pdf/tandi403.pdf.
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough?: An experiment with data saturation and variability. *Field Methods*, 18(1), 59–82. doi:10.1177/1525822x05279903.
- Gupta, A., Kumaraguru, P., & Sureka, A. (2012). Characterizing pedophile conversations on the Internet using online sexual grooming. *New Delhi: Indraprastha Institute of Information Technology*. doi: 10.1145/2994459.2994471. Retrieved 2nd May 2015 from: <http://precog.iiitd.edu.in/>.
- G*Power (2015). *G*Power*. Retrieved 9th April 2016 from: <http://www.gpower.hhu.de/>.
- Hanson, R. K., & Bussière, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology*, 66(2), 348–362. doi:10.1037/0022-006x.66.2.348.
- Hanson, R. K., & Morton-Bourgon, K. E. (2005). The characteristics of persistent sexual offenders: A meta-analysis of recidivism studies. *Journal of Consulting and Clinical*

- Psychology*, 73(6), 1154–1163. doi:10.1037/0022-006x.73.6.1154.
- Hanson, R. K., & Thornton, D. (2000). Improving risk assessment for sex offenders: A comparison of three actuarial scales. *Law and Human Behavior*, 24(1), 119–136. doi:10.1023/a:1005482921333.
- Hill, A., Briken, P., & Berner, W. (2007). Pornography and sexual abuse in the internet. *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz*, 50(1), 90–102. doi:10.1007/s00103-007-0114-8.
- Holland, L. A., Zolondek, S. C., Abel, G. G., Jordan, A. D., & Becker, J. V. (2000). Psychometric analysis of the Sexual Interest Cardsort Questionnaire. *Sexual Abuse: Journal of Research and Treatment*, 12(2), 107–122. doi:10.1177/107906320001200203.
- Home Office (2003). *Sexual Offences Act 2003*. Retrieved 1st April 2015 from: <http://www.legislation.gov.uk/ukpga/2003/42/contents>.
- Hui, D. T. L., Xin, C. W., & Khader, M. (2015). Understanding the behavioral aspects of cyber sexual grooming: Implications for law enforcement. *International Journal of Police Science & Management*, 17(1), 40–49. doi:10.1177/1461355714566782.
- Itzin, C. (2001). Incest, paedophilia, pornography and prostitution: Making familial males more visible as the abusers. *Child Abuse Review*, 10(1), 35–48. doi:10.1002/car.649.
- Jung, S., & Nunes, K. (2012). Denial and its relationship with treatment perceptions among sex offenders. *Journal of Forensic Psychiatry & Psychology*, 23(4), 485–496. doi:10.1080/14789949.2012.697567.
- Kafka, M. P. (2006). The monoamine hypothesis for the pathophysiology of paraphilic disorders: An update. *Annals of the New York Academy of Sciences*, 989(1), 86–94. doi:10.1111/j.1749-6632.2003.tb07295.x.
- Kalichman, S. C., Henderson, M. C., Shealy, L. S., & Dwyer, M. (1992). Psychometric properties of the multiphasic sex inventory in assessing sex offenders. *Criminal Justice and Behavior*, 19(4), 384–396. doi:10.1177/0093854892019004003.
- Kalmer, D. A., & Sternberg, R. J. (1988). Theory knitting: An integrative approach to theory development. *Philosophical Psychology*, 1(2), 153–170. doi:10.1080/09515088808572934.
- Kalmus, E., & Beech, A. R. (2005). Forensic assessment of sexual interest: A review. *Aggression and Violent Behavior*, 10(2), 193–217. doi:10.1016/j.avb.2003.12.002.
- Kaplan, H. S. (1974). *The new sex therapy*. New York: Brunner/Mazel.

- Katz, C. (2013). Internet-related child sexual abuse: What children tell us in their testimonies. *Children and Youth Services Review*, 35(9), 1536–1542. doi:10.1016/j.childyouth.2013.06.006.
- Keltner, A. A., Marshall, P. G., & Marshall, W. L. (1981). Measurement and correlation of assertiveness and social fear in a prison population. *Corrective and Social Psychiatry*, 27, 41-47. In Elliott, I. A., Beech, A. R., Mandeville-Norden, R., & Hayes, E. (2009). Psychological profiles of Internet sexual offenders: Comparisons with contact sexual offenders. *Sexual Abuse: A Journal of Research and Treatment*, 21(1), 76-92. doi:10.1177/1079063208326929.
