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An investigation of the linguistic and deceptive characteristics of online grooming types

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ABSTRACT

A defining feature of online grooming (OG) behaviour is the development of a deceptive relationship to hide the intent of sexual abuse. The OG discourse model proposes deceptive trust is central to entrapment and is predominantly achieved through language, yet it is unclear whether the intent of intimacy or sex impacts the communicative and deceptive properties of the chats. Fifty-seven chatlogs categorised according to the European OG Typology were analysed to address this gap. The results showed that whilst intentions might be distinct, adults develop positive/authentic social bonds with victims, and engage in strategies to match with victims who fulfil their goal for intimacy or sex. The impact of this study on the theoretical understanding of OG informs an updated and empirical definition of OG: "OG is when cyber-technology is used to build an emotional connection with a person to exploit their vulnerabilities and gain their trust causing harm and/or distress".

PRACTICE IMPACT STATEMENT

This research challenges current understandings of OG that assume the process to be deceptive, demonstrating that adults are skilled at developing positive and authentic bonds with their victims regardless of their initial intent being driven by intimacy or sex. The article will therefore be of interest to both academics and practitioners working within child protection, child sexual abuse and language analysis.

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exploitation

The use of information and communication technologies and social network services have transformed the way we develop and maintain social interactions. Stay-at-home restrictions in place during the COVID-19 pandemic accelerated the digitisation of personal communications to become an integral part of our daily lives (i.e. online schooling, online socialisation etc). However, this also led to an increase in predatory interactions (Greene-Colozzi et al., 2020) and the National Crime Agency (NCA) estimates at least 300,000 people in the UK pose a sexual threat to children online (Winchester, 2020). The digitisation of our lives means it is imperative we are empowered to identify behaviours that are exploitative and harmful.

One example of exploitative behaviour using information technology is the online grooming (OG) of children and young people, which involves the emotional entrapment of potential victims to persuade them into sexual behaviours (Lorenzo-Dus et al., 2016; Winters et al., 2020). Entrapment behaviours are proposed to centre on the development of an emotional relationship used to gain trust, assess the risk of detection, identify victim vulnerability and measure receptivity to grooming and

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sexual engagement (Winters et al., 2020). In both the online and offline context this trust is thought to be grounded in deceptive intent, whereby the adult aims to hide their true intent for abuse behind a false relationship (Olson et al., 2007; Williams et al., 2013). Online, this is achieved predominantly through language (Lorenzo-Dus et al., 2020) yet there is a lack of understanding around the behavioural and psychological processes involved in this crime. In response to this gap, Lorenzo-Dus et al. (2016) analysed the chat logs from 24 adults convicted of an online sexual offence according to the “online grooming discourse model” (henceforth, OGDM) with the aim to explore how OG communicative processes are realised discursively. Using data from the Perverted Justice Foundation (PJF) website (www.pjfi.org), which provides a database of un-edited transcripts from adults believing themselves to be interacting with minors for sexual purposes (decoy victims: those posing as young people), the model adopted a form of Computer-Mediated Discourse Analysis (CMDA) to analyse the meaning and social behaviour domains in the interaction. The form of CMDA involved language-focused content analysis based upon classic grounded theory by integrating content analysis (see Herring, 2004), speech acts (Austin, 1962) and relational work (Locher & Watts, 2005) to consider external factors that influence language (i.e. personality, socio-demographic features) (see Lorenzo-Dus et al., 2016). Thus, being one of the only models of OG placing unique focus on groomer discourse.

The OGDM revealed three phases of behaviour: “access” which marks the initial contact between the adult and intended victims; “approach” which refers to verbal lead-ins for offline contact; and the “entrapment phase” which includes four interconnecting processes (isolation, sexual gratification, compliance testing and deceptive trust development) aimed to lure or persuade the victim into sexual engagement (Lorenzo-Dus et al., 2016). The “isolation” of victims from family or significant others aims to establish physical and mental dependency from their intended victim; “sexual gratification” is reached via explicit and/or implicit romantic approaches; and “compliance testing” is a process which assesses the victims’ willingness to engage in sexual behaviours. Finally, “deceptive trust development” is a process in which an adult develops a friendly and personal relationship with the victim that is assumed to be deceptive. Five communicative strategies are identified within deceptive trust development: (1) exchange of personal information such as location, phone numbers and requesting a non-sexual picture; (2) Relationships – gathering information on past and present sexual and non-sexual relationships and appraising how the victim discusses their relationships with significant others; (3) Activities – talking about hobbies, online and offline behaviour, as well as discussing future and planned activities; (4) Praise – complimenting the victims’ physical and personal attributes which can be of a sexual and/or non-sexual nature, and (5) Sociability – using “small talk” to build an interpersonal relationship with victims, develop a social bond and minimise the threat (Lorenzo-Dus et al., 2016).

Language references relating to deceptive trust development were found to appear more frequently than any other process across the chatlogs and had a positive and significant correlation with isolation, compliance testing and sexual gratification. Thus, demonstrating that grooming “success” is grounded in the adults’ ability to foster a false emotional connection with a victim – regardless of how fast sexual content was introduced by the adult (Lorenzo-Dus et al., 2016). The validity of the model has been tested against an additional 46 chatlogs which found that the processes within the model emerged as relevant practices across all chatlogs, with an overall criterion validity of $r = .90$ (Izura et al., unpublished).

Deceptive trust development is considered a core manipulation strategy across various models and typologies of grooming behaviour (Olson et al., 2007; Williams et al., 2013; Winters et al., 2020), yet how this is operationalised and assessed is unclear. No known study has explicitly examined the deceptive characteristics of the vocabulary used online nor considered whether this differs across individuals, whether all adults who groom minors online engage in the grooming processes in the same way or whether this might be mediated by the adult’s initial intentions. For example, recent studies report deception strategies are motivated by intimacy, with some adults initiating contact with minors with the intent to develop what they perceive to be a reciprocal “relationship” (Broome et al., 2020; Chiang & Grant, 2018; Gámez-Guadix et al., 2018). The concealment of abuse

might not be required in such cases with grooming behaviour evolving rather than being the initial driving factor (Broome et al., 2020). Further, there are documented cases in which requests for sexual behaviour are made within minutes, possibly preceding the development of a relationship (DeHart et al., 2017; Kloess et al., 2019), and the term “online solicitation offender” is used to define those who use the internet to communicate with victims for sexual purposes without attempt to develop an emotional bond (DeHart et al., 2017). Such individuals might miss or place little focus on the relationship forming and trust stage and focus more on the sexual stage in which deception might be counterintuitive to achieving their goal.