- Kloess, J. A., Beech, A. R., & Harkins, L. (2014). Online child sexual exploitation: Prevalence, process, and offender characteristics. *Trauma, Violence, & Abuse*, 15(2), 126–139. doi:10.1177/1524838013511543.
- Kloess, J. A., Seymour-Smith, S., Hamilton-Giachritsis, C. E., Long, M. L., Shipley, D., & Beech, A. R. (2015). A qualitative analysis of offender's modus operandi in sexually exploitative interactions with children online. *Sexual Abuse: A Journal of Research and Treatment*, 1-29. doi:10.1177/1079063215612442.
- Kopecky, K. (2014). A brief introduction to the issue of online blackmail of czech children with a focus on sextortion. [Strucny uvod do problematiky online vydirani ceskych deti se zamerenim na tzv. sextortion.] *Pediatric Pro Praxi*, 15(6), 352-354. Retrieved 30th April 2017 from: <http://www.pediatricpropraxi.cz/pdfs/ped/2014/06/07.pdf>.
- Krone, T. (2005). Queensland police strings in online chat rooms. *Trends & Issues in Crime and Criminal Justice*. Retrieved 1st April 2016 from: http://www.aic.gov.au/media_library/publications/tandi_pdf/tandi301.pdf.
- Kuder, G. F., & Richardson, M. W. (1937). The theory of the estimation of test reliability. *Psychometrika*, 2(3), 151–160. doi:10.1007/bf02288391.
- Lalumiere, M. L., & Quinsey, V. L. (1994). The discriminability of rapists from non-sex-offenders using phallometric measures: A meta-analysis. *Criminal Justice and Behaviour*, 21(1), 150–175. doi:10.1177/0093854894021001010.
- Lambert, S., & O'Halloran, E. (2008). Deductive thematic analysis of a female paedophilia website. *Psychiatry, Psychology and Law*, 15(2), 284–300. doi:10.1080/13218710802014469.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics* 33(1), 159. doi:10.2307/2529310.

- Lang, R. A., & Frenzel, R. R. (1988). How sex perpetrators lure children. *Annals of Sex Research, 1*(2), 303–317. doi:10.1007/bf00852802.
- Lanning, K. V. (1998). Cyber pedophiles. *Practical Aspects of Rape Investigation*, 381–407. doi:10.1201/9781420065053.sec4/.
- Laws, D. R., & Marshall, W. L. (1990). A conditioning theory of the etiology and maintenance of deviant sexual preference and behaviour. In W. L. Marshall, D. R. Laws & H. E. Barbaree (Eds), *Handbook of sexual assaults: Issues, theories, and treatment of the offender* (pp. 209-230). New York: Plenum Press.
- Lawson, L. (2003). Isolation, gratification, justification: Perpetrators' explanations of child molesting. *Issues in Mental Health Nursing, 24*(6-7), 695–705. doi:10.1080/01612840305328.
- Leberg, E. (1997). *Understanding child molesters: Taking charge*. Thousand Oaks, CA: Sage Publications.
- Leclerc, B., Proulx, J., & Beauregard, E. (2009). Examining the modus operandi of sexual offenders against children and its practical implications. *Aggression and Violent Behavior, 14*(1), 5–12. doi:10.1016/j.avb.2008.08.001.
- Leclerc, B., Wortley, R., & Smallbone, S. (2011). Getting into the script of adult child sex offenders and mapping out situational prevention measures. *Journal of Research in Crime and Delinquency, 48*(2), 209–237. doi:10.1177/0022427810391540.
- Lefebvre, C., Manheimer, E., & Glanville, J. (2008). Chapter 6: Searching for studies. In Higgins, J. P. T., & Green, S. (Eds), *Cochrane Handbook for Systematic Reviews of Interventions*. The Cochrane Collaboration. Retrieved 14th April 2015 from: www.cochrane-handbook.org.
- LIWC (2015). *Linguistic Inquiry and Word Count*. Retrieved 13th April 2017 from: <http://www.liwc.net/>.
- Lucy Faithfull Foundation (2017). *Lucy Faithfull Foundation*. Retrieved 25th April 2017 from: <https://www.lucyfaithfull.org.uk>.
- Navarro J. N., & Jasinski J. L. (2015). Demographic and motivation differences among online sex offenders by type of offense: An exploration of routine activities theories. *Journal of Child Sexual Abuse, 24*(7), 753-771. doi:10.1080/10538712.2015.1077363.
- Mackaronis, J. E., & Strassberg, D. S. (2011). The latent structure of the Multiphasic Sex Inventory- Assessed pedophilic interest. *Psychological Assessment, 23*(4), 1017–1022. doi:10.1037/a0024625.