Differences between OG typologies

There is a gap in knowledge relating to differences/similarities in the communicative strategies used by different groups of OG offenders, with very few studies distinguishing between typologies. A systematic review (Broome et al., 2018a; 2018b) evaluated Briggs et al’s (2011) fantasy vs contact typology in which individuals were classified based upon the point of sexual climax; fantasy being online and contact being offline. The typology is widely reported across the literature (i.e. Bergen et al., 2014; DeHart et al., 2017; Kloess et al., 2015), yet examination of the behavioural themes between contact and fantasy driven individuals did not identify unique definitional characteristics of behaviour (Broome et al., 2018a; 2018b). Rather, both groups demonstrated evidence of relationship building, direct solicitation, honesty and deception, and a “trade-off” between online and offline behaviour. The review concluded that a more appropriate classification of grooming types might be the European OG Project typology (intimacy seeking, adaptable and hypersexual individuals) which distinguishes between groups depending on the intensity of emotional involvement between the victim and offender rather than the space of exploitation (Webster et al., 2012).

Intimacy seeking individuals were proposed to focus on developing a relationship and did not attempt to hide their identity, preferring to be “liked” for who they are. Contact with the victim was considered consensual and additional online behaviours that signified they were engaging in sexual offending were avoided, as such individuals did not have previous convictions for sexual offences, nor did they contact other offenders online. All individuals in this group attempted to develop “intimacy” with the victim before introducing sex. Adaptable individuals focused less on the development of a relationship, instead focusing on their own needs and considered the victim “capable”. Identity and grooming tactics were adapted depending on the response of the victim with multiple identities often running in parallel. Individuals were likely to have previous convictions against children and were often in touch with other offenders. Finally, hypersexual individuals introduced sexual content very quickly and were clear in their intent for sexual engagement. They were found to have significant collections of child and extreme adult pornography and identified themselves either through an explicit name or image. They did not attempt to develop a relationship with the victim or have personal contact, instead using graphic sexual chat to dehumanise them and maintain highly sexualised communications (Webster et al., 2012).

The European OG Project aimed to advance our understanding of grooming behaviour from both the perspective of offenders and victims (<http://natcen.ac.uk/our-research/research/european-online-grooming-project/>). The project approach involved: reviewing police files; interviewing stakeholders (internet safety specialists, police, sex offender treatment specialists etc.) and offenders; analysing chat logs from convicted groomers; and youth led focus groups (Webster et al., 2012). The Framework method of case and theme analysis (Ritchie & Lewis, 2003) was used to plot a summary of interview responses which were considered under three key themes relating to features of OG, maintenance behaviours and risk management strategies. Using an iterative approach, the number of typology dimensions that related to the above themes were reduced until the sample could be allocated to one typology group only (intimacy seeking, adaptable or hypersexual) based on a set of behavioural dimensions: previous convictions for sexual offending; presence of identity deception; nature and extent of indecent image use; contact with other offenders online;

type of offence-support beliefs; speed of contact made to victim; how contact was made and sustained; and offence outcomes (online offending and/or offline contact) (Webster et al., 2012). The authors acknowledge that other behavioural dimensions may make important contributions to knowledge of grooming activities, the nature of which are unclear in the report, however the included dimensions were found to distinguish between individuals in their sample.

Although the typology recognises intent may differ across individuals (i.e. sex vs intimacy), what is unclear is whether individuals can be distinctly classified as being intimacy seeking, hypersexual or adaptable – particularly as behaviour/intent can be transient over time and may change depending on the response from victims. Further, it is unclear if the typology has language implications, which is important given that online offenders are known to employ a scatter-gun approach of selecting and communicating with multiple victims at the same time (Ozcalik & Atakoglu, 2020). Thus, examination of whether communicative and deceptive strategies change depending on groomer type was the primary aim of the present study.

Current study

The current study aimed to address the gap in knowledge around language approaches used by different groomer types. Specifically, the study aimed to examine the communicative profile and deceptive intent of the groomer types proposed by Webster et al. (2012), which separates groomer types on the development of a relationship and desensitisation to sexual activity. According to Webster et al. (2012), intimacy seeking individuals consider engagement with victims to be a consenting process, involving the development of an intimate relationship and therefore employ an honest and personalised approach. Adaptable individuals are considered to focus on their own needs and adapt their approach depending on how the victim presents. Finally, hypersexual individuals are highly sexualised, aim to de-humanise their potential victim and are explicitly honest about listing their sexual interest in young people. What is unclear is whether the intent of the individual (i.e. sex or intimacy) affects the grooming process, particularly as the OGDM proposes the relational work applied to developing the victims' trust does not depend on how fast an adult solicits a minor for sex (Lorenzo-Dus et al., 2016). The current study aimed to examine this through an overarching research question:

Does the communicative profile and deceptive intent of intimacy seeking, adaptable and hypersexual individuals differ across the entrapment phase (isolation, sexual gratification, compliance testing and deceptive trust development) of the OGDM?

The OGDM proposes the entrapment phase is the most frequently occurring communicative strategy where a majority of the grooming activity occurs (Lorenzo-Dus et al., 2016). As the current study aimed to examine the processes involved in luring victims into sexual engagement, the phases of accessing or approaching victims for offline content were not considered here.

Fifty-seven OG chatlogs were downloaded from the PJF website (www.pjf.org) where trained, adult decoy volunteers (i.e. those posing as young people) sit in chatrooms and if approached by an adult with sexual intentions, will converse and report the interaction to law enforcement. In the absence of data involving actual children, studies have turned to interactions involving offenders and decoys demonstrating parallels in offender behaviour relating to relationship development, rapport building and compliance testing (i.e. Black et al., 2015; Lorenzo-Dus et al., 2016; Williams et al., 2013; Winters & Jeglic, 2017). Limitations and challenges to decoy victim transcripts are provided in the discussion.

Method

Ethical approval

This study was approved by the Research Ethics Committee at Swansea University, Psychology Department.

Research design and analytical approach

The study employed quantitative text-based analysis techniques on 57 OG chats to explore the underlying sentiment of chat responses and to categorise language into psychological dimensions (Pennebaker et al., 2015; Tausczik & Pennebaker, 2010). Chats were categorised against the grooming types proposed by Webster et al. (2012) and corresponded to the phases of the entrapment process of the OGDGM (see Data Collection and Categorisation of OG Chats section for details). The OGDGM utilised a discourse-based analysis of OG chats (see Lorenzo-Dus et al., 2016), and was therefore considered to be directly relevant in guiding the approach the current study.

Hypotheses

Based upon the empirical literature, the research question was examined through the following two predictions (see procedure section for key variables and a description of how each hypothesis will be operationalised):

Hypothesis (Hp) 1: The communicative profile of intimacy seeking individuals will focus on building a connection and developing an interpersonal relationship with victims. On the other hand, hypersexual individuals will prioritise sexual talk.

Hp2: Adaptable individuals will be more deceptive than intimacy seeking and hypersexual individuals.

Data collection and categorisation of OG chats

Sixty-five chatlogs from adults convicted of an online sexual offence against a minor in America were purposively sampled from a database of PJF decoy chats held by the OG Communication Project (OGCP) at Swansea University. Chatlogs were downloaded corresponding to the phases of the entrapment process of OGDGM (deceptive trust development, sexual gratification, isolation, and compliance testing). As shown in Table 1, adults were male, with an age range of 21–63 (mean = 36; median = 33) and believed themselves to be interacting with adolescent (13–15 years old) males (n = 11) or females (n = 54). A Kruskal–Wallis H test determined that age distributions were similar across the three groups ($\chi^2(3) = 5.52, p = .06$).

Criterion for grouping in the present study were based upon the key classifications that separate the groups presented in Webster et al. (2012) which focused on: speed of grooming (i.e. time between first and last post), name tags and their intention for offline contact as per the key classifications in Table 1.

As can be seen in Table 1, only 57 of the 65 chat logs were categorised into the typology groups. The remaining conversations represented those that could not be neatly grouped based on Webster (et al.’s 2012) classifications and were therefore excluded from the analyse (i.e. where no unique behavioural dimensions could be identified). Two researchers (LB and CI) involved in the study

Table 1. Criteria for categorising chat logs, based on the European Online Grooming typology.

STAGE	INTIMACY (n = 17)	ADAPTABLE (n = 20)	HYPERSEXUAL (n = 20)
1: SPEED¹	12 h > First to last post	4–11 h First to last post	< 4 h First to last post
2: TAG NAME*	Own name.	Mixed: own name with adaptations.	Explicit, or cryptic
3: CONTACT	Offline contact discussed.	Mixed: online and offline contact discussed.	Focus on online sexual contact.
AGE	22–61	21–63	22–39
RANGEMEAN	38	38	30
MEDIAN	37	36	32

Note: ¹Webster et al. (2012) does not explicitly identify the speed of grooming for each groomer type. The current study therefore adopted speed of grooming from Lorenzo-Dus et al. (2017). * Online identity name.

independently assessed the transcripts against the classification described in Table 1 to ascertain if they met the inclusion criteria for intimacy, adaptable and hypersexual individuals. Differences of opinion could be resolved through inter-rater discussion involving, if necessary, a third researcher (JD) however consensus between the primary reviewers were reached in all cases. This form of inter-coder reliability is considered a suitable approach when measuring agreeableness and consistency of the categorisation of online interactive behaviours (Herring, 2004). Strengths and limitations of categorising individuals in this way are addressed in the discussion.

Procedure

Tool and process of analysis

The Linguistic Inquiry Word Count (LIWC2015) explored the communicative properties of the chats (Pennebaker et al., 2015). LIWC is one of the most used word frequency programmes, created to examine the words people use when talking about emotional experiences, and has been validated across several data sources (Tausczik & Pennebaker, 2010). It has been used in the context of OG (i.e. Black et al., 2015; Broome et al., 2020; Drouin et al., 2017a; 2017b) and found to be a useful tool in measuring the psychological and emotional constructs of OG conversations (Broome et al., 2020).

The programme quantifies natural language data against approximately 90 psychological categories and subcategories, which have been validated against measures of attentional focus; emotionality; social relationships; status; dominance and social hierarchy; social coordination and group processes; honesty and deception; relationships; thinking styles; and individual differences (see Tausczik & Pennebaker, 2010 for a full review). Any text can be submitted for analysis and a score of between 0 and 100 is automatically generated for summary variables (with higher scores representing a higher ranking of that variable). Total word percentage scores are produced for all other language categories with a score, for example, of 5.00 representing 5%.

LIWC does not recognise non-standard spelling (i.e. misspelt words or words that characterise net speak) and so transcripts in the current study were scanned for non-standardised spelling using a purposely developed computer programme (Chatroom-199; Carter, 2016) which also removed non-relevant data such as date stamps, usernames, and decoy victim comments.

Variables of Interest Relating to Hypothesis 1: The communicative profile of intimacy seeking individuals will focus on building a connection and developing an interpersonal relationship with victims. On the other hand, hypersexual individuals will prioritise sexual talk.

Data for chat logs classified as intimacy seeking, adaptable and hypersexual were analysed against the LIWC language categories presented in Table 2 to consider the focus of the chat. These categories are predefined by LIWC and were considered relevant to individuals who groom children/young people online by police and prison staff with experience of working with this offending group (Broome et al., 2020). Language variables were classified into high, moderate or low frequency groups intuitively based on LIWC outcomes to explore the communicative focus of the chats and examine differences/trends between the groups. High frequency language categories represented 11% and over of the aggregated chats; moderate categories represented between 6% – 10% and low frequency categories represented less than 5% of the chats. Limitations of this approach are addressed in the discussion.

Variables of Interest Relating to Hypothesis 2: Adaptable individuals will be more deceptive than intimacy seeking and hypersexual individuals.