- Malesky, L. A. (2007). Predatory online behaviour: Modus operandi of convicted sex

- offenders in identifying potential victims and contacting minors over the Internet. *Journal of Child Sexual Abuse*, 16(2), 23–32. doi:10.1300/j070v16n02_02.
- Mallett, S., Hopewell, S., & Clarke, M. (2002). Grey literature in systematic reviews: The first 1000 Cochrane systematic reviews. *Fourth Symposium on Systematic Reviews: Pushing the Boundaries*. Oxford, UK.
- Marcum, C. (2007). Interpreting the intentions of Internet predators: An examination of online predatory behaviour. *Journal of Child Sexual Abuse*, 16(4), 99–114. doi:10.1300/j070v16n04_06.
- Marshall, W. L. (2007). Diagnostic issues, multiple paraphilias, and comorbid disorders in sexual offenders: Their incidence and treatment. *Aggression and Violent Behavior*, 12(1), 16–35. doi:10.1016/j.avb.2006.03.001.
- Marshall, W. L., & Fernandez, Y. M. (2003). Sexual preferences: Are they useful in the assessment and treatment of sexual offenders? *Aggression and Violent Behavior*, 8(2), 131–143. doi:10.1016/s1359-1789(01)00056-8.
- Martellozzo, E. (2013). *Online child sexual abuse: Grooming, policing and child protection in a multi-media world*. New York: Routledge.
- Matsunaga, M. (2010). How to factor-analyze your data right: do's, don't's, and how-to's. *International Journal of Psychological Research* 3(1), 97–110. Retrieved 30th April 2017 from: <http://www.redalyc.org/pdf/2990/299023509007.pdf>.
- McAlinden, A. M. (2006). “Setting ‘em up’”: Personal, familial and institutional grooming in the sexual abuse of children. *Social and Legal Studies*, 15(3), 339–362. doi:10.1177/0964663906066613 .
- McCary, J. L. (1971). *Sexual myths and fallacies*. New York: Van Nostrand Reinhold.
- McGhee, I., Bayzick, J., Kontosathis, A., Edwards, L., McBride, A., & Jakubowski, E. (2011). Learning to identify Internet sexual predation. *International Journal of the Electronic Commerce*, 15(3), 103–122. doi:10.2753/jec1086-4415150305.
- McGuire, M. (2013). Cyber crime: A review of the evidence, Chapter 3: Cyber-enabled crimes- sexual offending against children. *Home Office Research Report 75*. Retrieved February 2017 from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/246754/horr75-chap3.pdf.
- McGuire, R. J., Carlisle, J. M., & Young, B. G. (1965). Sexual deviations as a conditioned behaviour: A hypothesis. *Behaviour, Research and Therapy*, 2(2-4), 185–190. doi:10.1016/0005-7967(64)90014-2.

- McHugh, M. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica*, 22, 276-282. doi:10.11613/BM.2012.031.
- McLaughlin, J. F. (2004). Characteristics of a fictitious child victim: Turning a sex offender's dream into his worst nightmare. *International Journal of Communication Law and Policy*. Retrieved July 2012 from: http://ijclp.net/old_website/Cy_2004/pdf/McLaughlin_ijclp-paper.pdf.
- McManus, M. A., Almond, L., Cubbon, B., Boulton, L., & Mears, I. (2015). Exploring the online communicative themes of child sex offenders. *Journal of Investigative Psychology and Offender Profiling*, 13(2), 166–179. doi:10.1002/jip.1450.
- Middleton, D. (2004). Current treatment approaches. In M. Calder (Ed.), *Child sexual abuse and the Internet: Tackling the new frontier* (pp. 99-112). Lyme Regis: Russell House Publishing.
- Ministry of Justice (2017). *New crackdown on child groomers comes into force*. Press Release. Retrieved 3rd April 2017 from: <https://www.gov.uk/government/news/new-crackdown-on-child-groomers-comes-into-force>.
- Mitchell, K. J., Wolak, J., & Finkelhor, D. (2005). Police posing as juveniles online to catch sex offenders: Is it working? *Sexual Abuse: Journal of Research and Treatment*, 17(3), 241–267. doi:10.1177/107906320501700302.
- Nichols, H., & Molinder, I. (1984). *Manual for the Multiphasic Sex Inventory*. Tacoma, WA: Nichols & Molinder Assessments.
- Nichols & Molinder Assessment INC (2010). *Nichols & Molinder Assessment INC: Experts in Sex Offender Assessment and Treatment*. Retrieved 5th November 2016 from: <http://www.nicholsandmolinder.com/sex-offender-assessment-authors.php>.
- Nowicki, S., & Duke, M. P. (1974). A locus of control scale for college as well as non-college adults. *Journal of Personality Assessment*, 38(2), 136–137. doi:10.1080/00223891.1974.10119950.
- National Society for the Prevention of Cruelty to Children. [NSPCC] (2016). *Childline annual review 2015/16: It turned out someone did care*. London: NSPCC.
- O'Connell, R. (2003). *A typology of child cybersexexploitation and online sexual grooming practices*. Retrieved 1st April from: http://www.jisc.ac.uk/uploaded_documents/lis_PaperJPrice.pdf.
- O'Cathain, A. (2010). Assessing the quality of mixed methods research: towards a comprehensive framework. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed*

- methods in social and behavioral research* (pp. 531-555). Thousand Oaks, California: Sage.
- Olson, L. N., Daggs, J. L., Ellevold, B. L., & Rogers, T. K. K. (2007). Entrapping the innocent: Toward a theory of child sexual predators' Luring Communication. *Communication Theory*, 17(3), 231–251. doi:10.1111/j.1468-2885.2007.00294.x.
- Osborn, J., Elliott, I., Middleton, D., & Beech, A. (2010). The use of actuarial risk assessment measures with UK internet child pornography offenders. *Journal of Aggression, Conflict and Peace Research*, 2(3), 16–24. doi:10.5042/jacpr.2010.0333.
- Ospina, M., Harstall, C., & Denet, L. (2010). *Sexual exploitation of children and youth over the internet: A rapid review of the scientific literature*. Institute of Health Economics, Alberta, Canada. Retrieved 7th April 2015 from:
<http://research4children.com/data/documents/SexualExploitationofChildrenandYouthovertheInternetARapidReviewoftheScientificLiteraturepdf.pdf>.
- Ost, S. (2004). Getting to grips with sexual grooming? The new offence under the Sexual Offences Act 2003. *Journal of Social Welfare and Family Law*, 26(2), 147–159. doi:10.1080/014180304200023088.
- Pace, R., Pluye, P., Bartlett, G., Macauley, A. C., Salsberg, J., Jagosh, J., & Seller, R. (2011). Testing the reliability and efficiency of the pilot Mixed Methods Appraisal Tool (MMAT) for systematic mixed studies review. *International Journal of Nursing Studies*, 49(1), 47–53. doi:10.1016/j.ijnurstu.2011.07.002.
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P. Duan, N. & Hoagwood, K. (2013). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health*, 42(5), 533–544. doi:10.1007/s10488-013-0528-y.
- Palmer, S., Brown, R., Rae-Grant, N., & Loughlin, J. M. (1999). Responding to children's disclosure of familial abuse: What survivors tell us. *Child Welfare*, 78(2), 259-82. Retrieved 30th April 2017 from:
<https://search.proquest.com/docview/213803715?accountid=8630>.
- Paulhus, D. L. (1998). *Manual for the balanced inventory of desirable responding: Version 7*. Buffalo, New York: Multi-Health Systems.
- Peduzzi, P., Concato, J., Kemper, E., Holford, T. R., & Feinstein, A.R. (1996). A simulation study of the number of events per variable in logistic regression analysis. *Journal of Clinical Epidemiology*, 49(12), 1373–1379. doi:10.1016/s0895-4356(96)00236-3.

- Pendar, N. (2007). Toward spotting the pedophile: Telling victim from predator in text chats. In *Proceedings of the International Conference on Semantic Computing* (pp.235-241). doi:10.1109/icsc.2007.32.
- Pennebaker, J. W., Boyd, R. L., Jordan, K., & Blackburn, K. (2015). *The development and psychometric properties of LIWC2015*. Austin, Texas: University of Texas at Austin.
- Pennebaker, J. W., Booth, R. J., Boyd, R.L., & Francis, M. E. (2015). *Linguistic Inquiry and Word Count: LIWC2015*. Austin, Texas: Pennebaker Conglomerates.
- Perverted Justice Foundation (2015). *Perverted Justice Foundation*. Retrieved 3rd March 2016 from: <http://www.perverted-justice.com>.
- Pluye, P. (2013). The Mixed Methods Appraisal Tool: Assessing the methodological quality of qualitative, quantitative, and mixed methods research. *PCNE Working Conference-Berlin*. Retrieved 9th April 2015 from: <http://www.pcne.org/upload/wc2013/Lectures/Pluye.pdf>.