Deceptive communication has been shown to be emotionally loaded (Kapoor & Khan, 2017); in the context of trust development positive emotion words are proposed to be associated with deception as a strategy to increase pro-social behaviour and perceptions of trust, reduce scrutiny and help the communicator appear genuine (DePaulo et al., 2003; Olekalns & Smith, 2009; Pennebaker, 2011). Several researchers also report on frequencies of pronoun use as a marker of deception (Chung & Pennebaker, 2007). For example, “you” terms are proposed to represent dishonesty as

Table 2. LIWC language categories rated by grooming specialists (from Broome et al., 2020).

Construct	Category	Description/Expression
Summary Variables	Clout	High levels: confident/dominant Low levels: humble/anxious
	Authentic	High levels: honesty/disclosure Low levels: guardedness.
Psychological Processes	Emotional tone	Balance between positive/negative attitude.
	Affective processes	Overall emotional words
	Positive emotion	Love, nice, sweet
Social Processes	Negative emotion	Hurt, ugly, nasty
	Friends	Buddy, neighbour
	Family	Daughter, dad, aunt
Cognitive Processes	Female reference	Girl, her, mum
	Male Reference	Boy, his, dad
	Causation	Because, effect, hence
	Certainty	Always, never, confident
Perceptual Processes	Discrepancy	Should, would, hopefully
	Tentative	Maybe, perhaps, depending
	See	View, saw, seen
Biological Processes	Feel	Feels, touch
	Body	Cheek, hand, spit
Drives	Sexual	Horny, love, incest
	Affiliation	Reference to others i.e. ally, friend, social
	Reward	Incentive, positive goals i.e. take, prize
Time Orientation	Risk	Reference to dangers, concerns, i.e. doubt
	Present focus	Present tense
	Future focus	Future tense
Informal Language	Net speak	btw, lol, thx
	Assent	Approval/ agreement i.e. agree, ok, yes
	Non-fluencies	Er, hm, umm
	Fillers	Conversational fillers (I mean, you know)

communicators attempt to distance themselves from a lie (DePaulo et al., 2003; Newman et al., 2003), whereas first person singular (e.g. I, me, mine, my, etc.) and plural pronouns (e.g. we, us, our, etc.) are proposed to represent honesty and authenticity (Hancock et al., 2008; Newman et al., 2003). Pennebaker (2011) further argues that the most valid marker of honesty and authenticity between communicative partners is the “you-and-I” pattern of *we*, which is an inclusive communicative approach that recognises specific people share a group identity. Finally, higher frequencies of descriptive/concrete language (i.e. words that can be understood and experienced through one of the five senses) have been reported in deceptive communication (Brysbaert et al., 2014; Newman et al., 2003). This is because concrete language is easier to retrieve from semantic memory, allowing those telling lies to focus their cognitive resources on the deception (Duran et al., 2010). Conversely, abstract language processes (i.e. words that can be understood through experience) are proposed to reflect honesty as truth tellers are able to commit to providing depth and detail to a story without the cognitive and emotional burden of telling a lie (Toma & Hancock, 2012).

Several studies have reported on the usefulness of LIWC language categories for deception classification to include pronoun use, affective processes and the frequency of positive and negative words (Levitan et al., 2018). The current study adopted LIWC features from previous deception studies (Bachenko et al., 2008; Hirschberg & Enos, 2009; Levitan et al., 2018) and extended the work to measure how descriptive/concrete the language is using a validated database as outlined below:

1. Emotional Expression: The LIWC language categories of interest were affective process (i.e. how emotional the language is), positive affect words and negative affect words.
2. Pronoun Use: Percentage scores were generated for LIWC language categories: “I”, “you” and “we”. Scores for “I” and “we” were combined and contrasted against scores of “you” to explore the overall attentional focus of groomers (i.e. inclusive/honest vs distancing/deceptive).

3. Descriptive/concrete language: Using a validated database of 40,000 English words (Brybaert et al., 2014), words within the chatlogs were given a rating (1–5) for levels of abstract and concreteness. Ratings are predetermined, with a score of 1–2 representing abstract words and a score of 4–5 being descriptive/concrete. Scores that fall in the middle of the scale (3) are words that can be both experienced and understood through language and are therefore not neatly categorised as either abstract or concrete (Brybaert et al., 2014). Such words were not considered in the present study, as we were only concerned with words explicitly defined as abstract or concrete. Frequencies of concrete and abstract words were converted to percentages for comparative analysis with LIWC outcomes.

Statistical approach

Chatlogs were analysed to consider: (1) communicative differences or trends across the grooming types; (2) whether differences or trends are observed within the OGDM processes depending on grooming type; and (3) overall patterns within the OGDM processes (aggregated dataset not categorised by grooming type). Differences between language categories and grooming types were investigated via t-tests and ANOVAs. Prior to analysis the data were first reviewed to establish if they met assumptions for the parametric test. All data were analysed in SPSS Version 25.

Results

Communicative profile

Analysis of aggregated data (i.e. not considered against the grooming types) found a significant difference between summary variable scores ($F(2, 54) = 30.01, p < .001, \eta^2 = .55$): mean scores for clout ($M = 85.43, SD = 5.92$) were significantly higher than emotional tone ($M = 67.61, SD = 25.57$) and authentic ($M = 46.55, SD = 14.55$) ($p < .001$); emotional tone was also higher than authentic ($p = .004$). High scores for clout and emotional tone indicate language was both confident/dominant and positive as shown in the corpus example: “You can talk to me;) what are your parents doing this weekend? ... you must have some pretty good friends ...”

As shown in Figure 1 there was a significant interaction between summary variables and grooming processes ($F(6, 54) = 6.19, p < .001, \eta^2_p = .41$). Comparing each level of the summary variables

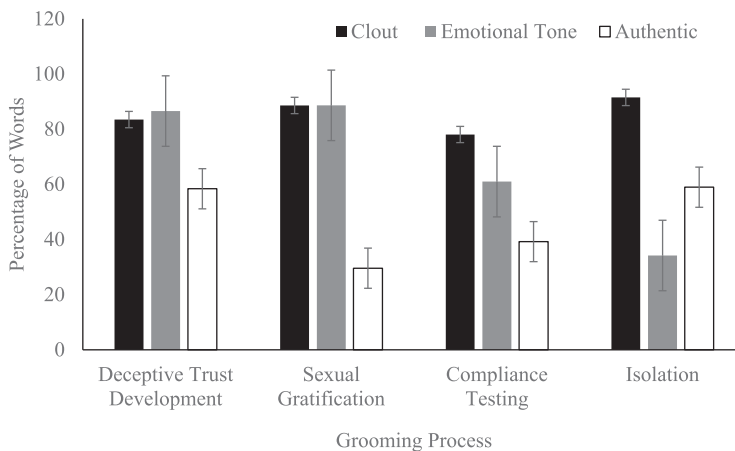


Figure 1. Interaction between LIWC summary variables and model of online grooming discourse, entrapment phase. Error bars represent the standard deviation.

across the OGMD, emotional tone ($F(3, 35) = 19.10, p < .001, \eta_p^2 = .62$) and authenticity scores ($F(3, 35) = 4.57, p = .008, \eta_p^2 = .28$) differed throughout the chat. Post hoc results showed that emotional tone was lower (more negative) when isolating victims compared to deceptive trust development ($p < .001$) and sexual gratification ($p < .001$). As illustrated in the following example taken from the corpus, speaking negatively about the victims' friends/family (as an example of isolation) and positively when discussing their own role in the victims' life (as an example of deceptive trust development) might be a strategy to achieve this: "... Is mom gone to work? ... Kinda boring for you, huh? ... and lonely too ... I still love you"

Levels of authenticity, which is a measure of honesty, were significantly higher during the process of deceptive trust development compared to sexual gratification ($p = .02$). Scores of clout did not differ across the entrapment phase ($F(3, 35) = 1.81, p = .164$), indicating levels of confidence/dominance was stable throughout the conversation.

As can be seen in Figure 2, no significant differences were found between the three grooming types for the LIWC summary variables of clout (levels of confident/dominance); emotional tone (balance between positive/negative words); and authentic (levels of honesty/disclosure) ($F(4, 54) = .781, p = .543$). Nor, was there an interaction between summary variables, groomer type and processes from the OGDM ($F(12, 54) = .232, p = .996$). All grooming types demonstrated high scores for clout (confidence/dominance) and emotional tone (indicating a positive approach) and moderate authentic (levels of honesty) scores.

The LIWC language categories identified as most relevant to OG by police and prison specialists (Broome et al., 2020: cf. Table 2) were considered here. Categories were grouped according to their frequency of occurrence in each of the three grooming types as: high frequency (accounting for 11% > of the conversation), moderate frequency (5%–10%) and low frequency category group (< 5%). There was a significant difference between the frequency groups ($F(2, 18) = 160.77, p < .001, \eta_p^2 = .95$), with high frequency language categories occurring at a significantly higher rate than both moderate and low frequency categories ($p < .001$). Moderate categories also occurred at a significantly higher rate than low frequency categories ($p < .001$).

As shown in Figure 3, there was no significant difference in the communicative profile between the three grooming types ($F(2, 18) = .80, p = .923$), or interaction between groomer type and language category ($F(4, 18) = .129, p = .970$). Individuals prioritised the present (present focus), interpersonal sharing (social processes) and cause–effect decision making (cognitive processes) above engagement in biological, perceptual and future focus regardless of groomer type.

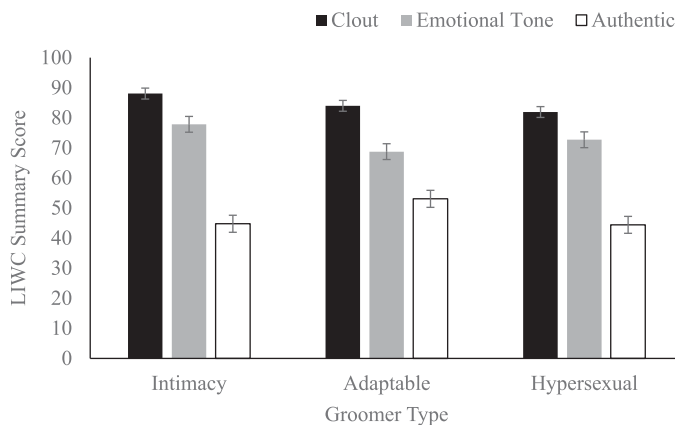


Figure 2. LIWC summary variables across grooming types. Error bars represent the standard deviation.

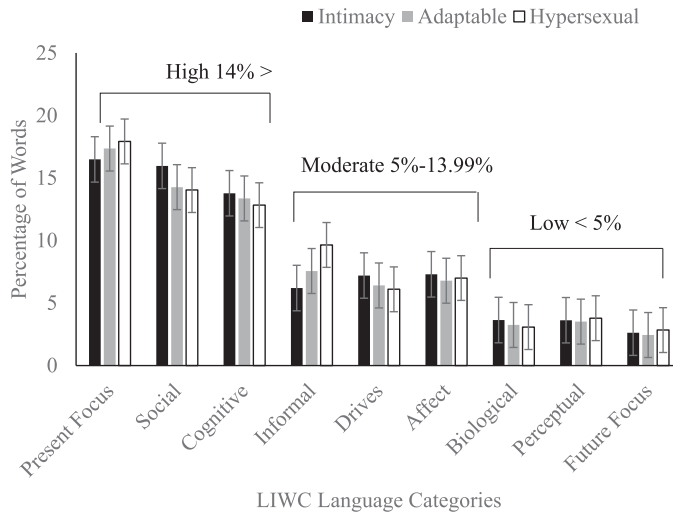


Figure 3. Percentage of words for high, moderate and low frequency language categories captured across grooming types. Error bars represent the standard deviation.

Analysis of deceptive intent

Emotional expression

Analysis of aggregated data found a significant difference between frequencies of positive ($M = 5.43, SD = 0.32$) and negative ($M = 1.56, SD = 0.14$) affect words as categorised by LIWC ($F(1, 27) = 23.87, p < .001, \eta_p^2 = .47$), with post hoc comparisons showing significantly higher frequencies of positive affect words being used throughout the chat ($p < .001$).