- Pluye, P., Robert, E., Cargo, M., Bartlett, G., O’Cathain, A., Griffiths, F., Boardman, F., Gagnon, M.P., & Rousseau, M.C. (2011). *Proposal: A mixed methods appraisal tool for systematic mixed studies reviews*. Retrieved 7th April, 2015 from: <http://mixedmethodsappraisaltoolpublic.pbworks.com>.
- Quayle, E., Allegro, S., Hutton, L., Sheath, M., & Lööf, L. (2012). *Online behaviour related to child sexual abuse: Creating a private space in which to offend-Interviews with online child sex offenders*. Retrieved 1st April 2016 from: <http://www.childcentre.info/robert/>.
- Quayle, E., & Taylor, M. (2003). Model of problematic internet use in people with a sexual interest in children. *CyberPsychology and Behavior*, 6(1), 93–106. doi:10.1089/109493103321168009.
- Quayle, E., & Taylor, M. (2001). Child seduction and self- representation on the internet. *CyberPsychology and Behavior*, 4(5), 597–608. doi: 10.1089/109493101753235197.
- Quayle, E., Holland, G., Linehan, C., & Taylor, M. (2000). The internet and offending behaviour: A case study. *The Journal of Sexual Aggression*, 6(1-2), 78–96. doi:10.1080/13552600008413311.
- Rahman Miah, M. D., Yearwood, J., & Kulkarni, S. (2011). Detection of child exploiting chats from a mixed chat dataset as a text classification task. In *Proceedings of Australasian Language Technology Association Workshop* (pp.157-165). Retrieved 12th April 2015 from: <http://www.aclweb.org/anthology/U11-1020>.
- Russell, D., Peplau, L. A., & Cutrona, C. A. (1980). The revised UCLA Loneliness Scale:

- Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, 39(3), 472–480. doi:10.1037/0022-3514.39.3.472.
- Sandelowski, M. (2007). Sample size in qualitative research. *Research in Nursing and Health*, 18(2), 179–183. doi:10.1002/nur.4770180211.
- Sandler, J. C., & Freeman, N. J. (2007). Typology of female sex offenders: A test of Vandiver and Kercher. *Sexual Abuse: A Journal of Research and Treatment*, 19(2), 73–89. doi:10.1007/s11194-007-9037-4.
- Saunders, D. G. (1991). Procedures for adjusting self-reports of violence for social desirability bias. *Journal of Interpersonal Violence*, 6(3), 336–344. doi:10.1177/088626091006003006.
- Savin-Baden, M. & Major, C. (2013). *Qualitative research: The essential guide to theory and practice*. London: Routledge.
- Schiele, B. C., Baker, A. B., & Hathaway, S. R. (1943). The Minnesota multiphasic personality inventory. *Journal Lancet*, 63, 292–297. In H. Nichols, & I. Molinder (1984). *Manual for the Multiphasic Sex Inventory*. Tacoma, Washington: Nichols & Molinder Assessments.
- Schlink, A. M. (1995). The utility of the MMPI and the MSI for identifying sex offender typology. *Sexual Abuse: A Journal of Research and Treatment*, 7(3), 185–194. doi:10.1007/bf02258503.
- Schneider, J. P., Sealy, J., Montgomery, J., & Irons, R. R. (2005). Ritualization and reinforcement: Keys to understanding mixed addiction involving sex and drugs. *Sexual Addiction & Compulsivity*, 12(2-3), 121–148. doi:10.1080/10720160500203468.
- Serious Crimes Act (2015). *Section 67 of the Serious Crime Act*. Retrieved 3rd April 2017 from: <http://www.legislation.gov.uk/ukpga/2015/9/section/67>.
- Seto, M. C. (2008). *Pedophilia and sexual offending against children: Theory, assessment, and intervention*. Washington DC: American Psychological Association.
- Seto, M. C. (2017). Research on online sexual offending: What have we learned and where are we going? *The Journal of Sexual Aggression*, 23(1), 104–106. doi:10.1080/13552600.2016.1251021.
- Seto, M. C., & Eke, A. W. (2005). The criminal histories and later offending of child pornography offenders. *Sexual Abuse: A Journal of Research and Treatment*, 17(2), 201–210. doi:10.1177/107906320501700209.

- Seto, M. C., Wood, J., Babchishin, K. M., & Flynn, S. (2012). Online solicitation offenders are different from child pornography offenders and lower risk contact sexual offenders. *Law and Human Behavior*, 36(4), 320–330. doi:10.1037/h0093925.