There was a significant interaction between affect type and processes ($F(3, 27) = 4.17, p = .01, \eta_p^2 = .32$) with difference in frequencies of negative affect words ($F(3, 35) = .52, p = .004, \eta_p^2 = .31$) across processes (Figure 4). Post Hoc comparisons showed lower frequencies of negative effect words within deceptive trust development compared to the process of isolating intended victims from friends/family ($p = .01$) and testing their willingness to comply with sexual activity ($p = .05$).

As can be seen in Figure 5 frequencies of affect words, distinguishing between positive and negative affect words in LIWC, were consistent across the three groups.

No significant differences in frequencies of overall affect words were found between grooming types ($F(2, 27) = .119, p = .889$) or grooming processes ($F(3, 27) = 1.24, p = .321$). Nor was there a

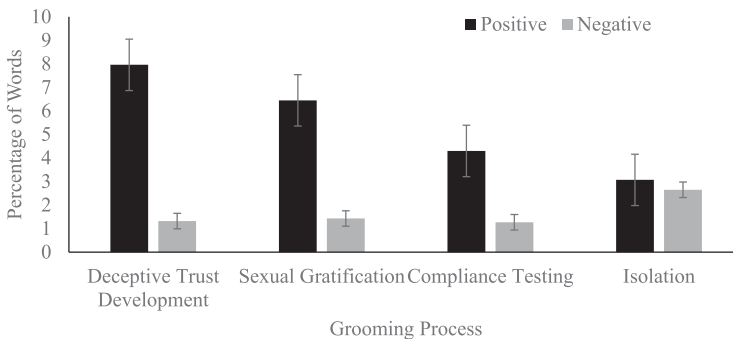


Figure 4. Interaction between LIWC affect type and processes in the model of online grooming discourse, entrapment phase. Error bars represent the standard deviation.

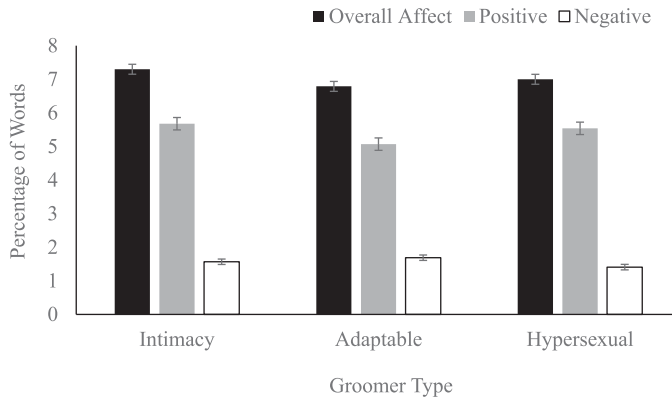


Figure 5. Mean percentage of overall affect, as well as positive and negative affect words as identified by LIWC across grooming types. Error bars represent the standard deviation.

significant interaction between groomer type and processes on affect word frequency ($F(6, 27) = .10, p = .996$). Demonstrating frequencies of affect words were similar across the three groups. The results of emotional expression indicate that regardless of groomer type, use of language was positive which is indicative of a deceptive approach in the context of interpersonal trust development.

Pronoun use

Analysis of aggregated data found a significant difference in the use of pronouns within the chat ($F(1, 27) = 14.40, p < .001, \eta_p^2 = .38$), with higher frequencies of “you” terms used compared to I/we terms ($p < .001$). This was also found when analysing the distinct “you”, “I”, “we” pattern ($F(2, 54) = 197.20, p < .001, \eta_p^2 = .88$), with frequencies of both “you” and “I” being used at a higher frequency than “we” terms ($p < .001$). “You” terms were also higher than “I” terms ($p < .001$). No significant interaction was found between pronouns and grooming processes ($F(6, 54) = 1.06, p = .398$), indicating pronoun use was comparable across the OGD. High frequencies of “you” alongside low frequencies of “we” represent deceit, but high frequencies of “I” terms mark truthfulness.

As shown in Figure 6, there were no significant differences in patterns of pronoun use across grooming types when considering frequencies of “you” and the combined “I/we” terms ($F(2, 27) = .252, p = .779$) or when comparing the distinct “you”, “I”, “we” pattern ($F(2, 27) = .252, p = .779$). Nor was there a significant interaction between groomer type and pronoun use (“you” and “I/we” = $F(2, 27) = .024, p = .976$) distinct “you”, “I”, “we” = ($F(4, 54) = .04, p = .997$).

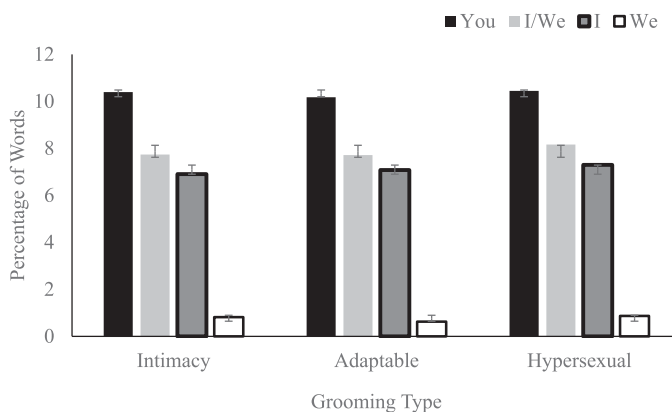


Figure 6. Mean percentage score of pronoun use across grooming types. Error bars represent the standard deviation.

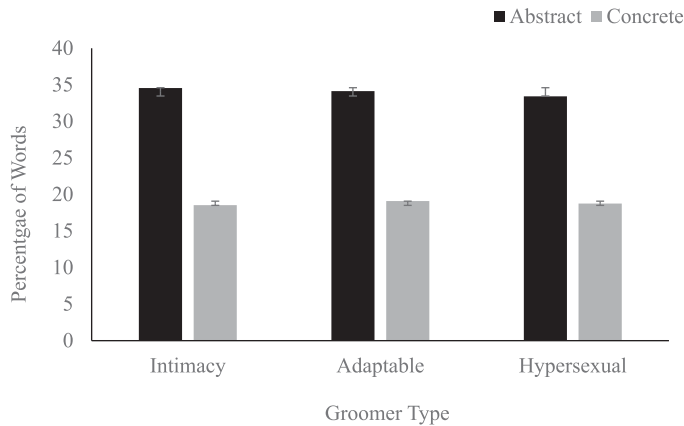


Figure 7. Mean percentage scores percentages of concreteness ratings across grooming types. Error bars represent the standard deviation.

Descriptive/concrete language

As can be seen in [Figure 7](#), higher percentage scores for abstract vs concrete language are observed across all groups, reflecting honesty.

When data were aggregated, significant differences were found between frequencies of concreteness ($F(1, 27) = 244.94, p < .001, \eta p^2 = .90$), with abstract words occurring at a significantly higher frequency than concrete words across the chats ($p < .001$).

No significant differences were found between groomer types ($F(2, 27) = .175, p = .841$) or grooming processes ($F(3, 27) = 1.05, p = .388$). Nor was there an interaction between concreteness and groomer type ($F(2, 27) = .42, p = .787$) or concreteness and processes ($F(3, 27) = .895, p = .457$). Additionally, there was no significant interaction between concreteness, processes, and groomer type ($F(6, 27) = .138, p = .990$). Again, demonstrating that regardless of groomer type, use of language was abstract which is indicative of an honest approach.

Discussion

The first hypothesis predicted that the communicative profile of intimacy seeking individuals would be the development of a connection and interpersonal sharing over sexualised talk, and that hypersexual individuals would prioritise sexual talk. The second hypothesis predicted that adaptable individuals would be more deceptive than intimacy seeking and hypersexual individuals. The results from the present study do not support these predictions, with no distinct profiles observed for intimacy seeking, adaptable or hypersexual individuals across the entrapment phase of the OGDM. Overall, results from the LIWC summary variables indicated that all chats were representative of language that were dominant (high scores of clout), positive and upbeat (with high scores of emotional tone). Further, adults were increasingly positive (emotional tone) when focusing on developing an emotional bond with victims (deceptive trust development) and preparing them for abuse (sexual gratification) regardless of their motivation for intimacy or sex.

Interpersonal sharing (social words) was prioritised across all groups in Webster et al's (2012) typology, indicating the focus on developing a social bond was not mediated by the intent to develop a relationship or seek immediate sexual gratification. Neither did intent influence how sexualised the conversation was, with words of a biological/sexual nature accounting for less than 5% of the conversation across all groups. The results of the present study support current understandings that OG is a form of persuasion (De Santisteban & Gámez-Guadix, 2017; Lorenzo-Dus et al., 2016) achieved by developing a friendly and personal relationship with the victim (Black et al., 2015;

Broome et al., 2020). A novel finding here is that their communicative approach was friendly and positive irrespective of the adults' motivational drive for sex or intimacy. This may work to reinforce, possibly to themselves and the victim, that the interaction is not harmful.

The analysis of deception across the European OG typology (Webster et al., 2012), does not support the hypothesis that adaptable individuals are more deceptive than intimacy seeking and hypersexual individuals. Language in all three groups was characterised by both honesty (self-reference and abstract approach) and deceit (positive affective drive and reference to "you"), which was not influenced by the intensity of the relationship developed between the adult and their intended victim. This novel finding does not fit in with current understandings of OG behaviour, either theoretically or from societal perspectives, that assumes the predatory groomer to be purposely deceptive in developing a false relationship (Lorenzo-Dus et al., 2016; Lorenzo-Dus & Izura, 2017).

The European OG Typology (Webster et al., 2012) suggests that grooming behaviour is not always driven by sex, rather there are adults who use the online platform to develop a romantic relationship with minors. This might be due to their own vulnerabilities, such as unemployment, losing their home or a breakdown of an interpersonal relationship (Webster et al., 2012). This is a view supported by prison and police specialists working with this offending group, who considered the process of grooming can occur without deception (Broome et al., 2020). The results from the present study strengthen this view and show the adults' initial intent does not regulate the presence of deception, nor does it emerge in their communication approach. Possibly because they all share one defining feature; they do not consider their behaviour to be problematic, though the reasons behind this may be distinct across the groups. In the case of intimacy seeking individuals who consider the interaction to be mutual and consenting, appraisal of their behaviour is idealistic and romantic as though pursuing a potential partner from which sex is an outcome (Webster et al., 2012). Adaptable and hypersexual individuals consider victims to be capable and can be honest about what they want from the interaction, seeing the victim as somehow complicit in the abuse (Webster et al., 2012). The communicative approach observed across groups in the current study (i.e. a positive drive, focus on interpersonal sharing and indicators of honesty and deception) might not only represent a lack of awareness of the deviant nature of this interaction, but may also be a tactic to attract victims. Thus, encouraging a trusting and positive response from victims is a strategy to reach their goal be it sex or intimacy.

Trust from a potential victim is essential in an online context, which requires reciprocity (Cialdini, 2009; Gámez-Guadix et al., 2018). Central to reciprocity is persuasion which can facilitate acceptance of abuse from victims (Craven et al., 2006), and has been linked to non-sexual involvement (i.e. how committed or involved the minor feels toward to the adult) in online sexual interactions between adults and minors (Gámez-Guadix et al., 2018). Thus, getting to know victims on an interpersonal level and appearing sincere may serve to maximise goal-driven intentions for all grooming types. Linked to this is the principle of "liking" which Gámez-Guadix et al. (2018) related to deception in the context of OG to encourage victims to have a positive perception of the offender. Chiang and Grant (2018) on the other hand found the desire to be liked reduced the presence of deception as some adults want to be accepted as they are. The results from the current study indicate the desire to be "liked", which is a key characteristic of intimacy seeking individuals (Webster et al., 2012), did not influence the communicative approach of the adult. Perhaps then, rather than exploring distinctions between these groups, it is their similarities that are important. Specifically, similarities in how they target and reach intent with victims.