- Shannon, D. (2008). Online sexual grooming in Sweden: Online and offline sex offenses against children as described in Swedish police data. *Journal of Scandinavian Studies in Criminology and Crime Prevention*, 9(2), 160–180. doi:10.1080/14043850802450120.
- Sheldon, K., & Howitt, D. (2008). Sexual fantasy in paedophile offenders: Can any model explain satisfactorily new findings from a study of internet and contact sexual offenders? *Legal and Criminological Psychology*, 13(1), 137–158. doi:10.1348/135532506x173045.
- Shelton J., Eakin J., Hoffer T., Muirhead Y., & Owens J. (2016). Online child sexual exploitation: An investigative analysis of offender characteristics and offending behavior. *Aggression and Violent Behavior*. 30, 15-23. doi:10.1016/j.avb.2016.07.002.
- Simkins, L., Ward, W., Bowman, S., & Rinck, C. M. (1989). The Multiphasic Sex Inventory: Diagnosis and prediction of treatment response in child sexual abuser. *Annals of Sex Research*, 2(3), 205–226. doi:10.1007/bf00849716.
- Singer, M. I., Hussey, D., & Strom, K. J. (1992). Grooming the victim: An analysis of a perpetrator's seduction letter. *Child Abuse & Neglect*, 16(6), 872-886. doi:10.1016/0145-2134(92)90089-a .
- Smith, M., Cadiz, J. J., & Burkhalter, B. (2000). Conversation trees and threaded chats. *CSCW '00 Proceedings of the 2000 ACM conference on Computer supported cooperative work*, 97 – 105. doi:10.1145/358916.358980.
- Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research*. London: Sage.
- Snowden, R. J., Craig, R. L., & Gray, N. S. (2011). Indirect Behavioral Measures of Cognition among Sexual Offenders. *Journal of Sex Research*, 48(2-3), 192–217. doi:10.1080/00224499.2011.557750.
- Souto, R., Khanassov, V., Hong, Q. N., Bush, P., Vedel, I., Pluye, P. (2015). Systematic mixed studies reviews: Updating results on the reliability and efficiency of the Mixed Methods Appraisal Tool. *International Journal of Nursing Studies*, 52(1), 500–501. doi:10.1016/j.ijnurstu.2014.08.010.

- Spearman, C. C. (1910). Correlation calculated from faulty data. *British Journal of Psychology*, 3(3), 271–295. doi:10.1111/j.2044-8295.1910.tb00206.x.
- Stangor, C. (2007). *Research methods for the behavioural sciences* (3rd ed.) Boston: Houghton Mifflin Company.
- Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research & Evaluation*, 7. Retrieved 26th April 2015 from: <http://PAREonline.net/getvn.asp?v=7&n=17>.
- Stinson, J. D., & Becker, J. V. (2008). Assessing sexual deviance: A comparison of physiological, historical, and self-report measures. *Journal of Psychiatric Practice*, 14(6), 379–388. doi:10.1097/01.pra.0000341892.51124.85.
- Specialist Treatment Organisation for the Prevention of Sexual Offending [STOP SO] (2017). *Specialist Treatment Organisation for the Prevention of Sexual Offending*. Retrieved 25th April 2017 from: <https://www.stopso.org.uk>.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, California: Sage.
- Suler, J. (2004). Online disinhibition effect. *CyberPsychology and Behavior*, 7(3), 321–326. doi:10.1089/1094931041291295.
- Sullivan, J., & Beech, A. (2003). Are collectors of child abuse images a risk to children? In A. MacVean & P. Spindler (Eds.). *Policing paedophiles on the Internet* (pp. 11–20). Bristol: New Police Bookshop.
- Sullivan, J., & Quayle, E. (2012). Manipulation styles of abusers who work with children. In M. Erooga (Ed.), *Creating safer organisations: Practical steps to prevent the abuse of children by those working with them* (pp. 85–98). Chichester: John Wiley.
- Swaffer, T., Hollin, C., Beech, A., Beckett, R., & Fisher, D. (2000). An exploration of child sexual abusers' sexual fantasies before and after treatment. *Sexual Abuse: Journal of Research and Treatment*, 12(1), 61–68. doi:10.1177/107906320001200107.
- Tausczik, Y. R., & Pennebaker, J. W. (2010). The psychological meaning of words: LIWC and computerized text analysis method. *Journal of Language and Social Psychology*, 29(1), 24–54. doi:10.1177/0261927x09351676.
- Ten Have, P. (2011). *Doing conversational analysis a practical guide*. London: Sage.