Intimacy seeking individuals are likely to match with vulnerable victims looking for intimacy, with both parties potentially viewing this interaction as a real romantic relationship (Webster et al., 2012). Similar "matching" behaviour was observed for adaptable and hypersexual individuals. Hypersexual individuals seek young people who are risk-takers and demonstrate disinhibited behaviour; both may be open about sex. Adaptable individuals develop their approach to target both vulnerable and risk-taking young people (Webster et al., 2012). Therefore, whilst the intentions of grooming types might be distinct, all engage in strategies to find the "right" victim who fulfils their goal for intimacy or sex. The current study shows that one strategy to achieve this is to develop a seemingly

positive and authentic social bond with the victim. This might also enable individuals to alter their initial intent without the need to adapt their communicative approach or engage in complex processes of deception, which can help maximise success potential in the initiation of grooming with multiple potential victims (Berson, 2003; Child Online Exploitation and Online Protection Centre (CEOP) (2013).

Defining OG behaviour

Given the results here, and the heterogeneity in categorising OG in the literature (Winters et al., 2021), perhaps too much emphasis is placed on an area of grooming that is little understood – that trust development is deceptive and can be generalised to all adults who groom minors online. A new and empirical definition of OG is thus proposed: “OG is when cyber-technology is used to build an emotional connection with a person to exploit their vulnerabilities and gain their trust causing harm and/or distress”. The definition focuses on the victims’ emotional vulnerabilities rather than the process of developing a deceptive bond, whilst acknowledging the process of grooming itself can lead to harmful outcomes. This is important from the perspective of victims and care givers, who need to be empowered to understand the multifaceted nature of online child exploitation. This broad definition also ensures it can be applied to other groups at risk of grooming (i.e. vulnerable adults or those at risk of extremism).

Limitations and future directions

Several limitations should be addressed within the current study. Firstly, the data set analysed the communicative features of interactions involving adult decoy victims rather than interactions between adults and children. Differences have been reported between decoy and real victim transcripts, with Chiang and Grant (2018) identifying two additional grooming strategies relating to overt-persuasion and extortion not previously reported in studies using adult decoys. This was proposed to be due to genuine child victims displaying a degree of resistance, leading to increased use of coercion or forceful behaviour (Chiang & Grant, 2018). Nevertheless, Chiang and Grant (2018), along with several other studies, report important parallels such as rapport building, sexual compliance, and sexual gratification (Chiang & Grant, 2017; 2018; Lorenzo-Dus et al., 2016; Ringenberg et al., 2022). Approaches from adult decoys and consequently the offender may also be more explicit and compliant to ensure an arrest, however studies have shown it is the offender leading the conversation (Drouin et al., 2017b) and individuals communicating with decoys are often found to be communicating with “real” victims or in possession of child pornography (Mitchell et al., 2005). Schneevogt et al. (2018) considers that whilst we must acknowledge decoy transcripts might not be truly representative of interactions between adults and children, they “may still be useful for asking some important questions” in the absence of genuine child victim transcripts (2018, p. 101).

Secondly, consideration needs to be made as to whether the groups in Webster et al.’s (2012) typology are in fact distinct and represent grooming behaviour as there is a lack of validation for the typology. For example, the behavioural dimensions of hypersexual and adaptable individuals overlap with solicitation behaviours and may not represent grooming activity i.e. introducing sexual content quickly without attempting to develop a relationship with the intended victim. Additionally, it is possible intent can change over time and classifying individuals so precisely into a typology does not consider that intentions and desires can occur interchangeably. It may be that an individual seeks intimacy and explicit sexual gratification at different times and/or from different victims. Consequently, this needs to be considered within the present study and the way in which groups have been defined. The limitation here is that adaptable individuals may not represent a distinct group, rather they may represent a crossover of behaviour from individuals who might otherwise be characterised as intimacy or hypersexual. Whilst this may be considered a limitation of the present study, it is an important finding when attempting to categorise individuals into

offending types and provides further evidence that behaviours overlap between grooming types (i.e. Broome et al., 2018a; 2018b). Perhaps less focus should be placed on distinguishing groomer behaviour and defining individuals into a typology. This is indeed a strength of the present study, which characterised the features of the chat rather than the individual (i.e. name tag, online/offline contact, and length of contact). Future studies should consider whether it is more appropriate to define the content of a conversation rather than the individual, exploring whether different communicative approaches might exist in the same person. Future studies should also attempt to classify chat logs based on individual features beyond those considered here, including whether individuals interact with multiple victims and demonstrate various forms of intent (i.e. intimacy and solicitation).

The matching of grooming strategies to victim types is somewhat speculative in Webster et al.'s (2012) study. Nevertheless, they do present a framework of matching based upon the interplay between the adult and victim and future research should explore these dynamics further. For example, it is unclear whether the response of victims mediates the intent of the adult or if the adult truly aims to find a victim that matches their initial intent. Nor do we know if this depends on the individual differences of either the victim or offender, such as age, gender or whether either party has experienced other forms of abuse. This was not the aim of the current study, however, inclusion of victim discourse within future studies is needed to examine these factors. There is also limited understanding of what "intimacy" means to both victims and offenders, with very little understanding of perceptions of trust and intimacy from the perspective of offenders and the victims they exploit. Finally, the categorisation of the chats as being high, moderate or low frequency were made intuitively based on LIWC outcomes and categorising language variables using an alternative formula may alter outcomes. However, the aim of this study was to identify the communicative focus of chats and the significant difference observed between frequency categories offers important insight into the communicative strategies used by this offending group. Namely, the sexual element of the conversation might not be a communicative priority, and the interpersonal aspect of the conversation should be a focus for future research direction.

Conclusions

Rather than attempting to classify a heterogeneous group (Whittle et al., 2013) into distinct types based on classifications systems that are not validated, perhaps the focus should be on their similarities. Specifically, the way adults who groom minors online potentially "match" to victims demonstrating similar characteristics. This has important implications, principally concerning assessment of the interaction from both the victim and the adult and for victim protection and support. The development of an emotional bond not only leads victims to believe they have a close romantic and intimate relationship with the offender (Broome et al., 2020), but can also prevent victims from considering the interaction exploitive (National Prevention for the Prevention of Cruelty to Children (NSPCC) 2020). This is certainly the case for victims of intimacy seeking grooming, who are loyal to the adult and therefore resist disclosure to ensure continuation of the relationship (Webster et al., 2012). Non-disclosure is also a feature of victims from adaptable and hypersexual grooming, but because of blackmail or threats rather than loyalty to the offender (Webster et al., 2012).

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