- ThinkUKnow (2017). *CEOP Think U Know*. In association with the National Crime Agency. Retrieved 25th April 2017 from: <https://www.thinkuknow.co.uk>.

- Tong, A., Flemming, K., McInnes, E., Oliver, S., & Craig, J. (2012). Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. *BMC Medical Research Methodology*, 12(1), 181. doi:10.1186/1471-2288-12-181.
- Urbas, G. (2010). Protecting children from online predators: The use of covert investigation techniques by law enforcement. *Journal of Contemporary Criminal Justice*, 26(4), 410–425. doi:10.1177/1043986210377103.
- US House of Representatives. (2012). *18 U.S.C. Chapter 110 – Sexual exploitation and other abuse of children*. Retrieved 1st April 2016 from: <http://uscode.house.gov/uscodecgi/fastweb.exe?getdocbuscvviewpt17t20p1023p20bp%28%29%20%20>.
- Vandiver, D. M., & Kercher, G. (2004). Offender and victim characteristics of registered female sexual offenders in Texas: A proposed typology of female sexual offenders. *Sexual Abuse: A Journal of Research and Treatment*, 16, (2), 121–137. doi:10.1023/b:sebu.0000023061.77061.17.
- van Dam, C. (2001). *Identifying child molesters: Preventing child sexual abuse by recognizing the patterns of the offenders*. Binghamton, New York: Haworth Maltreatment and Trauma Press/The Haworth Press, Inc.
- van Gijn-Grosvenor, E. L., & Lamb, M. E. (2016). Behavioural differences between online sexual groomers approaching boys and girls. *Journal of Child Sexual Abuse*, 25(5), 577–596. doi:10.1080/10538712.2016.1189473.
- Wachs, S., Wolf, K. D., & Pan, C-C. (2012). *Cybergrooming: Risk factors, coping strategies and associations with cyberbullying*. [Cybergrooming: Factores de riesgo, estrategias de afrontamiento y asociacion con cyberbullying.] *Psicothema*, 24(4), 628-633. Retrieved 30th April 2017 from: <http://www.psicothema.com/pdf/4064.pdf>.
- Wakeling, H. C., Howard, P., & Barnett, G. (2011). Comparing the validity of the RM2000 scales and OGRS3 for predicting recidivism by Internet sexual offenders. *Sexual Abuse: A Journal of Research and Treatment*, 23(1), 146–168. doi:10.1177/1079063210375974.
- Wakeling, H. C., Mann, R. E. and Carter, A. J. (2012), Do low-risk sexual offenders need treatment?. *Howard Journal of Criminal Justice*, 51(3), 286–299. doi:10.1111/j.1468-2311.2012.00718.x.
- Ward, T., & Beech, T. (2006). An integrated theory of sexual offending. *Aggression and Violent Behavior*, 11(1), 44–63. doi:10.1016/j.avb.2005.05.002.

- Ward, T., & Hudson, S. M. (1998). The construction and development of theory in the sexual offending area: A meta-theoretical framework. *Sexual Abuse: A Journal of Research and Treatment*, 10(1), 47-63. doi:10.1177/107906329801000106
- Ward, T., & Hudson, S. M. (2000). A Self-Regulation Model of relapse prevention. In D. R. Laws, D. R., S. M. Hudson, & T. Ward (Eds.), *Remaking relapse prevention with sex offenders: A sourcebook* (pp. 79-101). Thousand Oaks, California: Sage.
- Ward, T., Polaschek, D. L. L., & Beech, A. R. (2006). Theories of deviant sexual preference. In T. Ward, D. L. L. Polaschek, & A. R. Beech, (Eds.), *Theories of sexual offending*. Chichester: John Wiley & Sons Ltd. doi:10.1002/9780470713648.
- Ward, T., & Siegert, R. J. (2002). Toward a comprehensive theory of child sexual abuse: A theory knitting perspective. *Psychology, Crime and Law*, 9(4), 319–351. doi:10.1080/10683160208401823.
- Ware, J., & Mann, R. E. (2012). How should “acceptance of responsibility” be addressed in sexual offending treatment programs? *Aggression and Violent Behavior*, 17(4), 279–288. doi:10.1016/j.avb.2012.02.009.
- Warner, S. (2000). *Understanding child sexual abuse: Making the tactics possible*. Gloucester: Handsell.
- Waysliw, O. E., Haywood, T. W., Grossman, L. S., Johnson, S., & Liles, S. (1992). *Measures of denial and cognitive distortions in alleged child molesters*. Paper presented at the American Psychological Association, Washington, DC.
- Webb, L., Craissati, J., & Keen, S. (2007). Characteristics of Internet child pornography offenders: A comparison with child molesters. *Sexual Abuse: A Journal of Research and Treatment*, 19(4), 449–465. doi:10.1177/107906320701900408.
- Webster, S., Davidson, J., Bifulco, A., Gottschalk, P., Caretti, V., Pham, T., & Grove- Hills, J. (2012). *European Online sexual grooming Project Final Report, European Union*. Retrieved 2nd April 2015 from:
<http://www.europeanonlinegroomingproject.com/media/2076/european-online-grooming-project-final-report.pdf>.
- Webster, S. D., Mann, R. E., Thornton, D., & Wakeling, H. C. (2006). Further validation of the short Self-Esteem Scale with sex offenders. *Legal and Criminological Psychology*, 12(2), 207–216. doi:10.1348/135532506x114347.
- Whittle, H., Hamilton-Giachritsis, C., & Beech, A., & Collings, G. (2013a). A review of online sexual grooming: Characteristics and concerns. *Aggression and Violent Behavior*, 18(1), 62–70. doi:10.1016/j.avb.2012.09.003.

- Whittle, H., Hamilton-Giachritsis, C., Beech, A., & Collings, G. (2013b). A review of young people's vulnerabilities to online sexual grooming. *Aggression and Violent Behaviour*, 18(1), 135-146. doi:10.1016/j.avb.2012.11.008.
- Whittle, H., Hamilton-Giachritsis, C., & Beech, A. (2014). In their own words: Young people' vulnerabilities to being groomed and sexually abused online. *Psychology*, 5(10), 1185–1196. doi:10.4236/psych.2014.510131.
- Whittle, H., Hamilton-Giachritsis, C., & Beech, A. (2015). A comparison of victim and offender perspectives of grooming and sexual abuse. *Deviant Behavior*, 36(7), 539–564. doi:10.1080/01639625.2014.944074.
- Williams, R., Elliott, I. A., & Beech, A. R. (2013). Identifying sexual grooming themes used by Internet sex offenders. *Deviant Behavior*, 34(2), 135–152. doi:10.1080/01639625.2012.707550.
- Wing, S. (1983). *Unpublished study*. In Nichols, H., & Molinder, I. (1984). *Manual for the Multiphasic Sex Inventory*. Tacoma, Washington: Nichols & Molinder Assessments.
- Winter, G. (2000). A comparative discussion of the notion of validity in qualitative and quantitative research. *The Qualitative Report*, 4. Retrieved 27th April, 2015 from: <http://www.nova.edu/ssss/QR/QR4-3/winter.html>.
- Winters, G. M., Kaylor, L. E., & Jeglic, E. L. (2017). Sexual offenders contacting children online: an examination of transcripts of sexual grooming. *Journal of Sexual Aggression*, 23(1), 62–76. doi:10.1080/13552600.2016.1271146.
- Wolak J., Finkelhor D. (2013). Are crimes by online predators different from crimes by sex offenders who know youth in-person?. *Journal of Adolescent Health*. 53(6), 736–741. doi:10.1016/j.jadohealth.2013.06.010.
- Wolak, J., Finkelhor, D., & Mitchell, K. J. (2004). Internet-initiated sex crimes against minors: Implications for prevention based on findings from a national study. *Journal of Adolescent Health*, 35(5), 424.e11–424.e20. doi:10.1016/j.jadohealth.2004.05.006.
- Wolak, J., Finkelhor, D., Mitchell, K. J., & Ybarra, M. L. (2008). Online “predators” and their victims: Myths, realities, and implications for prevention and treatment. *American Psychologist*, 63(2), 111–128. doi:10.1037/0003-066x.63.2.111.
- Wormith, J. S. (1986). Assessing deviant sexual arousal: Physiological and cognitive aspects. *Advances in Behavior Research and Therapy*, 8(3), 101–137. doi:10.1016/0146-6402(86)90001-9.
- Wright, R. G. (2014). *Sex Offending and the online sting*. In R. G. Wright (Ed), *Sex offender laws: Failed policies, new direction*. New York: Springer Publishing Company.

- Ybarra, M. L., Leaf, P., & Diener-West, M. (2004). Sex differences in youth-reported depressive symptomatology and unwanted internet sexual solicitation. *Journal of Medical Internet Research*, 6(1), e5. doi:10.2196/jmir.6.1.e5.
- Zilbergeld, B. (1980). *Male sexuality*. New York: Bentam Books.

